A Multiple Case Study of Adolescent Piano Students: Examining Motivation Through the Lens of Interest Development

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A MULTIPLE CASE STUDY OF ADOLESCENT PIANO STUDENTS: EXAMINING MOTIVATION THROUGH THE LENS OF INTEREST DEVELOPMENT

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The School of Music

by

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B.M., Universidad de Costa Rica, 2013
M.M., Louisiana State University, 2015
May 2023
To Carlos, Marielos, María, Andrea, Ale, Lucía, Tomás, and Luis
Our deepest fear is not that we are inadequate,
Our deepest fear is that we are powerful beyond measure.
   It is our light, not our darkness, that most frightens us.
   … And as we let our own light shine,
We unconsciously give other people permission to do the same.
   As we're liberated from our own fear,
Our presence automatically liberates others...

— Marianne Williamson

*Our Deepest Fear*
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# Table of Contents

Acknowledgments........................................................................................................ iv

Abstract ....................................................................................................................... viii

Chapter 1. Introduction ............................................................................................... 1
  Need for the study ....................................................................................................... 3
  Purpose statement and research questions ............................................................... 5
  Definition of terms ..................................................................................................... 6

Chapter 2. Literature Review ..................................................................................... 7
  Cognition and self-regulated learning ..................................................................... 7
  Self-concept: self-esteem, self-perception of cost, and self-perceive cause of success/failure ........................................................................................................ 10
  Psychological needs, flow, and effective practice .................................................... 13
  The role of parents, teachers, and peers ................................................................. 14
  Interest and adolescence ......................................................................................... 18
  Interest Development ............................................................................................... 19
  The Four-Phase Model of Interest Development .................................................. 22

Chapter 3. Method ..................................................................................................... 26
  Research approach and design ............................................................................... 26
  Background preparation .......................................................................................... 27
  Participants and context .......................................................................................... 29
  Data collection ......................................................................................................... 32
  Data analysis ........................................................................................................... 34
  Positionally .............................................................................................................. 36
  Trustworthiness and rigor ....................................................................................... 37

Chapter 4. Profiles of Participants and Musical Background ..................................... 39
  Kate (Phase one) ...................................................................................................... 39
  Caleb (Phase one) ................................................................................................... 47
  Miranda (Phase two) ............................................................................................... 54
  Amanda (Phase two) ............................................................................................... 63
  Concluding thoughts ............................................................................................... 72

Chapter 5. A Cross-case Analysis ............................................................................ 74
  Triggered-situational interest development phase .................................................. 75
  Maintained-situational interest development phase ............................................... 81
  Common themes among participants from both groups ....................................... 87
  Common themes among teachers from both groups ................................ .......... 89
  Common themes among parents from both groups ............................................. 90
  Concluding thoughts ............................................................................................... 92

Chapter 6. Discussion, Implications, and Recommendations ................................... 93
Research questions and emerging themes................................................................. 93
Limitations, implications, and recommendations for future research..................... 106

Appendix A. Institutional Review Board Approval .................................................. 113
Appendix B. Piano Teacher Consent Form ............................................................... 114
Appendix C. Parental Consent Form ........................................................................ 117
Appendix D. Child Assent Form ............................................................................... 120
Appendix E. Interest Development Scale .................................................................... 121
Appendix F. Student Online Survey .......................................................................... 124
Appendix G. Student Semi-Structured Interview ....................................................... 125
Appendix H. Teacher Online Survey .......................................................................... 127
Appendix I. Teacher Semi-Structured Interview ....................................................... 128
Appendix J. Parent Online Survey ............................................................................. 129
Appendix K. Observation Protocol ............................................................................. 130
Appendix L. Documents Requested Protocol .............................................................. 131
Appendix M. Follow-Up Questions for Further Exploration During Interviews ............ 132
List of References .................................................................................................... 134
Vita.............................................................................................................................. 149
Abstract

One way of understanding motivation is through the factors that influence it. These factors analyzed as psychological constructs give rise to the notion of motivation variables such as interest. Interest is a powerful variable that affects student motivation to learn (Hidi & Renninger, 2006; Hulleman et al., 2017; O’Keefe et al. 2017; Renninger & Hidi, 2016; Tin, 2013). In 2006, Hidi and Renninger proposed the “Four-Phase Interest Development Model” for the characterization of interest in learning. According to this model, learners can move from a situational level of interest development to a well-developed individual interest, in a sequential manner. This multiple case study explored four adolescent piano students’ motivation to practice using the lens of the Four-Phase Interest Development Model. Musical general behaviors, psychological needs, and self-regulating behaviors, and the role of teachers and parents were also examined. Methodology included using Boeder et al.’s Interest Development Scale to identify participants (2021).

Participants who placed in phase one exhibited motivation in terms of musical behaviors as (1) value recognition in learning piano, (2) struggle with piano fundamentals, (3) independent practice avoidance, (4) pop music repertoire preference, and (5) solo recital and competition avoidance. Participants exhibited unfulfilled psychological needs: autonomy, competence, and belonging. The lack of needs fulfillment influenced their exhibited musical behaviors and self-regulation learning skills. Finally, motivation was exhibited in terms of self-regulation as absence of planning, self-instruction, and self-assessment.

Participants who placed in phase two exhibited motivation in terms of musical behaviors as (1) self-expression and value recognition in learning piano, (2) intermediate piano skills, (3)
independent practice enjoyment, and (4) solo recital and competition avoidance. Concerning psychological needs, participants exhibited simultaneously a partial fulfillment of competence while full fulfillment of autonomy and belonging. Finally, motivation is exhibited in terms of self-regulation as (1) emerging planning and self-instruction skills.

Using the “Four-Phase Interest Development Model” as a theoretical framework to understand motivation to practice during intermediate years may offer piano teachers both basic psychological knowledge and practical instructional strategies to foster, to trigger, or to promote interest development and motivation in the music studio.
Chapter 1. Introduction

What makes a student sit down at the piano and practice? Is it energy, inspiration, sense of duty or a combination of all these? From the psychological point of view, motivation is understood as the “personal and internal influences that instigate and sustain goal-directed activities that lead to outcomes such as choice, effort, persistence, achievement, and environmental regulation” (Schunk & DiBenedetto, 2020, p.1). As such, motivation plays a fundamental role in how individuals approach their learning processes.

One way of understanding motivation is through the factors that influence it. These factors analyzed as psychological constructs give rise to the notion of motivation variables like memory, self-regulation, self-efficacy, goal setting, attention, and interest (Murayama, 2019; Renninger & Hidi, 2019; Wigfield & Rosenzweig, 2016). This approach is prevalent in education where motivation theories tend to use a social-cognitive foundation (Paciello et al., 2016; Lazowski & Hulleman, 2016).

Interest is a powerful factor that affects student motivation to learn (Hidi & Renninger, 2006; Hulleman et al., 2017; O’Keefe et al. 2017; Renninger & Hidi, 2016; Tin, 2013); one that promotes effort, attention, efficiency, and persistence (Luo et al. 2019). In 2006, Hidi and Renninger proposed the “Four-Phase Interest Development Model” for the characterization of interest in learning. This model states that learners move from a situational level of interest—phase one and phase two, to a well-developed individual interest—phase three and four in a sequential manner. The first two phases depend mostly on external factors such as class structure, and the last two phases depend mostly on internal factors such as individuals’ recognition of content’s value in a specific area. Also, in phases three and four, individuals are capable to engage in self-regulated thinking. According to the authors, learners can move
sequentially from a situational level of interest to a well-developed interest, but they require constant triggers from teachers (e.g., novelty or challenge). If these triggers are not part of the learning process, learners can regress to the previous phase of interest. Hence, understanding interest in the context of music education might help teachers in tailoring their pedagogical approach to the individual experiences of the student.

Since 2006, Hidi and Renninger’s model has been cited in around 2900 research articles (Renninger & Hidi, 2019) yet there have been few published studies in the music domain referring to its use. In other academic areas such as language, social science, and STEM, students’ experiences have been monitored (Renninger & Hidi, 2019) identifying students’ cognitive and affective processes that influence their inclination to move from a short-term interest to a predisposition to reengage (Renninger & Hidi, 2016). Therefore, both music education and piano pedagogy may benefit from a descriptive and an in-depth study on students’ motivation to learn music through the lens of the “Four Phase Interest Development Model.” With this, teachers may have a tangible model that allows them to address and recognize students’ motivational state, and link it to general musical behaviors, psychological needs, and self-regulation. This could result in the deployment of appropriate tools, strategies, or interventions to increase their motivation to practice (Abbot, 2017).

Music lesson dropout occurs mainly in adolescence (Daniel & Bowden, 2013; Driscoll, 2009; Oliveira et al., 2021). In a systematic review, Oliveira and colleagues (2021) found that adolescent music students’ motivation has been investigated mostly through Attribution Theory, Self-determination Theory, Achievement-goal Theory, and Self-Regulation Theory. To the best of my knowledge only two research studies have been conducted in the music education area using the “Four-Phase Interest Development Model” as a theoretical framework: Roberts (2015,
To illustrate, Roberts (2015) conducted an instrumental case study ($N=24$), ages 9 years old that aimed to identify similar characteristics between music education classes that prompted situational interest in participants. Data were gathered during a period of four months. It included interviews, video-recordings, surveys, and short written assignments. The author found that (1) novelty, (2) perceived competence, (3) physical activity, and (4) creativity were key elements for students to experience situational interest in a music education general class.

The proposed study may offer a starting point to examine motivation to practice piano through the lens of interest development in adolescent piano music students. Qualitative research methods will allow the researcher to examine closely participants’ (placed in the situational phases of interest development) motivation to practice by conducting and in-depth study including general musical behaviors, psychological needs, and self-regulation. A qualitative approach allows the researchers to approach the research questions from multiple viewpoints and to analyze data with sufficient detail. This study aims to examine what is the role of teachers and parents along their learning process as well.

**Need for the study**

Interest development is yet to be studied in the context of precollege music education and piano pedagogy (Linnenbrink-Garcia et al., 2011; Sansone et al., 2019; Roberts, 2017). Previous studies in college level math, science, and language education have included utility-value interventions that connect educational content with the self, and hands-on activities that fit an appropriate level of challenge (Shin et al., 2019) to foster interest development. Findings have shown that individuals require external support and constant triggers even in the most advance interest development phases (Sloth et al., 2020).
Interest may be triggered; especially within students being considered as unmotivated (Hidi & Northoff, 2019) by fostering feelings of competence, autonomy, and belonging (La Guardia & Ryan, 2002; Legate et al., 2016; Ryan & Deci, 2000). During adolescence, careful examination of interest development as a motivational factor seems to be critical to not only understand how to support their motivation to learn, but also how to foster, trigger, or promote their level of interest to advance to develop in a subsequential phase in instrumental practice.

Social agents such as teachers, parents, and peers (Ahn & Bong, 2019), students’ self-perceptions, and psychological factors such as interest and cost permeate adolescents’ motivation to practice. Some key questions remain to be addressed such as an in-depth understanding of where the motivation comes from. Thus, questions such as, does motivation come from the experience itself or because the student wants to achieve a specific goal in particular? is there a way in which teachers can foster a new desire to engage or reengage students to practice? how can teachers guide students to embrace challenge and to regain motivation to practice when it decreased?” need further research (Sansone et al., 2019). Therefore, interest as a motivational factor may provide insight on it. It is also important to address the role of self-regulation, and psychological needs to clarify these questions (Sansone et al., 2019).

Conducting research on adolescents requires understanding on how they experience music, and how it is linked to their self-concept. By conducting research on motivation through the lens of interest development, effective ways that may foresee or help overcome students’ musical challenges may be identified. At the same time, teachers may recognize personal biases and assumptions that may lead them to inaccurately judge students, thus jeopardizing students’ motivation to learn (Murayama, 2019). Evidence suggested that by developing theoretical and structural models (Smith, 2011), investigating how to activate self-regulatory processes that
guide effective practice (McPherson & Zimmerman, 2011) and designing hands-on applications or interventions may facilitate adolescents’ motivation to practice (Linnenbrink-Garcia et al., 2011). It can be also beneficial for practitioners trying to support interest development because teachers can see where individuals may be lacking on specific aspects of interest to better structure any provided support (Hecht et al., 2020; Hidi & Renninger, 2006). Thus, students who may appear uninterested in learning, who exhibit low self-efficacy beliefs, or who experience difficulty with self-regulation (Palmer, 2011) may be approached through interest development to potentially energize their motivation to practice.

**Purpose statement and research questions**

The purpose of this study was to examine adolescent piano students’ motivation to practice through the lens of interest development. The intended goals for this study included (1) supporting existing literature in Interest Development, (2) identifying possible connections through this study between the variable of Interest Development and motivation to practice specifically in the music domain, and (3) hypothesize about and offering recommendations that may allow music teachers to foster motivation through a deeper understanding of interest as a motivational factor.

This qualitative study posed three research questions:

(1) How is motivation exhibited in terms of general musical behaviors, psychological needs (autonomy, competence and belonging), and self-regulation in adolescent piano students in the triggered- and maintained-situational phase of interest development?

(2) What is the role of teachers when working with adolescent piano students in the triggered- and maintained-situational phase of interest development?
(3) What is the role of parents when assisting adolescent piano students in the triggered-and maintained-situational phase of interest development?

**Definition of terms**

In the context of this study, I use the term *general musical behaviors* to refer to the examination of student’s self-reported and observed behaviors towards (1) lesson preparation, (2) recital preparation, (3) challenges of performing new repertoire, (4) goal setting, (5) teacher’s feedback, and (6) general challenges and actions taken, as reported by students, when learning piano.

To define adolescence, I use the World Health Organization definition “adolescence is a transitional phase of growth and development between childhood and adulthood within the ages of 10 to 19 years old” (World Health Organization, 2021, adolescents’ health, para. 1).
Chapter 2. Literature Review

This literature review aims to explore key areas that influence adolescents’ motivation to learn and the connection between motivation and the variable of interest: (1) cognition and self-regulated learning, (2) self-concept: self-esteem, self-perception of cost, and self-perceived cause of success/failure, (3) psychological needs, flow, and effective practice, (4) the role of parents, teachers, and peers, (5) interest and adolescence, and (6) interest development.

Cognition and self-regulated learning

Cognition refers to “the mental processes by which humans encode, manipulate, store, and use information” (Wigfield & Rosenzweig, 2016, p. 570). Jerome Brunner was recognized as a leader of the Cognitive Revolution during the 1950’s. He argued against the study of the human cognitive processes only through stimulus-response (behaviorism), while proposing constructivism as a more accurate and holistic approach to understand it. For constructivists, the study of knowledge includes the influence of information that individuals already owned: previous experiences, cultural influences, interactions with the environment, and/or individuals’ motivational state (Tolman, 1932; Ozdem-Yilmaz & Bilican, 2020). They assert that studying how human beings learned was beyond reactions and stimuli (p. 20). In fact, Wigfield et al. (2016) asserted that individuals’ actions relied on the relationship between motivation and cognition. They stated, “when people are motivated, they engage in more elaborate cognitive processing as a way to attain goals and accomplish different tasks” (p. 570).

Originally, cognitive science treated motivation as an independent system that only influenced human learning. Later, cognitive science embedded it as a necessary component to understand how the human mind learned and worked (Wigfield & Rosenzweig, 2016). Motivation influences individuals’ cognitive outcomes: it undermines or positively effects a
person’s determination to start or to continue a specific task. In fact, while encoding information from the environment, an individual will need to self-regulate, to set-up goals, to decide what specific behaviors to engage in, or to experience enough energy to initiate or to develop expertise in a specific area. Specifically, as expertise gradually develops in music learning, adolescents may seem reluctant to engage in an activity, but not because of lack of interest, but because of insufficient cognitive schemata, aural skills (Hallam, 1997a) or a low self-esteem that leads them to predict failure before engaging in a specific task (Carnevale, 2016). Consequently, they will avoid practice.

Self-regulation refers to how individuals self-direct their learning process transforming their mental skills into actual strategies to overcome a task (Zimmerman, 2015). Zimmerman’s model of self-regulation phase 1 is called forethought. In this phase the individual engages in task analysis by setting up goals and creating strategic plans. This phase also includes motivational self-efficacy beliefs, outcome expectations, intrinsic interest, and goal orientation. The next phase refers to the performance phase. In this phase the individual engages in self-control through self-instruction, imagery, attention focusing and task strategies. The individual also engages in self-observation through self-self-monitoring. The final phase is called Self-reflection. In this phase the individual engages in self-judgmental behaviors that include self-evaluation and causal attributions (Zimmerman, 2000). Adolescents experience positive emotions when trying to self-regulate themselves (Parker, 2020), yet in music performance, the required effort to practice a musical instrument might not be pleasant all the time and/or teachers’ instruction might not be clear to students (Lehmann et al., 2007). For example, Schatt (2011) examined the attitudes and perceptions of adolescent music students (N= 6) who were enrolled in a high school band program regarding practice at home and noted an interesting
contradiction. Participants reported that their teachers never explained to them how to practice; however, when following up with the teachers, they indicated that they always approached the music by providing practice strategies for them. Other studies have provided music teachers with tools and strategies to prompt self-regulation behaviors (Hallam, 2001ab; Nielsen, 2001). For example, Leon-Guerrero (2008) videotaped and interviewed sixteen adolescent music students to understand the self-regulation processes and strategies used during instrumental practicing. She found that repetition was one of the most used strategies, although being recognized in the literature as not the most effective one when is not goal oriented. Therefore, she urged teachers to understand what students think when practicing, to help them to acquire effective practice strategies.

Recent research has located interest as a foundation for experiencing motivation when activities become more challenging (Thoman et al. 2017). Thoman and colleagues positioned interest within a self-regulation perspective because of its relationship to individuals’ motivation to reengage:

Interest arises during the pursuit of goals, as a function of both what a person brings to the activity and the activity parameters. Importantly, this experience is not necessarily stable over time. One’s experience may vary as the activity itself changes or the activity context changes. These changes might be influenced by the nature of the activity itself, those who structure the task (e.g., teachers, parents, or peers), or even by the individual doing the activity (p. 28)

Adolescents tend to be reward seeking and they experience difficulty when regulating their thoughts and emotions and/or making rational plans (Parker, 2020). Simultaneously, they may not have yet the cognitive capacity to engage in behaviors that facilitate learning (Darling-Hammond et al., 2020; Hallam, 1997a), or according to Renninger and Hidi (2019) if an
individual does not experience interest, the idea of prompting self-regulation behaviors may be problematic (Sansone et al., 2015).

Music researchers have explored a wide variety of strategies to increase students’ motivation to practice (Codgill, 2015; Martin et al., 2016; Tan & Sin, 2019; Tan & Sin, 2020; West, 2013). Yet, for some students it is not easy to find that vital energy to persist or to (re)engage in their music practice. Adolescents have the tendency to not react rationally when experiencing higher levels of stress (Parker, 2020). However, “adolescents see beyond what we may think, they exhibit a deep capacity for metacognition and abstract reasoning” (Parker, 2020, p. 79); both critical skills to engage in practicing a musical instrument. Vassil (2013) explored why students continue to enroll in a high school extracurricular music program, finding that the social environment influences them to continue attending music lessons even more that familial and economic factors.

**Self-concept: self-esteem, self-perception of cost, and self-perceive cause of success/failure**

Self-concept is an umbrella term related with self-esteem, self-perception of cost, and self-perceived causes of success and/or failure; all of them affecting how individuals process new information. Thus, it consequently affects motivation and self-regulation processes (Marsh et. al., 2019; McPherson & McCormick, 1999; Renninger & Hidi, 2019; Zimmerman & Cleary, 2006). In a study that focused on musical examination outcomes, Hallam et al. (2018) examined the role of practice and motivation in a young population of 2131 musicians with ages 6-19 years old. The findings showed that the students who exhibited higher levels of motivation and perceptions of self, showed effective approaches to practice. Thus, scored higher in tests and examinations.

Adolescents’ musical self-concept (Elliot & Dweck, 2005; Marsh et al., 2019) is
influenced by what they believe other’s think about them; thus, it affects directly their self-esteem (Parker, 2020), and impacts their identity growth. Self-esteem refers to “how much value individuals place on themselves… it is an emotional evaluation of that knowledge” (Carnevale, 2016, p. 832). Recent studies showed individuals’ self-esteem can change between childhood and teenaged years (Rentzsch et al., 2016). Masselink and Oldehinkel (2018) found that adolescents with low self-esteem sought to evade situations perceived as dangerous to safeguard themselves from more harmful experiences (p. 940). In another study, Robins and Trzesniewski, (2005) asserted that usually during childhood self-esteem tended to be high, but then a noticeable decrease, especially for girls was noted during adolescence (p. 158). In the music domain, Culp (2016) found that students with low self-esteem usually underperformed when compared with students with higher levels of self-esteem.

The psychological factor of cost might influence student’s motivation to engage and/or reengage in a specific activity. Cost refers to “any negative consequences of engaging with a task” (Rosenzweig et al., 2019, p. 622). It includes effort cost, emotional cost, perceptions of ego threat, and needing to fulfill another person’s expectations. As average students get older their motivation to learn a musical instrument decreases dramatically (Pintrich & Schunk, 1996; Wlodkowski & Jaynes, 1990). Many of them may see practicing a musical instrument as a boring imposition like school homework (McPherson & Davidson, 2002; McPherson & Zimmerman, 2011) or as a not-engaging activity that takes away time from socially sharing with their peers (Linnenbrink-Garcia et al., 2011; Parker, 2020) or that doesn’t fit their personal goals (Mansfield, 2012). For example, for an adolescent, the amount of time invested to practice may interfere with other activities of major interest for them (Linnenbrink-Garcia et al., 2011).

According to Attribution Theory, individuals are influenced by their self-perceived
causes of success and failure (Asmus, 1986; Weiner, 1985). During adolescence, the self-attributed causes for succeeding or failing in a specific task have a large psychological impact that will shape future learning experiences. Also, what they believe about themselves, their traits and attributes will influence subsequential actions (Dweck, 2007). Austin and Vispoel (1998) reported that adolescents with a low self-concept tended to attribute musical failure to lack of ability—a fixed trait in which they don’t have any control over their performance outcome, instead of lack of effort—a set of specific actions that allow them to control their performance outcome (Dweck & Legget, 1988). Educational environments usually emphasize social comparisons (Rosenzweig et al., 2019). Therefore, the potential fear of failure or social exposure to peers might influence how adolescents would want to get involved and/or avoid a specific activity.

Through the lens of Achievement Goal Theory, De Castella et al. (2013) sought to examine the relationship among fear of failure, success orientation, and student disengagement in Australian and Japanese high school students. Results included the appearance of defensive and pessimistic thinking when students were anxious, thus, they showed lack of motivation and disengagement from school. Meanwhile, “Australian and Japanese students who reported high success orientation reported lower rates of self-handicapping, helplessness, absence, and disengagement” (p. 874). Thus, teachers in charge of adolescents might carefully consider the vocabulary used when attributing reasons for success or failure. It is suggested to avoid the idea that musical ability is hereditary (Parker, 2020). Teachers may contemplate the use of words such as effort instead of luck or talent to offer students perspective when dealing with experiences considered as “failure.” Teachers may also refer the experience of failure as a vital and unavoidable component of the learning process (Parker, 2020; Smith, 2011; Svinicki, 2004).
Psychological needs, flow, and effective practice

Self-Determination Theory states that all human beings have three basic psychological needs: autonomy, competence, and belonging (Ryan & Deci, 2000; Wigfield et al., 2016). The authors refer to self-determination as “an energizing state that, if satisfied, contributes to health and well-being but, if not satisfied, contributes to pathology and ill-being” (p.74). Autonomy refers to being able to get involved in decision-taking, and to connect how the outcome will be related to individuals’ larger goals. Competence refers to being able to learn and achieve new goals. Relatedness refers to being able to self-perceive connection to others (Ryan & Deci, 2000). Some music studies have focused on exploring each of the psychological needs separately, for example: (1) autonomy (Comeau & Huta, 2014; Küpers et al., 2014), (2) competence (McCornick & McPherson, 2003; McPherson & McCormick, 2006; Ritchie & Williamon, 2012), and (c) relatedness (McPherson et al., 2012). Other studies have explored all three by using the basic psychological needs as a theoretical framework. For example, Evans et al. (2012) explored why children and adolescents continued or ceased playing musical instruments. Participants (N=157) completed a survey that included a final open-ended questionnaire. Results showed that students wanted to dropout because of lower experienced level of autonomy, competence, and relatedness (p. 600). Similarly, Evans et al. (2019) found that variance in three key outcomes: (1) practice time, (2) intentions to keep enrolled in an orchestra program, and (3) self-esteem may be linked to psychological needs satisfaction.

questionnaire in which they assessed the effects of the psychological needs and how it impacted flow. Results urge conservatoire teachers to understand that in order to prevent frustration and foster flow in practice sessions, the students’ perception of competence must remain present (p.1).

Fostering students’ intrinsic motivation might be a desired musical outcome for music teachers. Saeed and Zyngier (2012) found that students who are mostly intrinsically motivated were the ones that exhibited more engagement. In contrast, Comeau and Huta (2014) found that by providing a student with an external reward, the student increased practice time. However, lower autonomy motivation and lower interest in playing with creative mindset was showed. Cheng and Southcott (2016) conducted a case study that examined three experienced piano teachers’ considerations on students’ (varied range of ages) motivation in piano learning. They found that teachers expected to satisfy student’s psychological needs during the process of learning the instrument, and consequently students remained motivated to keep taking lessons.

Students’ needs should be considered from a multi-dimensional perspective (Evans et al., 2019), as well as the emotional connections linked to the continuation of music studies (StGeorge et al., 2014). As a motivational factor, interest development aims to “foster feelings of competence, autonomy and belonging to assist students evolving and growing interests” (Minnaert et al., 2011; Renniger, 2010), thus it might be of relevance to study.

The role of parents, teachers, and peers

Important others provide support, empowerment, and structure to adolescents and learners in general (Benson et al. 2007; Parker, 2020). Adolescents require that adults encourage them to take challenges while fostering and providing them with the necessary tools to be successful (Parker, 2020). Adolescents are more likely to build integrated regulation when
important others invest in them and perceive them as part of their support system (Parker, 2020). In fact, student’s perception of teacher support and school belonging influence learner’s motivation to learn (Patrick et al., 2002). Hallam et al. (2016) sought to examine the related issues in motivation as expertise develops. From a sample of 3325 music students from ages 6 to 19 years old, the findings showed that the social, familial, and educational components (parents, teachers, and peers’ relationships) play a critical role for students not only in their motivation to learn but as a source of identity formation as well.

Parents

Adolescents’ parents can foster interest in a variety of ways that teachers cannot (Hyde et al., 2017). Csikzentmihalyi (1990) found parents’ cognitive and intellectual support effect adolescents positively. Actions such as time to meet the child’s needs, setting high standards, providing lessons and material and attitudes that leads to enjoyment and satisfaction revealed a strong impact on students’ motivation to keep engaging in a task. In academic domains, interventions have been proposed to increase students’ interest in specific subjects. For example, Harackiewicz et al. (2016) framed an intervention on interest targeting students’ parents. Using an informative brochure, authors communicated the utility value of taking STEM courses during high school to students’ parents. Results suggested that students’ interest increased in a significant manner after the intervention. The authors noted after the intervention, students even considered enrolling in STEM classes once in college.

Parents play a fundamental role in students’ motivation to learn, and consequently to practice a musical instrument (Bloom & Sosniak, 1985; McPherson, 2009). For example, Steinberg et al. (1992) found that adolescent music students’ motivation improved when their parents attended concerts and demonstrated interest in their general musical improvement. Also,
Creech (2010) asserted that
Positive outcomes may be achieved when parents: (a) elicit their children’s views regarding appropriate parental involvement; (b) negotiate with their children over practicing issues, within parameters set by the teacher; (c) provide a structured home environment for practice; (d) take an interest in promoting good teacher–pupil rapport; (e) communicate with the teacher in relation to the child’s progress; and (f) remain as a supremely interested audience (P. 13)

Adolescents’ parents can also negatively affect students’ motivation in different ways. For example, Xu et al. (2018) reported that when adolescents’ parents get involved in psychological control, it led to adolescents’ maladaptive academic function leaning towards performance-avoidance goal orientations. Parents may also negatively influence students’ perception on what is valuable and what is not. For example, parents may believe in the attributed value to the musical profession, but in unexpected comments, they could reveal that they don’t respect the profession (Ho, 2009). This contradiction may affect student’s motivation to keep involved in music.

Teachers
Motivating adolescent music students to practice can be challenging for music teachers for multiple reasons (Austin et al., 2006; Kupers et al., 2015; O’Neill & McPherson, 2002; McPherson & Zimmerman, 2011). Decisions such as when and how long to practice, the need to experience autonomy, competence, and relatedness, and the desire to promote self-regulation behaviors are some of the puzzle pieces that teachers aim to resolve. Adolescents who perceive their teachers as part of their support system will experience self-efficacy beliefs. On the other side, Campayo-Muñoz and Cabelo-Mas (2018) found that if teachers have initial negative assumptions regarding them, the students will know, and their motivation will decrease. These
researchers continued by saying that by promoting effective relationships between teachers and peers, students’ motivation yield a positive effect. In an intervention study, Freer and Evans (2019) tested a structural model of psychological needs satisfaction and intentions to study music as an elective class in high school. Results showed that by fostering students’ connectedness with the music, teachers, and peers, students will experience competence in higher levels (p. 791).

Music teachers have a significant influence on adolescents’ motivation to learn; they act as a friend-mentor role model (Lehmann et al. 2007; McPherson & Zimmerman, 2011) and transmit certain skills, values, and emotions (Bandura, 1989). The teacher’s role changes over time. Sosniak (1985) distinguished three different phases of learning being experienced. The first phase regards the early years where students see the music teacher with love and respect. The lessons are playful, and the camaraderie is key in the teacher-parent-student relationship. The second stage is where the student perceives more attention to detail, time investment, and larger practice sessions to achieve musical outcomes. Usually, this period coincides with the adolescent age; therefore, students tend to have a desire for exploring their own ideas and their interests which are not necessarily the same as before. During this time, students work on their identity formation, so it is a time of extreme vulnerability. Finally, students reach the third stage of learning when the commitment to music is firm, and students want to devote time and energy to music. Literature suggests that to influence students’ motivation and foster identity formation, teachers may provide plenty opportunities to explore student’s musical identity and leadership within their community (Parker, 2020) thorough individual practice and musical ensembles.

**Peers**

Peers might have a critical role in adolescents’ motivation to engage in music; thus, leading them to effective practice strategies used (Comeau & Huta, 2014; McPherson &
Adolescents tend to engage in effective practice behaviors when experienced feelings of belonging with their peers (Bacura, 2019; Parker, 2020). Svinicki (2004) asserted “When students feel that they are part of a social group of the class and are working with others in the class to achieve similar ends, their motivation to participate is enhanced” (p. 148). An opposite phenomenon may occur due to adolescents’ increased self-awareness. Self-awareness triggers social comparisons with their peers, self-imposed pressure, peer pressure to perform, or to behave in a certain way (Wlodkowski & Jaynes, 1990). Thus, music teachers might be aware of these arising situations, and apply appropriate strategies to foster positive social dynamics to alleviate potential negative outcomes. Students arrive to lessons with their own set of interests, and they will be influenced by the situational interactions between teachers and peers. Teachers cannot influence previous interests that the students carry to the music lesson, but they could influence them by making informed choices about instructional and curriculum materials.

**Interest and adolescence**

Age influences how an individual experiences interest and impacts its development (Renninger & Hidi, 2020). Adolescence has been identified as “a period of relatively extensive plasticity in that adolescents have the capacity to actualize that plasticity through intentional self-regulatory processes” (Lerner et al., p. 12, 2016). Music as well as academics is a constant learning process that demands these self-regulatory processes (Hidi & Ainley, 2002). To examine adolescents’ underlying mechanism of interests, Slot et al. (2020) conducted a qualitative research study with participants (N=6) who were 14–15 years old. Data were collected through entries on a smartphone application created by the researchers. Researchers requested adolescents to report any activity they were engaged during the day. Participants also
needed to reflect on why that situation was considered “interesting” for them. Data analysis revealed six critical interest sustainment mechanisms: (1) individuals’ goal setting, (2) biographical identification, (3) individuals’ valuing of learning improvements or skills, (4) individuals’ curiosity on the interest object, (5) presence of social others, or memories of good times memories with the object, and (6) adolescents’ involvement in a practical way. At the same time, the study produced evidence on how the psychological factor of “self-image” is critical to maintaining adolescent’s interest over time.

Adolescents challenge social conventions, strive to find their own and unique identity, and work on developing the appropriate schemata close to their physical and social changes (Reninger & Hidi, 2016). They want to explore how they fit in other people’s lives, what their role is, and what they want to do. Recent works have focused on the reasons why teenaged students lose interest in instrumental studies (Egilmez & Engur, 2017; Gerelus et al., 2017, Hidi & Ainley, 2002; Juvonen, 2011; Ng, 2017). Emerging themes include: (1) adolescents’ reexamination of existing interests which might or might not influence their choice to keep pursuing them, (2) time and effort required don’t meet their social and/or individuals’ goals; (3) basic psychological needs are not satisfied; (4) successes have not been yet experienced, (5) self-doubt on their abilities’ set, and (6) an increased self-awareness of what other people think about them. Likewise, Hidi & Ainley (2002) also found that adolescents tended to evade activities and/or situations in which they feel incompetent while choosing to focus their attention on activities in which they experience competence.

**Interest Development**

Interest development is defined as “the psychological state of individuals as they are engaging with content and their motivation to work with that content over time” (Renninger &
Interest is malleable in nature, different from “liking” or “wanting,” and it can be triggered in any situational moment (Renninger & Hidi, 2019). Some authors consider interest as a positive emotion (Fredickson, 2001) whereas others consider it as a feeling or affect (Renninger & Hidi, 2011). Interest is also associated with attention, curiosity, and memory (Renninger & Hidi, 2016); it involves both cognitive and affective elements that direct individuals to experience attention and flow with a positive tone most of the times (Thoman et al., 2017). When an individual obtains an external incentive, the brain’s reward circuitry is activated. According to affective neuroscience, interest activates the same brain reward circuitry when the individual expects and seeks information (Renninger & Hidi, 2019) which in turn affects the individual’s learning process and final outcomes (Gruber et al., 2014).

Interest development has been studied mainly in college courses in the form of Utility Value Interventions (Harackiewicz et al., 2016; Hecht et al., 2020) and in STEM (Grau Talley & Martinez Ortiz, 2017; Renninger et al., 2018; Rotgans & Schmidt, 2017; Tapola et al., 2013). Slot et al. (2020) refer to interest development as “the leading pathway to a wealth of positive outcomes for adolescents” (p. 1). Thoman et al. (2017) found that interest as a motivational factor may “actively regulate students’ experiences during the pursuit of important goals to make them more interesting and thus more motivating” (p. 28). As interest develops, the aforementioned psychological constructs start to be deeply interconnected. In fact, to develop interest, students’ feelings, values, and prior knowledge are considered at the core (Renninger & Hidi, 2019). For example, Renninger et al. (2014) found that depending on the individual’s phase of interest, they would establish goals in a specific manner. Therefore, an important distinction may be made: students can experience high levels of motivation in an activity but lower levels of interest to reengage. For example, during initial phases of interest development, research
indicates that because of lack of knowledge and content value, individuals cannot engage in self-regulation and/or experience self-efficacy beliefs to plan specific goals (Renninger & Hidi, 2019). This distinction may clarify teacher’s strategy used when identifying a student that “doesn’t seem to be motivated.”

**Measuring interest development**

Students’ interests change and become varied over time (Rosenzweig et al., 2019). There are observable behaviors that reveal students’ interests such as choice and preference, intensity, persistence, and quality of engagement. There are also psychological systems such as affect and cognition (Linnenbrink-Garcia et al., 2008; Parker, 2020). As expertise develops, interest has been recognized as a vital motivational factor that ignites a persons’ disposition to improve their skills (Wigfield & Rosenzweig, 2016). For example, Renwick and McPherson (2002) conducted a qualitative case study that explored the effect of intrinsic interest in a particular musical piece chosen by the participants compared to a musical piece assigned by the teacher. By conducting interviews with students and parents and observing video tapes of participants’ practice sessions, researchers noted that participants’ behavior and persistence were higher when compared with the pieces assigned by the teacher. Also, participants approached the pieces in a more deliberate way and used a more effective practice strategy.

While every human being is neurologically able to develop any interest, measuring it becomes complicated because it assumes that individuals are aware of their interests (Renninger & Hidi, 2016), but this is not always the case. There are existing scales, such as the Linnenbrink-Garcia et al. (2011), that assesses situational interest and the Rotgan’s (2015) Individual Interest Questionnaire that assesses late phases of interest development. Renninger and Hidi (2016) offered some ideas on how to measure individuals’ interests through the observation of four
behavioral indicators: frequency, knowledge, willingness to engage, and independently engaging with the object of interest. However, to date research suggests that the only scale that measures all four phases of interest development in any domain is the Interest Development Scale by Boeder et al. (2021).

The Four-Phase Model of Interest Development

Hidi and Renninger (2006) developed “The Four-phase Interest Development Model” that describes four successive phases of interest development being experienced: (1) triggered-situational interest, (2) maintained-situational interest, (3) emerging-individual interest, and (4) well-developed-individual interest. In all four-phases both positive and negative affect are exhibited. Research on affective neuroscience show that both “affect and cognition are involved and coordinated in processing during each phase of interest development” (Renninger & Hidi, 2016, p. 121). This interaction between affect and cognition is fundamental between each phase of interest, as well, the way in which an individual will (1) put effort, (2) show self-efficacy beliefs, (3) plan goals and/or (4) self-regulate. It changes over time and could either develop, become dormant, or regresses to the immediately earlier phase (Renninger & Hidi, 2016).

Thoman et al. (2017) asserted that in this proposed model “interest begins as surface-level reactions to stimuli and becomes “interests” integrated and embedded within the person’s knowledge structures and their predispositions toward the world” (p. 29).

According to authors, interest development is separated between triggered- and maintained-situational interest (phase one and phase two) and emerging- and well-developed-individual interest (phase three and phase four). The main difference between the two is that individuals who are in the first two phases of interest depend on external triggers such as task personalization, group work, hands-on activities and/or novelty, and tend to not reengage over
time. Individuals who are in the following two phases of interest development, value the possibility of reengaging over time. Their interest is stable, content specific, and linked to intrinsic motivation (Hidi & Renninger, 2006; Tin, 2013). For example, Renninger et al. (2018) asserted that for an individual considered to be in the last phase of interest, educational situations should be challenging but not overwhelming because students may experience a decay of self-efficacy beliefs and a subsequent decay in motivation (Sansone et al., 2019). Both situational and individual interest phases can be cultivated over time.

According to Hidi and Renninger (2006) and Rennigner and Hidi (2016), the first phase of interest development (triggered-situational) refers to the cognitive and affective changes that temporally modify an individual’s psychological state when engaging in a content-specific activity. These temporally changes are triggered mostly by external factors. In educational contexts, some of the observable characteristics of a learner include (1) not being able to focus on the content for a long period of time, (2) needs external support to engage from teachers, peers and/or educational instruction, (3) experiences both positive and negative feelings, and (4) not being able to self-regulate. Some activities that favor situational interest development for learners are hands-on activities, curiosity facts, and novelty.

The second phase of interest development (maintained-situational interest) refers to the psychological state in which individuals are capable of focusing and persevering in content-specific activities that reoccurs over time. Similar to the triggered-situational interest, most of the changes are triggered by external factors. In this second-phase of interest development, individuals tend to (1) express willingness to reengage in the content that were previously triggered by, (2) start to develop knowledge and content’s value, (3) experience positive feelings, and (4) exhibit some degree of self-regulation behaviors.
The third phase of interest development (emerging-individual interest) is characterized by an individuals’ moderate inclination to continually seek reengagement with a specific content. In this phase individuals tend to (1) experience positive feelings, (2) store content knowledge and store content value, (3) seek to work but not exclusively with some degree of autonomy, and (4) exhibit a higher degree of self-regulation when engaging with the content.

In the fourth phase of interest development (well-developed individual interest), the individual has a relatively long-term tendency to reengage with a particular content. It shares similar characteristics with the third phase, but it differs on that individual tend to (1) have deeper stored content value and stored knowledge, (2) appreciate and seek feedback, (3) persevere through challenges, (4) overcome frustration to achieve previous established goals, and (5) likely self-regulate. See Table 2.1 and Table 2.2 for more learner behaviors associated with each phase of interest development.

Table 2.1. Learner’s behaviors: phases one and two

<table>
<thead>
<tr>
<th>Phase one: Triggered-situational</th>
<th>Phase two: Maintained-situational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual is not able to focus on the content for a long period of time</td>
<td>Individual can focus and persevere in content-specific activities that reoccurs over time</td>
</tr>
<tr>
<td>Individual necessitates external support and triggers to engage from teachers, peers and/or educational instruction</td>
<td>Individual necessitates external support and triggers to engage from teachers, peers, or educational instruction</td>
</tr>
<tr>
<td>Individual experiences both positive and negative feelings</td>
<td>Individual expresses willingness to reengage in the content that were previously triggered by</td>
</tr>
<tr>
<td>Individual is not able to self-regulate</td>
<td>Individual starts to develop knowledge and content’s value and experience positive feelings</td>
</tr>
<tr>
<td></td>
<td>Individual exhibits some degree of self-regulation behaviors</td>
</tr>
</tbody>
</table>
Table 2.2. Learner’s behaviors: phases three and four

<table>
<thead>
<tr>
<th>Phase three: Emerging-individual</th>
<th>Phase four: Well-developed-individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual has a moderate inclination to seek reengagement with a specific content over time</td>
<td>Individual has a relatively long-term tendency to reengage in a particular content over time</td>
</tr>
<tr>
<td>Individual tends to experience positive feelings, store content knowledge, and store content value</td>
<td>Individual tends to have a deeper stored content value and stored knowledge</td>
</tr>
<tr>
<td>Individual seeks to work but not exclusively with some degree of autonomy</td>
<td>Individual appreciates and seeks feedback</td>
</tr>
<tr>
<td>Individual exhibits a higher degree of self-regulation when engaging with the content</td>
<td>Individual perseveres through challenges</td>
</tr>
<tr>
<td></td>
<td>Individual overcomes frustration to achieve previous established goals</td>
</tr>
<tr>
<td></td>
<td>Individual is likely to self-regulate</td>
</tr>
</tbody>
</table>
Chapter 3. Method

This chapter is broken down into six sections: research approach and design, background preparation, participants and context, data collection strategies, data analysis, positionality statement, and validity and reliability. Each section offers a detailed description of the strategies and rationale employed for the current research.

Research approach and design

Yin (2018) described case studies as an opportunity that “allow you to focus in-depth on a case and to retain a holistic a real-world perspective” (p. 5). Thomas (2011) asserted that case studies are “especially good for getting a rich picture and gaining analytical insight from it” (p. 23). Single or multiple-case studies (Stake, 2006) are used to explore multiple bounded systems (i.e., participants’ context and musical background) over a specific period of time, and to illustrate different viewpoints (i.e., students, teachers, and parents) on the issue.

I employed a holistic multiple-case study research design which allowed me to develop an in-depth understanding of multiple cases to explore adolescents’ motivation to practice through the lens of interest development. Following Yin (2018), participants of each case were carefully selected to predict similar or contrasting results. Therefore, I used Boeder et al.’s Interest Development Scale (2021) to identified two [ages 13-16] students in the triggered-situational interest development phase, and two [ages 13-16] students in the maintained-situational phase of interest development. Firstly, I analyzed the surveys and identified four participants for each individual case study—detailed description in the background preparation section of this chapter. Then, I designed and analyzed each single-case study individually followed by a cross-case analysis between cases. Finally, I discuss research findings. Implications, limitations, and recommendations are included.
Background preparation

Participants and context

Following Institutional Review Board approval in January 2022 (See appendix A), 91 piano teachers in Louisiana, United States were encouraged to participate in this research study via email. A total of eight piano teachers recruited 29 participants [ages 13-16]. All participants (N=29) were members from eight different piano private studios in Louisiana, United States. Follow-ups via email and text messages clarified teachers’ questions. Consent forms were completed by the teachers as well (See appendix B). I used the World Health Organization adolescence’s definition to delimit participants’ age: “a transitional phase of growth and development between childhood and adulthood within the ages of 10 to 19 years old” (World Health Organization, 2021, adolescents’ health, para. 1).

Data collection

I contacted participants’ parents through email and attached three documents: the “Interest Development Scale” in the form of a generated Qualtrics link and both the parental consent forms and the child assent forms (See appendix C and D). I emphasized the privacy aspect of the research and that students could stop participating in the study at any given moment. Participants (N = 29) of whom 75.9% were female (n = 22) and 24.1% were male (n = 7) completed the Interest Development Scale (See appendix E) in February 2022. They reported an average of 7.28 years of having piano lessons (SD = 3.05).

Table 3.1. Participants’ ages

<table>
<thead>
<tr>
<th>Participants’ age</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>
The Interest Development Scale (IDS). The measurement instrument was shared via email by Dr. Jordan Boeder in January 2021. The Interest Development Scale (Boeder et al., 2021) comprised 20 seven-point Likert scale questions that required individuals to answer based on the level they agreed or disagreed with a given affirmation. The scale had five subscales: information seeking, motivation to reengage, persistence, self-regulation, and value. After participants completed the 20 Likert-type scale questions, a section with eight open-ended questions followed. In this section, participants were asked to explain their answers. Boeder et al. (2021) found the scale to have internal consistency reliability ($\alpha= .94$) and within each subscale (information seeking $= .92$; motivation to reengage $= .88$; persistence $= .78$; self-regulation $= .84$, and value $= .91$). The internal consistency reliability of the scale for this study was also adequate ($\alpha = .95$). For this research study, the numbers between one and seven were transformed into percentages to maximize the meaning to the participants (see table 3.2 for a description of the adjusted percentages).

Table 3.2. Adjusted percentages

<table>
<thead>
<tr>
<th>Original number</th>
<th>Adjusted percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-15%</td>
</tr>
<tr>
<td>2</td>
<td>15-30%</td>
</tr>
<tr>
<td>3</td>
<td>30-45%</td>
</tr>
<tr>
<td>4</td>
<td>45-60%</td>
</tr>
<tr>
<td>5</td>
<td>60-75%</td>
</tr>
<tr>
<td>6</td>
<td>75-90%</td>
</tr>
<tr>
<td>7</td>
<td>90% or more</td>
</tr>
</tbody>
</table>

Data analysis of the scale

Participants ($N=29$) completed the scale once during a four-week period. To conduct the statistical analysis, I followed Boeder et al.’s, (2021) procedure on assigning a “0” to participants identified in the triggered- and maintained-situational interest development phases, a “1” to participants identified in the emerging-individual interest development phase, and a “2” to
participants identified in the well-developed individual interest development phase. Statistical Package for the Social Sciences software (SPSS) was used to conduct all statistical analyses. After conducting the procedure, participants \((N=29)\) were placed in three different groups: triggered/maintained-situational \((n = 13)\), emergent-individual \((n = 14)\), and well-developed-individual \((n = 2)\).

Table 3.3. Interest Development Phase Placement

<table>
<thead>
<tr>
<th>Phase of interest development</th>
<th>(n)</th>
<th>Percentage of sample</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triggered/maintained-situational</td>
<td>13</td>
<td>44.8%</td>
<td>3.60</td>
<td>.82</td>
</tr>
<tr>
<td>Emergent-individual</td>
<td>14</td>
<td>48.3%</td>
<td>5.21</td>
<td>.40</td>
</tr>
<tr>
<td>Well-developed-individual</td>
<td>2</td>
<td>6.9%</td>
<td>6.20</td>
<td>.00</td>
</tr>
</tbody>
</table>

Figure 3.1. Schematic representation of background preparation

Participants and context

This multiple case study was conducted in four private piano studios in Louisiana, United States in Spring 2022. Out of the 13 participants placed in the triggered/maintained-situational interest development phase (refer to table 3.3), I identified two adolescent students (ages 13 to 16) as in the triggered-situational interest development phase (phase one), and two adolescent students (ages 13 to 16) as in the maintained-situational interest development phase (phase two)
to conduct the multiple-case study. Coupled with the score of the Interest Development Scale, I used criterion sampling to select rich cases that allowed me to achieve depth of understanding in the research phenomena (Patton, 2002). I considered participants’ age, years of playing, and ability to express experiences, thoughts, and feelings eloquently (Bernard, 2017). Therefore, when reading participants’ answers to the survey, I looked for those who were more likely to feel comfortable when discussing their musical experiences and showing their struggles with independent practice. I also identified key words in their answers that referred to a lack of motivation to engage in practicing (see table 3.3 for representative quotes from the chosen participants). Furthermore, I considered the Developmental Critical Periods proposed by Parker in her book “Adolescents in Music” (2019). These are: (1) active construction—beginning to approximately 7 years old, (2) emerging—8 to 12 years old, (3) developing—13-15 years old and (4) focusing—16-19 years old. For this research study, the chosen population was the one in the developing period (ages 13-15 years old), and the early focusing period (16-19 years old).

Minors are a vulnerable population. Therefore, I kept a clear and open line of communication with the parents and the teachers. It was my priority to make students feel comfortable during our interactions, and I warranted privacy and confidentiality during the entire research process. Approval from the Institutional Review Board (IRB) was acquired in January 2022. For purposes of the participants’ privacy and ethical considerations, I refer to students with the pseudonyms Kate, Caleb, Miranda, and Amanda. Regarding the teachers, I used the pseudonyms Elizabeth, Meredith, Anna, and Peyton. In Table 3.4, I describe participants’ variables such as age, years of playing, Interest Development Scale score, and representative quotes from the written portion.
Table 3.4. Participants matrix

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Years of playing</th>
<th>Interest development score</th>
<th>Interest development phase</th>
<th>Representative quotes</th>
</tr>
</thead>
</table>
| Kate        | 15  | 8                | 2.95                        | Triggered-situational     | “Piano is not my first priority”  
“I want to make my dad proud”  
“I am a procrastinator and I tell myself I will do it later”  
“I do not have a great interest in piano at this point” |
| Caleb       | Caleb | 6                | 3.5                         | Triggered-situational     | “I engage in piano because I don't do much outside of school and like to at least do something to keep busy”  
“I most times can't find the motivation to practice on my own time”  
“Every week I am trying to ignite a motivation to practice and set a goal to practice more” |
| Miranda     | 15  | 4                | 4.1                         | Maintained-situational    | “I enjoy music and learning new things”  
“Practice is important, but I would like to find more time to practice”  
“I put in effort because I enjoy learning the piano” |
| Amanda      | 13  | 7                | 4.9                         | Maintained-situational    | “Without piano practice you will never get better, it’s just hard to stay motivated”  
“As I learn new things, I am able to be more persistent in practicing”  
“Playing the piano helps me stay focused and helps me express myself” |

In Table 3.4, I describe teacher’s profiles including variables such as years of teaching, academic degree, years of teaching the student, and student interest development phase.
I collected data through eight different methods: (1) online questionnaires completed by teachers, parents, and students, (2) semi-structured interviews with students, parents, and teachers, (3) passive observations of students’ lessons, (4) video-recordings of students’ practice sessions, (5) video-recordings of students’ lessons, (6) students’ weekly text messages regarding their practice experience, (7) students’ practice journals, and (8) investigator memos (see appendices F, G, H, I, and J). I met individually with participants’ parents, and with teachers prior to data collection. I explained in detail the study, answered questions, and shared some of my personal and academic experience.

This research project was built upon expressed thoughts and manifested behaviors of the students. Since they were minors, the meeting with parents was crucial to both become familiar with the study and with me as a student/researcher from a large public university. I designed the online questionnaire to further understand students’ musical background, social background, and general interests from three different perspectives: personal, teacher, and parent. The written questionnaire also provided me with a deeper understanding of parents’ and teachers’ role, and it was used for data triangulation. The questionnaires were sent to every participant via Qualtrics, and they were completed over a period of two weeks prior to when I met them for the semi-structured interviews. I carefully analyzed the questionnaires before meeting with participants to follow up on participants’ expressed thoughts.
I conducted one semi-structured interview with each student, and one semi-structured interview with each teacher over a period of four weeks during Spring 2022. The semi-structured interviews were around 45-60 minutes. Participants were from four different regions within the state of Louisiana. Therefore, I conducted the semi-structured interviews over the Zoom Video-conference platform in prevention of Covid-19 spreading—except for one teacher who preferred an in-person interview. Also, during the process of data collection, I wanted my stance to be of complete observer (Merriam & Tisdell, 2016). It was my desire to not interrupt the regular lesson dynamics between the teacher and the student with my physical presence. Thus, I watched students’ videos during my personal time, and I was not present during participants’ piano lessons.

Interviews were recorded and securely saved in my personal password protected laptop. For the teacher who opted for the in-person semi-structured interview, I went to her studio and audio recorded it. The use of Zoom is proven to be an effective method to conduct research interviews (Archibald et al., 2019), and conducting interviews with a technology-mediated tool has many advantages. The cons such as lack of building participants’ rapport, potential lack of recognizing nonverbal expressions, or technical issues were discussed in advance with the participants (Ravitch & Carl, 2021).

Over the course of six weeks students recorded their weekly practice sessions with their personal devices. They also texted me with thoughts as they occurred during their practicing. I observed a total of 18 practice sessions (approximately 366 minutes of recording). Students also recorded their weekly lessons for six weeks. I watched a total of 24 lessons (approximately of 19.5 hours of recording). Teachers and students shared their videos in three different ways: (1) unlisted YouTube links, (2) iCloud links, or (3) keep them in personal devices. These options
were provided to ensure flexibility and ensure ease of participation. Only one teacher opted for saving the teaching videos in her personal device. Therefore, in July 2022, I went to her studio and collected the videos once she had recorded all lessons. For each participant, I kept a One Drive private folder. Friendly reminders to both teachers and students were sent during the study. Finally, I shared with students a different Qualtrics link for them to describe their practice sessions.

![Data collection process diagram]

Figure 3.2. Schematic representation of data collection process

Data analysis

The data analysis process consisted of first and second cycle coding (Saldaña, 2021). Initially, I organized all data (digital and written) into digital folders. Then, I transcribed teachers’ and students’ semi-structured interviews while taking notes in a separate document with perceptions, thoughts, and personal reflections about participants’ answers, behavioral reactions, and body language. Kvale (2018) stated, “transcribing the interviews from an oral to a written mode structures the interview conversations in a form amenable to closer analysis and is in itself an initial analysis” (p. 98). Therefore, when watching the video recordings, I kept close research questions, theoretical framework, and prepared guiding questions to focus the
observation process (Auercbah & Silversteing, 2003; Emerson et al., 2011). Similarly, I watched multiple times students’ practice sessions and lessons. I entered the process with an open mind, and I made myself conscious of potential assumptions by keeping a reflective journal with analytical memos.

I approached and analyzed each case study individually before creating a template for coding a multiple case study (Creswell & Poth, 2018). Therefore, I firstly conducted a within-case theme analysis. I read multiple times all written and digital materials to immerse myself into the data and generate pre codes (Layder, 1998). This material included: (1) transcripts, (2) personal reflections from written and digital data, (3) online questionnaires, (4) practice journals, and (5) text messages. Then, I created a table with four columns for each case: (1) data themselves; (2) space for preliminary code, notes, and jotting, (3) In Vivo codes (Charmaz, 2014; Corbin & Strauss, 2015; Glasser, 1978; Saldaña, 2021); and (4) final codes (Liamputtong & Ezzy, 2005). In Vivo Coding allowed participants’ voice to remain present and allowed me to have a deeper understanding of their thoughts (Saldaña, 2021). Furthermore, this data layout helped me to keep data organized for each case individually when moving on to second cycle coding (Saldaña, 2021). I revisited the data to begin the axial coding process on each case. Firstly, I used profiles (Seidman, 2006) to describe each participant. I used their voice as much as possible to convey their thoughts. When writing profiles, Seidman (2006) said,

One goal of the researcher in marking what is of interest in the interview transcripts is to reduce and then shape the material into a form in which it can be shared or displayed. Reducing the data is a first step in allowing the researchers to present their interview material and then to analyze and interpret it. It is one of the most difficult steps in the process because, inevitably, it means letting interview material go. I have used two basic ways to share interview data. First, I have developed profiles of individual participants and grouped them in categories that made sense. Second, I have marked individual passages, grouped these in categories, and then studied the categories for thematic connections within and among them. (102)
Then, I revisited each participant’s findings to conduct a cross case analysis that led me to build broader patterns and themes. Data was analyzed until data saturation was achieved.

**Positionally**

Conducting qualitative research requires reflecting at each stage of the research process on own’s positionality in relation to the research being studied (Ravitch & Carl, 2021). It also requires revealing researcher’s background to ensure trustworthiness. My background includes teaching in higher education and private music studios. This teaching experience increased my curiosity and thirst for knowledge to understand human motivation. Why? When I was teaching in the piano precollege program at the University of Costa Rica, I taught a wonderful group of adolescent piano students. When I started teaching them, I noticed immediately that they were the most committed students. They told me that piano was very important for them, but that they always struggled with finding the motivation to practice. I was able to see that they enjoyed the lesson time and that they wanted to improve their piano skills, but at the same time, I was able to see how truly difficult was for them to find the motivation practice. They promised me week after week that they would practice, but they did not. I wanted to respond to their needs. Therefore, I immersed myself in the topic of motivation and later in the topic of interest development. I learned from the literature that adolescence represents the most common age for attrition from music lessons. From my teenaged students I got the feeling that both external and internal factors were at play and that prevented them from practicing independently. In interest development literature, I found a potential way that could explain their enthusiasm about learning piano during the music lesson and simultaneously exhibit a lack of motivation to practice independently. I also learned that motivation influences students’ cognitive and
emotional function. Therefore, I understood that forcing individuals’ learning processes or interests was a highly ineffective approach when trying to motivate students to practice.

This self-searching process was present during the background preparation, data collection, and data analysis to avoid subjectivity. I maintained a journal in which I annotated thoughts and reflections regarding questions such as (1) What are my musical and personal assumptions, intentions or ideologies that are dominating my research decision-making process? (2) What are the why’s that I am not asking? (3) Do I have a research agenda? (4) What are the invisible things that I do that contradict my words? (5) What is the relevance of the content? and, (6) am I judging teachers’ work? I worked on being comfortable recognizing my privileges, strengths, and weaknesses. I worked on preventing myself from being a piano teacher, but instead a researcher in search of questions.

**Trustworthiness and rigor**

I established trustworthiness from multiple fronts: I read written data and watched the video recordings of independent practice sessions and music lessons multiple times, I systematically organized the data in the data analysis process (Lincoln & Guba, 1985; MacQueen et al., 2008), and I clarified my potential biases and assumptions by reflecting upon my positionality. Also, I invested myself in generating rich and thick descriptions of each individual case and then within cases, I had prolonged engagement with participants, and collected substantial materials to allow for data saturation (Creswell, 2018).

Finally, I used a methodological and investigator triangulation for this research study (Denzin & Lincoln, 2012; Lincoln & Guba, 1985). I combined multiple data sources to add depth to the issue, and to reaffirm or adjust interpretations. Finally, weekly meetings were held with my research advisor to discuss my data interpretations. Participant member checking was also
part of the process before concluding the research. I met virtually with the piano teachers to discuss findings from the study. I did not comment on specifics about each case study, but I addressed each finding in a holistic manner. Protocols for observation and document request were prepared to avoid bias and maintain the research focused (see appendix K and L).
Chapter 4. Profiles of Participants and Musical Background

Crafting individual profiles in qualitative research “allow us to present the participant in context, to clarify intentions, and to convey a sense of process and time” (Seidman, 2006, p. 115). To illustrate the participant musical experience, I have written narrative profiles of Kate, Caleb, Miranda, and Amanda¹. Kate and Caleb are music students who placed in phase one of the Four-Phase Model of Interest Development: triggered-situational. Usual learner behaviors exhibited in this phase include short attention span, lack of self-regulation behaviors, need for frequent learning triggers for a response, and need for external support from teachers and peers to engage. Miranda and Amanda are music students who placed in phase two of the Four-Phase Model of Interest Development: maintained-situational. While learner behaviors are similar in many ways to phase one, phase two has several key differences: students are eager to reengage in a previously triggered content, identify content’s value, experience mostly positive feelings, and exhibit some self-regulation behaviors.

Kate (Phase one)

Kate is a 16-year-old high school student from northeastern, Louisiana. She is an introverted teenager with a quiet voice and a pleasant presence. Kate enjoys hearing music all the time, but “mostly pop music because of its rhythm and lyrics.” Her favorite song is “Where’d All the Time Go” by Dr. Dog. She began studying piano in a partner lesson setup. However, after three years of duet playing, her parents switched her to private lessons in a private piano studio at about 40-minute drive from her hometown. Kate recently obtained her driver’s license; thus, now she drives to her weekly 30-minutes lesson. Previously, her mom drove Kate and her little brother who also takes piano lessons. When Kate and I met for our interview, I understood that

¹ Pseudonyms are used throughout to protect participants’ privacy and confidentially.
her preferred way of communication might not be verbal. Therefore, I allowed Kate to text me messages as an alternative way for communicating with me if needed. She agreed and texted me multiple times after our semi-structured interview. She shared thoughts as they occurred in her practice sessions.

Music is “my dad’s thing”

When determining reasons for Kate’s enrollment in piano, she acknowledges that it was “more of her dad’s idea.” She also said, “I am taking lessons because I want to make my dad proud, but also when I get older, I will be glad that I learned how to play an instrument that not many people can.” Kate’s dad is a middle school band director that in Kate’s words, “knows everything about music and has always just loved piano, so it always has clicked for him.” Kate’s happiest memory in piano involved playing at church for her mom’s birthday celebration. Kate and her dad secretly rehearsed for weeks the piece “Trust in You” by Lauren Daigle.” She said, “My mom was expecting my dad to play. It was nice to surprise her, and I knew that I did it.”

Independent practice

Kate practices with a weighted digital piano whereas the piano lesson is on an acoustic upright or a grand piano. She practices is a common family area, but it remained quiet during Kate’s video recordings. Kate recognizes that practicing is one of her main challenges and she attributes it to procrastination. She said, “I feel bad after the lesson because I know, I didn't practice, and I know I should have. But then I'm 'okay, maybe this week I will', but then I procrastinate, and I don't.” When I followed up about why she thinks she procrastinates piano practice, she said, “In everything that I do in school and piano and everything, I just put to the side and then I'll forget about it, and it never happens, I usually do random stuff like watching
my phone or everything else.” Kate mentioned that having a challenging repertoire motivated her to practice. However, she struggled with predicting failure beforehand. She said,

I feel like it is way more interesting if is a harder piece, maybe something that I have done before, but I have done it differently. However, at the same time I feel I’m not going to get this.

Kate shared eight practice sessions (an average of 15 minutes per session). Smaller sessions were 4 minutes, and the longest sessions were around 28 minutes. During the six weeks of the study, Kate practiced mostly Friedrich Burgmüller’s “Ballade” Op. 100, no. 15 and “Where’d All the Time Go” from Dr. Dog by rote. Usually, she plays through the “Ballade” around eight to nine times. When problematic passages are faced, Kate uses hands separated and repetition to fix the issues. If these strategies did not work, she played in a faster tempo and finished the practice session. She said,

I usually just replay it and keep playing it over. That's basically what I do every time. I usually try to keep playing it until I get it right at least 5 times. I sometimes practice once I’m done with everything else.

Additionally, Kate expressed general goals,

I usually practice when I get a chance and get myself to go practice. I usually try to keep playing it until I get it right at least 5 times. I sometimes practice once I’m done with everything else. I started my sessions on the problems in the piece first and I used metronome.

Although Kate has a neutral facial expression during the interview and lessons, the only time I saw clear facial reactions was when practicing. She exhibited frustration and confusion for a couple of times. She verbalized them by stopping the performance and saying “What?” These reactions happened mostly when experiencing coordination issues and changing of hand positions. Once the spring recital was announced in the lesson, Kate included two new practice strategies: singing right hand while playing left hand and slowing the tempo to fix rhythm and coordination. When I asked her about these new strategies, she said,
It did help me learn or understand what I was doing because like, it was so hard to do one thing with one hand and then do another in the hand. So, it was easier for me to just sing it and then play it after.

During practicing, I observed that Kate wanted to improve coordination issues in the first two measures of her piece. In order to do that, she figured that by playing faster, she would remediate it. I think that her reasoning was based on her recognition of tension in her hands. By playing faster, she improved her coordination but not in a consistent manner. Once frustration was experienced, she also pulled out her teacher’s practice checklist to guide what to do next.

**Performances and Lessons**

Kate describes herself as a shy person who does not experience enjoyment being the focus of attention in any setting either at school when reading or in music performing. She expressed,

> I like to just learn for myself. Every time that I would do recitals or even read for my class at school, I would just be like, me having to learn it and just having the nerves of oh, 'I have to do this', and the problem is that I have to do it and I am in front of people. It makes me feel very uncomfortable.

Also, when asking her about her least preferred piano memory, Kate mentioned having memory slips during a recital. She said, “I remember for a recital I had to memorize a piece and I messed up. I really knew the piece I was prepared, and I just like I totally forgot it.”

During her weekly lessons, Kate seems attentive but nervous. She is fidgeting, lip biting, or playing with her hair or moving legs when listening to explanations. It is more evident when the ideas of performing at the Spring recital is announced by her teacher. Usually, Kate is present, follows her teacher’s instructions, and has an automatic motor response. It is clear to me that Kate struggles with notation and rhythm. During their 30-minute lesson together, the teacher focuses mostly on the expressive side of music by telling her about personal emotions, creating stories, and discussing antagonistic movie characters. The teacher has a variety of verbal
explanations for a concept, and she engages Kate in discovery learning to correct wrong notes or rhythms. Several “Aha” moments are experienced during class. Kate laughs when discovering those mistakes.

During Kate’s 30-minutes lesson, her energetic teacher encouraged spoken interactions with Kate as a main approach to teach. However, because of Kate’s shyness, she mostly reacted by smiling, nodding, or agreeing with short sentences. Kate had a pleasant presence during the lessons and seemed attentive. During the six weeks of the study, they focused on improving artistry and expressiveness on the Burgmüller’s Ballad. They also picked a new pop song that was assigned to learn by rote. Kate was receptive to her teacher’s feedback and followed instructions. The only moments that appeared to make Kate uncomfortable were when her teacher asked reasons for the lack of weekly practice. Kate’s teacher was very clear about the required time for practicing and explained why it was vital to meet that time. Discovery learning and reflection questions were used to lead Kate in identifying wrong notes and rhythms.

When observing Kate’s lessons and reflecting over our interview interaction, I noticed that her main way of learning might not be verbal. However, most of the teaching strategies used involve asking her to verbally elaborate over questions such as “What do we need to write so you can remember what is coming in terms of hand position and dynamic? How fast can you play the song?” Usually, the teacher asks Kate to rephrase instructions and scarcely models concepts for the student. She works diligently on isolating trouble measures and highlighting dynamic markings. During one lesson, rote approach was used to introduce a new pop song. Kate’s described her preferred lesson a “When we're going over stuff that I needed a lot of work on, and she went through on what I needed to do instead of like given me new tips for practice at home.” Her least preferred lesson happens “When I don't practice and when it's showing and I'm just not
getting it all. Even though that are like when I know that I've gotten it and then like I just can't play it and it shows.”

**Psychological needs**

Kate and I had a short discussion about psychological needs: autonomy, competence, and belonging. Following our conversation, I asked about her thoughts regarding each need to which she responded, “I don’t think I have the necessary skills to learn piano. I always need help in all my pieces. I mean, I just can't learn it myself, honestly. I think that reading is the hardest part.” Kate’s lack of perceived competence might be reinforced by where her piano repertoire comes from. Her teacher expressed that, “Kate is on Book 3 from Faber and Faber Piano Literature, and the thing is that my other kids that are her age are playing Chopin, Debussy, so she's playing things that other seventh graders are doing.” When asked about autonomy, she expressed, “I didn’t ask for lessons; it was my parent’s idea.” She also said, “I feel independent when my teacher asks what I want to play, or like what I want to do about anything in my piece.” Kate appreciates being in control if “I know what I'm doing, then I'll want to be like in front. But then if I really don't, then I'd rather just be on the side and like, just follow.” When asked about belonging, Kate said,

> I mean, it's just like, when I talk with my family in my house, music just does not come up, and with my friends, it’s just that piano doesn't come up either because not really many of my friends like playing instruments. However, when I do talk with my friends, they understand and give me more confidence.

**Role of parents and teacher**

Kate feels supported by her parents and teacher. She said, “I feel supported because my mom even though she doesn’t play she still understands what I’m saying when I talk about how I feel in music. Also, my dad will help me if I do have questions.” Kate appreciates that although
she does not put in much practice or effort, her teacher is still happy to share practice “tips,” and ideas on how to improve her playing. Kate said,

Most of the tips that she gives me, it usually helps. I mean, any tips that she gives, it helps. I feel supported because she even though sometimes I don’t put forth effort she still supports, also I feel that she genuinely understands what I'm saying when I when I don't practice.

The teacher expressed having an open channel of communication with both parents, therefore they support her on exploring a variety of instructional strategies to motivate Kate to practice, but until this couple of months nothing had worked. She said,

It is very difficult to know what Kate knows and what she doesn’t know. I cannot see in their head, and she’s not going to tell me what she doesn’t know, so it is very frustrating. I didn't know what her other teacher taught her; you know? So, I didn’t know how the teacher approached a beginning piece. The kids that I've had, since they were little, I know what they're, I know how to explain things or what to say to get them to be at ease with trying. Also, she only has 30-minute lessons with me and it's hard to teach a 30-minute class, you know? It's not enough.

The teacher explored different repertoire, music genres, and practice sheets to motivate Kate to practice,

I tried everything! Writing things for her, having her writing things, explaining why is important to practice every day, trying different kinds of repertoire. I would say, 'bring me a list of songs that you like' and she doesn’t always come with pop songs, but I try to get her involved in it. Sometimes I'll play pieces for her. Sometimes I have her listen. Sometimes I'll play like three pieces, and I ask her to pick which one she'd want to work on.

However, she continued saying,

She never owned the music until this spring. Kate played for the first time in a recital, and it was beautiful because of her expressive playing and for the first time Kate enjoyed playing and was happy about it. She even opened-up to me about experiencing performance anxiety. I don’t know if it was because she was accountable to you and the study, so it made her put effort and completely changed her attitude about practicing. This was the first time that she owned a song. I’m impressed that having Kate doing this study, I think it kind of facilitated both learning process because it made her play well enough to play on recital. So, I want her to get involved in ensembles with other members of the studio teens to see if it will get her to realize that “wow, playing music can be fun. I don't think she's ever had fun!”
Table 4.1. Kate’s summary table

<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shy personality</td>
<td>Musical behaviors</td>
<td>Pop songs preference</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-described as procrastinator</td>
</tr>
<tr>
<td>Neutral facial expression</td>
<td></td>
<td>Dislike recitals and competitions</td>
</tr>
<tr>
<td>Fear of being the center of attention</td>
<td></td>
<td>Mostly playing throughs when practicing</td>
</tr>
<tr>
<td>Desire to “make dad proud”</td>
<td></td>
<td>Receptive to feedback</td>
</tr>
<tr>
<td>Verbal communication might not be her preferred</td>
<td></td>
<td>Weak aural, technical, and written theory skills</td>
</tr>
<tr>
<td>way of communication</td>
<td></td>
<td>Experience performance anxiety</td>
</tr>
<tr>
<td></td>
<td>Psychological needs</td>
<td>Autonomy: “I appreciate being in control if I know what I am doing”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Competence: “I don’t think I have the necessary skills”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belonging: “No many of my friends like playing instruments”</td>
</tr>
<tr>
<td></td>
<td>Self-regulation</td>
<td>Phase 1: Goals consist of number of repetitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase 2: Tools include hands separate and metronome. No reassess!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase 3: Problems-continued and same strategy chosen to address issues</td>
</tr>
<tr>
<td></td>
<td>Role of teacher</td>
<td>“Aha” moments are experienced during class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rote approach with non-classical repertoire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variety of verbal explanations are offered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focus on musical expressivity during lesson: movie characters, stories,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>imaginary</td>
</tr>
<tr>
<td></td>
<td>Role of parents</td>
<td>Parent’s idea to enroll her in piano</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents encourage Kate to practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No parental involvement in weekly practice</td>
</tr>
</tbody>
</table>
Caleb (Phase one)

Caleb is 14-year-old high school student from southern, Louisiana. He has an expressive face, extroverted personality, and many stories to share about his piano journey. Caleb enjoys math at school, and he is part of the basketball team. However, piano is what excites him the most. He said, “I was 9 when I started piano lessons and I had not considered any other instruments. I just wanted to get in piano.” Last year, his piano teacher retired, and Caleb’s parents moved him to a new private studio. During our time together, Caleb recalled multiple times his first piano teacher,

I loved my teacher’s energy and her enthusiasm with everybody. I liked how she worked with multiple students. Also, she had little ’get together,’ and we would just eat and play our songs. She was kind of a piano teacher and therapist, so I could talk to her about like, what's mostly going on in my life and what I have.

Music is social connections

Caleb recently found out that his upright piano was inherited from his great grandfather and since his mom also used to play piano, he feels connected to his family in a special way because of music. He said, “piano is special to me because I have a long line of family that did piano and is something I can connect with them. I hope to still be able to play piano maybe when I'm 30 or 40.” In his new studio, Caleb also enjoys connecting with his teacher on a personal level. He engages in telling her stories about his friends, family, and personal activities. He said, “During piano lessons, I enjoy talking about my week and telling my teacher what happened during the week. That makes me feel more engaged.” Finally, playing with friends and experiencing success is what makes Caleb enjoy music. He said,

My happiest piano memory was with my first piano teacher. I was playing a musical piece with a trio and after all the weeks of coming together and practicing we finally performed it and did really well. It was the feeling of success after all those months of practicing with all three of us, and that actually came together and did really well.
Caleb loves learning new pieces outside of the classical genre. He said, “I enjoy learning new pieces but not classical. I like the ability for me to play the song or play the notes and then being able to sing the lyrics in my head and connecting with them.” He confesses that if he does not like the songs, he will “avoid practicing at all costs and I would probably hide it somewhere.” His favorite song is “A Day in the Life” by Paul McCartney. He loves how the song turns a regular day into a good one and how the lyrics relate to the music. Caleb is all about social connections. He loves connection with the teacher, connection with his former peers, and connection of music with lyrics.

**Independent practice**

Multiple friendly reminders were sent to Caleb’s parents to submit video recordings from independent practice sessions. However, after six weeks of data collection, videos were not sent. When the teacher tried to determine reasons for the lack of video recordings, Caleb said, “I have not recorded anything because I feel very embarrassed.” Therefore, although, this portraiture lacks independent practice session observations, the remaining data collected helped me to elucidate findings. Also, during our interview, I asked Caleb about independent practice to which he said,

I don't really put much time into practicing. Every week, I'm like 'I should probably start practicing more to make it actually useful for my parents, and to get what they're paying for', but sometimes I just forget about it, or I don't want to [he laughs]. Sometimes it can be the piece. If I don't really enjoy a piece, it is hard to get to start practicing, but if I get a piece like “A Day in the Life” or another Beatles song, I usually tend to like practicing more because I enjoy playing it. Sometimes if I do not have homework or a big test, I can get practice in and try to motivate myself to get practice, during the weekend if I'm not tired from helping cut grass or then after dinner or if I'm trying to, like, avoid going to bed I might play another song. I would say I consistently practice the day before the lesson because honestly, I don't like to really practice that much!
Caleb self-reported an average of 41 minutes of practice per session. He also expressed that nobody forced him to practice. In his weekly lessons, problematic passages are practiced through mostly repetitions. Thus, during his independent practice sessions, Caleb may have used the same approach to fix problematic spots. He said,

I usually just play around with the pieces and see what sounded best, I just want to get the pieces done and just do the best I could. I usually sort of remember what my teacher said at the practice in my head. I also play the songs like five times and see if I get it. Then, I play the next song like three times.

I realized that Caleb consistently used the word “practice” for both independent practice sessions and lesson time. He believes that lesson time is also practice time, and not instructional time. When asked if he set goals for his practice sessions, he said, “I usually plan for pages. So, for example, I would say that want to finish the second page of the sonatina and then try to move on to the next piece.”

**Performances and lessons**

Caleb does not enjoy performing for studio recitals. He believes that when people are looking at him, he cannot play to the best of his capabilities and makes him feel embarrassed. He also feels that “not performing to my best would make what I have been working on all for nothing.” He continued saying,

In my other studio, we were having the “get together” with other students, and we were playing the pieces to each other, and it was my turn. I was near the end of the piece, but then I tripped up on last measure, and you could tell that I messed it up because it sounded very wrong. I felt a little embarrassed that day.

For most recitals, Caleb says that he gets very nervous. He describes experiencing physical manifestations of anxiety such as uncomfortable hands shaking, sweating, and having a rapid pulse which makes him feel very uncomfortable. During the last three weeks of data collection, his teacher encouraged him to play at the upcoming spring recital. However, nothing
was settled, and he continued expressing that he did not understand the purpose of playing for that recital. His teacher encouraged him to be honest about not wanting to play, but it seemed like his parents were expecting it to perform. When asked about this during our interview, and he finally said that he played because “my family wants me to do it.”

During the six weeks of the study, Caleb plays Paul McCartney’s “A Day in the Life” and Muzio Clementi’s Sonatina op. 36, no. 1 for his teacher. Usually, the weekly lesson is split in two segments of 30-min each. Each segment focuses on either the Clementi’s Sonatina or the McCartney’s “A Day in the Life” pop song. When observing his lessons, I noticed that Caleb becomes easily frustrated, especially when metronome is used. When followed up with him about it, he expressed,

The metronome has a set pace, and it is not going to change. So, while in my head I count, I will most likely change the rhythm. So, metronome just makes me a little frustrated. I just hear that little fast 'Tick Tick' going on and it just upset me!

Caleb’s teacher is aware of his frustration and the physical cues that Caleb exhibits. She addresses the issue by engaging with him in conversations about school and musical interpretation. She said,

I can see that he gets frustrated if he makes a mistake. He starts breathing heavier, so I usually stop him and tell him 'How’s school? How was your test? How did you feel? What is missing in that song? How can we make it fun? How can we make it interesting?' Sometimes I just stop I'm like, 'Well, I'm going to go to the bathroom'. So, he kind of takes a little break, too.

During our interview, Caleb mentioned that keeping a steady pulse was one of his biggest issues. He said, “most of the lessons, we focus on rhythm, because I'm not very good at keeping rhythm and remembering to count for the pieces.” To address these issues, his teacher usually engages Caleb in multiple repetitions of his music, introduces metronome use, or asks him to count aloud to address coordination issues. Usually, notation issues are present as well. His
teacher knows that Caleb does not appreciate counting aloud or using a metronome, but if she does it with him, he is more open to try it. To address notation issues, the teacher aims to foster autonomy. Therefore, she avoids give him answers. She wants that Caleb figures it out by himself. She expressed,

I really try not to just go and give him the answer, so I tell him don't look at the number, look at the note. I would like to see him more independent. I think that's my main goal. I still feel like we make progress, but there's not a huge difference from week to week.

Caleb had a weekly 60-minutes lesson. Usually, Caleb wanted to engage in personal conversations with his teacher. Therefore, lessons opened with conversations about school, family trips, family matters, and future goals. Generally, they were divided on two 30-minute segments dedicated to one piece each. Typically, during the first segment, they worked on Caleb’s piece of choice. Then, for the remaining 30-minutes, they worked on a second piece. Each segment consisted of several playing throughs with teacher suggestions on how to improve rhythm, pulse, and note accuracy. Caleb struggled during every repetition: pulse was not steady, tempo was extremely slow, and coordination was lacking. Once frustration was reached—mostly when counting aloud or metronome was being implemented, Caleb reacted negatively to the teacher’s feedback and challenged her with questioning strategies or importance of playing in a certain manner.

**Psychological needs**

Similar to Kate, Caleb and I discussed psychological needs: autonomy, competence, and belonging. When I asked him about autonomy, Caleb responded that having a say on how to fix issues or when choosing repertoire allowed him to experience control over his learning process. He asserted,

I had another teacher that just handed me pieces but eventually he started asking me, 'What do you want to play' or he made me choose from a set of pieces that I had to play
for Halloween or Christmas, but for the most part, he let me choose pieces that I liked to listen and that I was interested in playing. I also appreciate when my teacher let me pick fingerings or dynamics markings.

Regarding competence, Caleb knows that he has accomplished goals and his skills in piano has improved, but he insisted on sharing that he was not very good at keeping rhythm and remembering to count for the pieces. He said, “my teacher tells me things like, you did an amazing job or look how far we’ve got, but I still get lost.”

When asked him about belonging, he said,

When I was with my first piano teacher, I felt that it allowed me to have more friends because we would get together and perform duos and trios. I did not compare to them because I understood that they were doing more complex pieces than me and did not have the same problems that I faced in piano. I also got to know the people that went there and get a connection with them. Here they are just waiting on you to finish and you don't really know anything about them.

**Role of parents and teacher**

Caleb feels supported by his parents and teacher. Usually, his mom sits close when Caleb is practicing and claps when she identifies progress. She also records short videos of Caleb playing and then post them in a social network. Caleb said, “Sometimes when I play a song, my mom records it and then she posts it on Facebook saying that I'm serenading her.” He continued saying,

My parents always encourage me to practice, and my mom always tries to help when I have a question or can't understand something. She used to do piano, so when I'm at home, and my mom's working right behind me. Every time I finish a piece or get done with practice, she always like claps for me. And that, that kind of boosts my confidence a little. Or how excited they get once I play a piece well or finally get it down because sometimes, I get frustrated when I can't, or I'm not getting or connect the piece how it is supposed to be.

Regarding his teacher, Caleb said, “I feel supported by my teacher because she always helps me when I'm struggling and helps me to get better at the piece.” The teacher feels that her communication with Caleb’s parents could improve. She said,
Two weeks ago, Caleb and I talked about which piece he wanted to do for the recital. He said he wanted to do the sonatina. So, that we've been working on. But then, she emailed me saying that he told her that he doesn't know what to play that we haven't talked about it. So, she told me that she doesn't know what to do because before with his previous piano teacher, they knew the pieces months in advance. So, I told her like, 'oh, maybe he forgot because it was a couple of weeks ago that we discussed'. So, she was like, 'he neglected to tell me that, I'll get back to you.'

However, she works diligently on facing the weekly difficulties of teaching Caleb. She identified a lack of independent practice, rhythmic, reading, and aural skills, and inappropriate lesson length as the biggest issues to address with him. She said,

I don't think he practices much for a 60-minute weekly lesson. So, it's hard for us to move forward with the pieces. A good example is the sonatina. I know it's a new one, but we are on week four and he's still having trouble with the difference between the quarter notes and eighth notes. I think he works only in repetition and doesn't think through. So, I wonder if his former teachers would just stop him and tell him the answer for notes and rhythms instead of asking him what was the difference? Also, I don’t think he’s listening. For rhythmic issues, we have tried tapping, but he did not like that.

Table 4.2. Caleb’s summary table

<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chatty personality</td>
<td>Musical behaviors</td>
<td>Pop songs preference</td>
</tr>
<tr>
<td>Expressive face</td>
<td></td>
<td>Self-described as procrastinator in music</td>
</tr>
<tr>
<td>Music is about emotional</td>
<td></td>
<td>Become easily frustrated</td>
</tr>
<tr>
<td>and social connections</td>
<td></td>
<td>“Practice” and “lesson” mean the same repertoire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dislike recitals and competitions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-receptive to feedback, refuse to metronome use or count-aloud during lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weak aural, technical, and written theory skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experience performance anxiety</td>
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</tbody>
</table>

(table cont’d.)
<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Psychological needs</td>
<td>Autonomy: “I appreciate being in control of my music” * Competence: “Rhythm and reading is my main issue” * Belonging: “I don’t have friends in my new studio”</td>
</tr>
<tr>
<td></td>
<td>Self-regulation</td>
<td>No independent practice video-recordings because he felt embarrassed * Self-reported having small goals such as a defined number of repetitions to “get perfect the second page of the sonatina.”</td>
</tr>
<tr>
<td></td>
<td>Role of teacher</td>
<td>Foster independent thinking by “not giving him answers right away.” * Conversations about school and family issues are common during lessons * Multiple playing throughs as main teaching strategy to fix mistakes * Communication with parents might improve</td>
</tr>
<tr>
<td></td>
<td>Role of parents</td>
<td>Caleb’s idea to enroll in piano * Parents encourage Caleb to practice * Praise him when pieces are getting better * No parental involvement in weekly practice</td>
</tr>
</tbody>
</table>

**Miranda (Phase two)**

Miranda is a 15-year-old high school student from central Louisiana. Miranda has a quiet voice, seems private about her personal emotions, and has a neutral facial expression. Her family owns a farm where she enjoys gardening and cooking. She began lessons at the age of 10 “as a
trades from violin.” Her grandparents pay for her lessons and Miranda feels an indebtedness for the opportunity. Miranda values sharing her music with her family, “usually, it’s something that I’m going to perform and I want them to notice this special part or something, because I thought it was cool.”

**Music is enjoyable**

Besides piano, Miranda also plays trumpet at her high school’s band and piano at her church. Despite her expressed excitement for playing in band, Miranda believes that piano is far more important for her, and it also allows her to meet people at different stages of playing ability. She said,

Playing the piano is important to me because I love music. I also like the part where most music that you listen to always has the piano in it. And that's what I really wanted to do is like play music that people listen to. So, the trumpet is cool and fun, but all the music that you hear on the radio or stuff doesn't usually have trumpet and you have to go look for like the jazz music or something. I just really enjoy playing piano and I know that it's something that I want to be able to do.

Miranda is a hard worker; she prefers repertoire that does not resemble the typical “ear pleasing type” music and manages a broader musical vocabulary. Her teacher considers that being in band promotes her unique musical taste. She said,

Miranda has a particular preferred genre of music. She doesn't necessarily lean toward wanting to do classical music, though. I do give her a little bit of everything, but she tends to like jazz type stuff. She has her own taste, and that's what's kind of unique about her. She doesn't do what everybody else. The band that she's at the high school band program she's a part of they do phenomenal music. So, I think she is getting fed in terms of good quality sounds, which would help to promote that idea in her musical ear.

Miranda can harmonize lead sheets, transpose to closely related major keys, and pinpoint specific sections of her repertoire using specific musical terms. For example, when describing her music, she said, “I think some sections are interesting like the one with the arpeggiated
chords and the one with the slightly different chords each time as it progresses through the song.”

**Independent practice**

Miranda delivered eight independent practice video recordings (an average of 23 minutes per session). Smaller sessions were 6 minutes and longest sessions were 30 minutes. She decides to practice by herself, makes sure to plan for at least 4 sessions along the week, and enjoys when a piece is improving. She said,

> I enjoy when rhythm is better, coordination is settled, and I can play it smoother. I enjoy practicing, you know? Sometimes, it's not something I exactly look forward to, but usually I do like being able to sit down and work on something. I just enjoy playing the piano.

During the six weeks of the study, Miranda worked on “Sahara Sands” by Melody Bober, “Fuego de la Pasión” by Wynn-Anne Rossi, and two hymns: In Christ Alone and Lord, I Need You. They chose these hymns from a book that Miranda’s grandmother gave her as a birthday’s gift. Also, she was getting ready to participate in the LMTA Keyboard Olympics. She recognized the value of participating in this event because “it helped her to connect with the sound and to understand her music.”

Miranda seemed engaged when practicing, kept on task, and persevered through multiple distractions. Similar to Kate, Miranda practices with a weighted digital piano whereas the piano lesson is on a grand piano. When I asked her about the hustle and bustle of her practice sessions, she said that those constant distractions were difficult to overcome, but that she zoned out and

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2 Keyboard Olympics is a statewide competitive piano event that includes components such as keyboard musicianship, prepared lead sheets and repertoire. It also covers ear training, harmonization, transposition, and improvisation.
persevered over them. When I observed the video recordings, I was able to hear family talks, kitchen noises, cellphones, and TVs, or other family members practicing violin. Also, during some sessions she was expected to help with family chores. To illustrate, in some of the recordings, I was able to hear Miranda’s mom practicing violin with the little sister. Then, the family talks and the TV was so loud that the little girl said, “I can’t hear my violin because of you all. This is so distracting.” Miranda silently laughed about it and didn’t say anything back. In another video recording, the same little sister was singing her “ABC’s” in the background and asked Miranda for help because “she was confused about what she wrote at school.” Miranda sent her to think harder and immediately kept practicing.

Usually, her sessions begin with five-finger patterns exercises. She does it for a minute and then play chords and dominants of major keys. Her practice strategies are limited to repetitions, hands separate, blocking chords, and some isolated work. The chosen tempo is always the same, with multiple stoppings at the end of every measure. I observed that Miranda struggle with coordination, lack of aural skills, and technical ease when playing. It is evident that her performance apparatus is not being used in benefit of tone quality. Also, it is clear the accumulation of tension when Miranda is performing. When I met with her, she never discussed experiencing physical discomfort when playing. She referred to rhythm as the hardest part of playing piano. She said,

I like to listen to the music to know how it is supposed to sound because the hardest part for me is rhythm. If it's a new song that I don't know the rhythm, I wonder 'what is it supposed to sound? What's the rhythm? And how does it everything fit together!' Also, putting hands together is hard.

Also, Miranda mentioned planning for goals during her sessions and recognized that most of the time these are vague, but it helps her to do better in lessons,
Usually, it might be like just a vague idea. For example, something like 'I want to be able to play this section better'. But sometimes it is like a certain phrase or something that I want to make sure I get right especially such as: 'I needed to work on measures 9-16 in Fuego de la Pasión and measures 18-27 on Sahara Sands.'

She continued saying, “sometimes I change my mind and just play through pieces, play with her little sister or keep learning by rote the Pink Panther’s theme.” Miranda also plans for Summer because she does not like to keep the same pieces for a long time, “I don’t enjoy having the same couple of songs during Summer. So, I’ll get a big stack of books before summer. Then, I'll pick out which ones I want to play.”

Miranda appreciates the challenge of learning piano and mentioned that having a deadline motivates her to practice. Furthermore, she recognizes the value of being able to play and knows that if she wants to get better, she needs to practice. She said,

I'm always excited to get something new to learn, but if it is something challenging. I always want to work for and get it right. It should be difficult enough to makes it interesting. And the final product, you know, there's going to be something beautiful.

I noticed that she does not get easily frustrated, but once she gets overwhelmed because of the noise of the lack of knowing how to fix an issue, she stops her targeted practicing and engages in multiple repetitions of music. If the noise got very loud, she adjusted the keyboard’s volume, but on some occasions, she ended the video recordings abruptly.

**Performances and lessons**

Miranda is not particularly cheerful about playing at the end of the year recital. She describes experiencing anxiety and describes one occasion in which she forgot her music. In general, Miranda prefers to hear other people playing. She said,

I enjoy listening to everyone else's pieces, but I don't really like performing all that much. I do think it's fun some of the time, but mostly I like to hear what everyone else is playing. I do enjoy them, but I do get really nervous about them, like a lot
Simultaneously, she feels that recitals give her something to “to look for, like a challenge that I have to get it done.” She recognizes that having recitals “makes it easier to get everything learned.” She continued saying,

> Having recitals and competitions give me something to look for, like a challenge that I have to get it done. That makes it easier to get everything learned. It gives me a deadline to work for. I get very nervous, but I remind myself that 'Yeah, I know I can I do this. I know what I'm doing.'

Lesson time is generally divided between harmonization exercises to perform at Keyboard Olympics, and at least two pieces of her repertoire. For Keyboard Olympics, Miranda prepares lead sheets (with the given chords) and works on harmonizing melodies (choosing her own appropriate chords) to transpose to closely related keys. Miranda and her teacher seem comfortable with each other and getting to the end of the class, they discuss practicing, family activities, and school.

Most of the lesson’s time involves Miranda playing through her music. Sometimes to assess performance, her teacher inquires her, “How did you feel about this progress? What do you think slows you down? Were the spots practice being helpful?” to what Miranda replies, “I feel it could’ve been better.” If Miranda shares that she did not practice much, her teacher does not judge her and says, “You do as much as you can do.” When Miranda is facing difficult spots, they work mostly on blocking chords, and hands separated to alleviate the issues.

**Psychological needs**

Miranda and I discussed psychological needs: autonomy, competence, and belonging. When asked about autonomy, Miranda feels that she has a say on what she wants to play and how she wants to do it. She feels that she is part of the decision-making process when it comes to repertoire selection. She said,
Being able to choose what piece I do makes me feel like I really have a say in it. A lot of times she'll ask me like, “What do you think about this?” Or “what about this?” So, it’s not like I’m just getting stuff that I was told to learn it. I also can change my mind and it is OK!

Regarding competence, Miranda considers that she has become more confident over time regarding her piano skills. She does not know if she wants to be a professional musician, but she is open to the possibility. She also considers that she can find a song and study it by herself. She said, “If I have a song stuck in my head or something, I know I can go and look it up, I’m sure I’ll be able to play through and figure it out without my teacher’s help.” When asked her about belonging, she said,

I think my teacher does a pretty good job because we have a piano party, but also, we had one, for Christmas and Halloween. Also, over the summer, she did like mini camps. So, like, there is a music camp for classical music. And there's one that we combined art and music. It's like, we painted pictures and stuff, but talk about how the music is related with how certain composers used art to write their music and stuff like that. So, we just did that, and it was like she introduced me to more people who she was teaching. She introduced to some people that I hadn't met before. That’s where I realized that some of them were in my band that I didn't know they played piano, and we both study with the same person. So, I enjoy being on her studio and look forward for each class!

**Role of parents and teacher**

Miranda portrays her parents as supportive and encouraging. She considers her teacher as a patient and helpful person. She said,

I really enjoy my lessons, and I don’t know if I have just one that is my favorite. If I am having trouble in one part, my teacher will help me. She will play the left hand, and I will play the right hand or vice versa. If it is a relatively new song, sometimes she will just play through it for me. When I get to a spot where I keep messing up, she's always really patient and said, 'it's okay to try again.' And she'll show me something that might help me get it better.

Miranda’s teacher strongly believes that if she could get Miranda to recognize that the piano skills are something that she will use in the future, Miranda will keep connecting with piano. Therefore, hymn-like playing and functional piano skills for church are a primary goal for her. She said,
I want something that's going to sound good, something that is going to help her improve her reading and something that will have connectivity to the other things that she's doing outside of the lesson time.

Miranda’s teacher also wants to make sure that Miranda feels cared for and part of the community. Miranda’s teacher is aware of the reading issues faced by Miranda. Therefore, she works purposively in advancing her skills and connecting them with one of Miranda’s interests: playing at church. She said,

I do believe that her desire to play the things that sound a certain way are limited by her reading level. So, I tried to get her to do reading level material as part of her goals, so that her reading can improve. I’ve known that she will probably be involved in music at her church as an adult. So, I have tried to get her to be more advance on her reading and fluidity with hymn playing, but at the church that she attends here it’s a lot more chord based functional piano. So, I try to balance between skills and functional things because I think that's what keeps her connected if this is something I'm going to use.

Finally. Miranda’s teacher recognizes that the household situation does not benefit a concentrated practice session. Therefore, her focus during lessons is to do “whatever is needed to move her along in the process.” She commented that the communication with the family is good, but that she wishes they support Miranda more. She said,

I think she makes the best of her situation in her household because of her practice space. It's loud and people do what they want to do. So, like, the last week, she said, 'I was trying to practice piano when my little sister was trying to play the violin.' They live in a very small house. So, like for her to have that concentrated space, and lack of distraction, it’s almost impossible. I don't know that that really happens that much for her. She just does the best that she can, and sometimes the repetition of us going over three or four weeks in a lesson, sometimes is what moves her along. Also, they have a family farm in another town. So, she has a piano there, but it's not in great shape!
Table 4.3. Miranda’s summary table

<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>Perseverant personality</td>
<td>Musical behaviors</td>
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<tr>
<td>Music is enjoyable</td>
<td></td>
<td>Enjoy practicing</td>
</tr>
<tr>
<td>Neutral face expression</td>
<td></td>
<td>Dislike recitals, but recognize the value of them</td>
</tr>
<tr>
<td>Involved in Keyboard Olympics</td>
<td></td>
<td>Expressed having “vague” goals when practicing</td>
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<tr>
<td></td>
<td></td>
<td>Receptive to feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intermediate aural and written theory skills</td>
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<td></td>
<td></td>
<td>Weak technical skills</td>
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<td>Experience performance anxiety</td>
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<tr>
<td>Psychological needs</td>
<td></td>
<td>Autonomy: “I feel I have a say in my music”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Competence: “I have become more confident with my skills overtime, but if I want to get better, I have to practice”</td>
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<tr>
<td></td>
<td></td>
<td>Belonging: “I enjoy being on my teacher’s studio and look forward for each class”</td>
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<tr>
<td>Self-regulation</td>
<td></td>
<td>Phase 1: Goals consist of number of repetitions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phase 2: Tools include hands separate, blocking chords, and isolation. No reassess!</td>
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<tr>
<td></td>
<td></td>
<td>Phase 3: Problems-continued and same strategy chosen to address issues</td>
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<tr>
<td>Role of teacher</td>
<td></td>
<td>Wants Miranda to feel as a musician</td>
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<td></td>
<td></td>
<td>Multiple playing throughs during lessons</td>
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<td></td>
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<td>Few demonstrations at the piano</td>
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<td></td>
<td></td>
<td>Teacher “wishes more support” from parents to meet Miranda’s goals</td>
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<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
</table>
|         | Role of parents | Parent’s idea to enroll in piano  
|         |         | Parents encourage Miranda to practice  
|         |         | No parental involvement in weekly practice |

**Amanda (Phase two)**

Amanda is a 13-year-old middle school student from South Louisiana. She is a fast learner, very expressive, and lively personality. During the interview, she kept a big smile all the time, seemed open to sharing experiences in piano, and was always responsive. Amanda used to take violin lessons, but currently she only takes voice lessons in addition to piano. When asked Amanda reasons for playing piano, she said,

I started playing piano when I was 5 years old, my parents and me both chose because my sister and my mom played so I wanted to try it too. I didn’t really consider another instrument because I love the idea of singing and playing the piano.

She continued saying,

I feel like piano is a family thing, it shows the bond within our family, but it also is a great way just to express feelings because I can always play different things when I’m feeling sad, mad, or just happy. It’s so special because there are trillions of things you can do on the piano, many different songs, pieces, and ways of playing.

Amanda is very active at her church. Therefore, her piano teacher decided to enroll her in Keyboard Olympics. Also, Amanda participated in LMTA Rally³ where she achieved excellent marks in every section: performance, sight-reading, and written theory.

**Music is self-expression**

As for Amanda’s musical experiences, it is clear to me that she enjoys playing piano and music in general. When she is performing, I perceive that she is hearing the music in a holistic

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³ Rally is a statewide competitive piano event that includes technique, repertoire performance, sight reading and theory.
way. I think she gets emotional pleasure from it. During our interview, Amanda shared that she loves Olivia Rodrigo’s music because of “the feeling that goes with it, the dynamics, and kind of just expressing yourself through it.” She also shared that, playing music from movies, classical music in lessons, and songs from the radio with the chords, “is a lot of fun.” She said,

I also like playing the classical music and in lessons and stuff. And songs just like on the radio with the chords. I also enjoy playing them and sing to them to on the piano. I love Olivia Rodrigo! I mean, she's very cool. I also love the Harry Potter movie, so I like playing the music to that, too. When I have the piece totally finished and I can play it through, that's when I feel most engaged because I can play it and experiment with how it would sound with different dynamics or added phrasing that makes it express me. Independent practice

Amanda shared six practice sessions (an average of 25 minutes per session). Smaller sessions were 13 minutes, and the longest sessions were around 36 minutes. Her practice space is very quiet, and her upright piano is in great shape. She decides to practice by herself and recognizes that “it is hard to practice unless there are pressing deadlines.” When asked why it was “hard” to practice, she said,

A lot of times I do have a lot of schoolwork and I'm just like overloading and I'm like 'oh I cannot even do anything tonight.' Sometimes, I don't really feel like practicing, and I just kind of push my mind away even though I know I really should, and I know it's good. Then other days, I'll just be like, 'I'm gonna practice today I got it' and I ended up doing it. Mostly, it's just like, I don't feel like I'm up for it sometimes because I've looked at the music, and then I think back to all the times where I'm frustrated over something and then I just can't do it. So, I'm just like, 'you know, I just don't really want to go through that again.'

During the six weeks of the study, Amanda focused on perfecting her repertoire for the LMTA Rally competition. She prepared Stephen Heller’s Avalanche op. 45, no. 2, Betty Enoch’s Princess etude, and Friedrich Kuhlau’s Allegro Burlesco op. 88, no. 3. When asked about why those pieces, Amanda said,

My teacher goes and picks out a couple of pieces and makes me choose some of them. So, we'll choose a couple just to play for Rally, and then maybe we'll play the other one later. I also choose other pieces that are just for fun!
During her practice sessions, Amanda covers technique—scales, arpeggios, inversions, and chord progressions for around 5 minutes, then sight-reading for another 3-4 minutes, and finally she engages in repetitions of her repertoire. Most of the time she practices without the music score. She does not look for her music unless she fails to recall by memory on several try outs. In her independent sessions, Amanda tends to keep same tempo and same approach—multiple repetitions of isolated measures, focus on the melody line and balance, and metronome when practicing. When I asked about practice strategies, she mentioned that her teacher usually explains how to practice, but sometimes “I get bored.”

She also said,

My teacher talks to me a lot about taking tiny sections in the piece and just practicing them, maybe slowly and then getting faster, maybe counting them, just really where I'm messing them up and kind of basing that from what to do about it.

She continued saying, “usually, when I sit down to practice, I practice the things I mess up most. Then I go through the whole piece.”

By week 5 of the study, Rally was approaching. Therefore, her teacher recommended that she work on the repertoire hands separated and with blocked chords to reinforce her memory—during the previous lesson, Amanda had several memory slips. After a few minutes of rehearsing in that way, I noticed that Amanda got confused, and stopped doing the work. She started with the repetitions and ended the session. I think that Amanda’s reading skills are not as strong as her technique. Therefore, she gets confused. Also, it is clear to me that she needs to look at her hands to play the music and she relies mostly on her muscle memory. Amanda has a quite good technique, artistry, and above average understanding of the music.

Similar to Caleb and Miranda, Amanda’s goals for practice sessions consist of deciding how long and when she will practice during the day. Then, sometimes, she will set up short-term
goals which consists of deciding what she has to do with the challenging sections and how she will fix them. She noted that, practicing for little increments throughout the day helped her to practice effectively. She said,

I do like practicing for little increments. I've kind of learned that little bitty increments all throughout the day helped me more than just one big sitting because I don't focus, and then I ended up practicing the same thing over and over again, and then I end up messing up more than I started with.

I noticed that Amanda gets easily frustrated when learning new music. She gets frustrated when practicing scales and sight-reading. Usually, she tries the exercises twice, and if the issue is not fixed, she moves on to another exercise. When I observed her practice sessions, I noticed that she verbalizes “Oh, this is so hard” a couple of times. Then, she continues playing the exercises/repertory with a faster tempo, or abruptly moved on to another piece. I observed that when looking more tired than usual, she gets frustrated faster. I followed up with Amanda during our interview about frustration. She said, “when I hit a trouble spot it’s really hard for me to practice it right and fix it so I can move on, since it takes repetition and honestly it gets boring.”

Performances and lessons

Amanda identifies that performances will benefit her professional future. She considers that participating is “a good practice for in the future with college auditions and job interviews and things like that.” However, she also recognizes that competing is a source of extreme anxiety for her. She said,

Recitals or competitions do make me scared and I tend to practice a little more when they’re right around the corner. I just get extremely nervous every single time I have to play for a competition or recital. Partly because I don’t want to disappoint anyone like my family or my teacher, because I messed up. Usually, my hands are feeling all tight and I get nervous and forget the piece.

Competing affects Amanda emotionally and physically. She confessed that if it was up to her, she would prefer not to do it, but she also appreciates that her teacher puts her at ease most
of the time. She said, “my teacher always makes things seem not so serious, instead of totally thinking about winning and getting extra nervous, I love that she asks me to play for me and to make a joyful experience for the judges.” Recently, she participated in a regional competition where she was awarded an honorable mention. During the research study, she also participated in Rally where she got the highest grades in her level. Amanda describes herself as a nervous performer. She considers that because out of nerves, she starts to overthink her music and then she starts to hesitate when performing. Amanda said,

When I was little, I honestly thought 'oh my gosh, I hate this. There's nothing good about this. I don't know why people would ever think to compete'. I thought I was nervous all the time. I thought I would mess up and nobody would like me. Rally gives me anxiety! I would try and kind of think about it all day and I would get not focused and think about 'oh, no, what if I mess up? I haven't prepared for this enough. I should have probably put in the practice times even more, and I should have done this, and I should have done that.' Usually, the night of the day of the performance, I wake up, and I practice, and I practice. That's usually when I just start overloading and I start forgetting things. So, I'll play through and then I'll totally forget a section and then I'll get extremely nervous thinking, 'Oh, my gosh, I forgot half the piece overnight. ' I mean in my house and in the lessons, I play good in my house, but then when I just show up for competition it's like 'oh no, no. '

Observation of her practice sessions illustrated even more Amanda’s struggle. Right before the LMTA Rally competition, Amanda attempted to do a run through of her program in one of her independent practice sessions. During that session, she hesitated every other measure which led her to stop and put her hands over her face for a few seconds. Then, she tried again and pushed through the short session. I was able to see her thinking while playing. I think that her muscle memory completely abandoned her that day. It took her about three attempts to play the whole first piece. Then, she played the second and third pieces of her repertory. During her performance, she did not get evidently desperate, but I can see that she is disappointed. Her muscle memory abandoned her in that session! In our interview, I asked her about that session, and she said, “sometimes very hard pieces assigned to me scare me, if they go really fast paced
and the fingers are at work, then I get stressed about performing them, thinking that I will completely fall apart and mess up.” She does have flexibility and her fingers move well.

During the weekly 60-minute lessons, Amanda enjoys working along with her teacher. There is a lot of discovery learning and Amanda’s teacher makes sure that technique remains healthy. The teacher addresses all the required physical elements that makes a huge difference in Amanda’s performance outcomes and tone quality. Also, they work on trying to have something to say with the music and the teacher carefully analyzes and demonstrates musical gestures such as arm motions to allow musical expression. Finally, they work diligently on her scales, arpeggios, sight reading and written/aural skills. Amanda’s teacher encourages her when performing, works meticulously on how to practice her pieces, and tries to instill a stronger level of confidence. Her teacher never experiences the need to remind her to practice because Amanda always attends reasonably prepared. I observed that during lessons, they both laugh and enjoy each other’s company. There is also obvious mutual respect, empathy, and kindness.

After the LMTA Rally, both allowed plenty of time to reflect on judges’ comments during class. For the first time, Amanda opened-up to her teacher and said, “I think my problem with memory slips is that I question myself a lot.” Her teacher said back, “It is OK! We will work on that.” Amanda’s teacher suspects also that Amanda “does not practice as well as she can, so she seems to know what is going on, but she is not that confident with the music.”

**Psychological needs**

Amanda and I discussed psychological needs: autonomy, competence, and belonging. When asked her about autonomy, Amanda noted that it comes mostly from having the freedom to discuss dynamics, phrasing, ritardando, crescendos, decrescendos. She said,

In Princess etude since it was all the same dynamic and I don't know if that was just because it was made a while ago, but the whole first page was just the same dynamic. So,
we decided to just add some phrasing to make it sound better. We did it together! There was one section where I was totally hitting the piano and I just wanted to get all out. So, she told me, 'Wow, we need to work on that a little bit.' So, it totally changed the mood of the piece instead of going very angry, it made it all smoothed out. We did a story around Shrek and Fionna to make it fun!

When asked about competence, she circled back to consistent practice and how it gave her the certainty that people will not think badly about her

When I am consistently practicing. That makes me feel good about myself. And like, 'Oh, I've put in the effort. I know I did good.' So, I shouldn't worry about not being prepared or anything. And if people are, like, surprised by my playing, and they like what they hear, then I'm just like, “Oh, I'm not that bad.”

Simultaneously, when receiving new pieces of repertoire, she doubts her skills and predicts failure which make it difficult for her to find the motivation to practice. She said,

I usually when I first see a piece, I'm just like, 'Okay, I'm going to master this piece, and I'm going to play it.' Sometimes I do get distracted. And I end up doing other things other than that. Maybe it's just because I've had the idea that since I'll never be able to master this, I might as well do something that I enjoy. It's like I know I can play better than this instead of focusing on that. So, I play other things!

When asked about her peers outside of music she mentioned how they were a solid support system. However, she mentioned that she is glad that she does not have friends in music because she would see them “as competition.” She said,

Everyone supports me after a recital if I won saying I did amazing and cheering me on. If I didn’t do great, they still make me feel happy and supported, but I don't really have any piano friends. Because I mean, I feel like if I have a piano friend, that would mean competition all the time. And I'd be like, 'Oh, I'm so much better than you or she's so much better than me or I can't ever be as good as her and stuff like that.' But they usually just, you know, encouraged me and then I'll tell them about a week before the performance, 'Hey, I have a performance. Wish me luck.' And then I feel happy when they remember. And they text me and ask me 'Did you do good today?'

Role of parents and teacher

Amanda feels supported by her parents and her teacher. She recognizes that, “everyone supports me, especially after a recital if I won, they say I did amazing and cheer me on, and if I
didn’t do great, they still make me feel happy and supported.” She also enjoys that in every lesson, her teacher helps her to figure it out difficult spots and provide her useful practice. She said,

Every lesson, I enjoy practice counting because that helps me a lot. Also, when we're having trouble sections, and I'm just so frustrated, because I'm not getting it right my teacher tells me how to fix it, and then I'm just like, 'Oh, I need to listen to this so I will figure this out and improve.'

Amanda’s teacher is convinced that family involvement and participation are at the core of Amanda’s success in piano. She is aware that Amanda becomes easily frustrated. She said,

Amanda gets frustrated very easily because she is smart, and she thinks she needs to have it right since the first try. I need to constantly remind her that piano is difficult for everyone, and that allowing us to do it several times is key to master music. I know she puts the time and the effort, but I also wonder if she’s always following my advice or practicing in the suggested way.

She is also aware that Amanda deals with performance anxiety, and she is working on finding an effective way to address it because “Amanda loves music, and I will not take the joy out of it.”

She continued saying, “I have to be careful because I know she can do it, but I need to make the steps more incremental, and just let them develop over a longer period of time.” Some of the ideas that she is exploring include writing things down to involve more physical senses and making sure Amanda’s practice routine covers shorter and longer pieces some of them for performance, and some of them to play just for fun.

Amanda’s teacher’s larger goal is to find ways that will help her become proficient enough while she is in lessons that as adult no longer in lessons, she can play the piano for enjoyment. To achieve it, she is planning of getting her sight-reading skills stronger and provide her with plenty lead time. She said,

If a student has not become proficient with chord structures quickly, then a piece full of chords is difficult to process and the more difficult a piece is to process the more likely
they are to lose interest. So, my next goal is to really go after sightreading for the next few months and give her pieces she can learn in a few weeks.

Regarding repertoire selection, Amanda’s teacher carefully considers repertoire. She said,

If I try to assign her a piece that looks too difficult for her, she gets a bit overwhelmed. I have recently realized this is probably due as to her sight-reading skills not being as strong as I thought they were. So, it takes her a lot of energy to figure out complicated pieces. So, I always want something with scales or chromatic scales going on. I also look for at least one piece that is slow and melodic so that she can work on a singing line. For where she is at, I look for pieces that will develop good pedaling, the ability to do two different types of playing in one hand—like in a Schubert piece holding the top melody notes while the lower notes as moving. I look for pieces that will help develop faster technique but won’t cause overdo stress. I typically do not look for music that has lots of big chords like in Schubert Important Event.

Table 4.4. Amanda’s summary table

<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive and well-spoken Music is self-expression</td>
<td>Musical behaviors</td>
<td>Love a varied repertoire</td>
</tr>
<tr>
<td>Involved in Rally and Keyboard Olympics Experience performance anxiety</td>
<td></td>
<td>Dislike recitals and competitions, but recognize value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Goals consists of how long and when to practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receptive to feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manage a broader musical vocabulary, and practice strategies toolbox</td>
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<tr>
<td></td>
<td></td>
<td>Weak sight-reading skills</td>
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<tr>
<td></td>
<td></td>
<td>Intermediate aural/written theory skills</td>
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<tr>
<td></td>
<td></td>
<td>Strong technical skills</td>
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<tr>
<td></td>
<td></td>
<td>Relies on muscle memory</td>
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<tr>
<td></td>
<td>Psychological needs</td>
<td>Autonomy: “I enjoy choosing my music and dynamics”</td>
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<tr>
<td></td>
<td></td>
<td>Competence: “I’ve had the idea that since I’ll never be able to master this, I might as well play something that I enjoy”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belonging: “Piano friends would mean competition.”</td>
</tr>
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</table>

(table cont’d.)
<table>
<thead>
<tr>
<th>Profile</th>
<th>Category</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-regulation</td>
<td>Phase 1: Goals consist of number of repetitions. Phase 2: Tools include hands separate, tapping, counting aloud, metronome, and isolation. Reassess might happen, but the same approach is used Phase 3: Problems-continued and same strategy is chosen to address issues</td>
<td></td>
</tr>
<tr>
<td>Role of teacher</td>
<td>Abundant discovery learning in lessons Covered sight-reading, aural skills, written theory, technique (scales and arpeggios), and repertoire on each class Focus on physical gestures, expression (detailed work on pedal, articulation, phrasing, dynamics), and practice strategies Strong communication with parents Amanda values her teacher “put her at easy” with nervousness Careful consideration of repertoire</td>
<td></td>
</tr>
<tr>
<td>Role of parents</td>
<td>Parents supervise practicing Parents provide a quiet space and good instrument to practice Parents expressed the value of investing on her daughter’s music education</td>
<td></td>
</tr>
</tbody>
</table>

**Concluding thoughts**

I have written narrative profiles of Kate, Caleb, Miranda, and Amanda to show how each student fits within each phase of the Four-Phase Interest Development. Kate and Caleb, who
placed in phase one, exhibited short attention spans, lack of self-regulation behaviors, need for frequent teacher’s guidance for a response, and experienced both negative and positive feelings about piano. They both self-described as procrastinators. Miranda and Amanda, who placed in phase two, shared similar learner behaviors with Kate and Caleb, but they were eager to reengage/practice, identified content’s value, experienced mostly positive feelings, and exhibited some self-regulation behaviors. The four students shared some themes in common such as performance avoidance. All four participants commented on having parental and teacher support.
Chapter 5. A Cross-case Analysis

In Chapter four, a within-case analysis was presented in the form of narrative profiles. In this chapter cross-case analysis of findings is developed. Within case themes were examined to identify common themes among students, teachers, and parents from phase one and phase two of the Four-Phase Model of Interest Development. This chapter is organized in five sections.

Section one is concerned with participants who placed in phase one of the Four-Phase Model of Interest Development: triggered-situational. Common themes are: (1) playing piano for others, (2) pop music repertoire preference, (3) lack of belonging to the piano studio, (4) independent practice avoidance: procrastination and frustration, (5) struggle with piano theory and technical fundamentals, and (6) lack of self-regulated learning skills. Common themes within students’ teachers are: (1) teacher and student frustration management, (2) addressing transfer students’ theory and technical needs, and (3) verbal approach to teaching.

Section two is related to the participants who placed in phase two of the Four-Phase Model of Interest Development: maintained-situational. Common themes are: (1) playing piano for myself, (2) broader music repertoire preference, (3) sense of belonging to the piano studio, (4) independent practice: enjoyment and struggle, (5) larger musical vocabulary, (6) emergence of self-regulation learning skills. Common themes within participants’ teachers are: (1) shifting from teacher to coach and mentor, (2) understanding students’ needs and interests, (3) building performance confidence, and (4) verbal and modeling approach to teaching.

Section three presents common themes across participants from phase one and phase two of the Four-Phase Model of Interest Development: triggered-situational and maintained situational. Common themes are: (1) value recognition in learning music, (2) supportive parents and teachers, (3) musical performance anxiety.
Section four introduces common themes across teachers from phase one and phase two of the Four-Phase Model of Interest Development: triggered-situational and maintained-situational. Common themes are: (1) ideal parental involvement and (2) establishing goals.

Finally, section five introduces common themes across participants’ parents from both groups of interest development. Common themes are: (1) musical benefits, and (2) need for practice reminders.

**Triggered-situational interest development phase**

**Playing piano for others**

Through playing piano, participants sought connection with their family. For example, during the interview, Kate noted that piano was “not her thing.” She also said that she never asked for lessons, but she wanted to “make her dad proud.” Similarly, Caleb discussed that playing piano kept him connected to a long line of family members that did piano. I noticed that performing piano is currently governed by an internal sense of obligation to participants’ parents. For example, during the interview, participants discussed that music played an important role in their lives but mostly because “they liked to hear music all the time,” but they also wanted to make lessons “useful” for their parents.

**Pop music repertoire preference**

When choosing new repertoire, participants favored learning music outside of the classical genre. They preferred pop music for listening and playing because of the rhythm and lyrics. For example, Caleb enjoyed connecting the song’s lyrics with his personal life. He also said that he appreciated how the song “A Day in the life” by Paul McCartney, turned a regular day into a good one. Participants also noted that hearing the songs assisted them in “making more sense of the music.” For example, Caleb said that when listening to “A Day in the life” by
Paul McCartney, he was able to “pick up faster the rhythm and the tempo.” Similarly, Kate pointed out that being able to sing and play at the same time helped her to “make more sense of the music.”

**Lack of belonging to the piano studio**

Participants expressed feeling lonely and not having “piano friends” in their piano studio. They commented that they did not know other members from the studio. During the semi-structured interviews, Kate and Caleb described moments in which they did experience belonging. However, it occurred during their time at the former piano studios. Participants mentioned the satisfaction of playing in studio recitals and the pleasure of participating in informal studio parties where performance was also encouraged. For example, Caleb expressed several times that he missed his former piano teacher because she encouraged collaborative playing and organized informal recitals. These “get togethers” allowed him to know other members of the studio. He mentioned that he felt part of a studio before, but as today, he feels isolated. He said,

> In my first studio, I also got to know the people that went there and got a connection with them. Here they are just waiting on you to finish and you don't really know anything about them.

Kate began piano lessons in a partner lesson setup. She and her friend worked together for a few years until Kate’s parents transferred her to a new studio where she receives private lessons. Observations of lessons and conversations with Kate revealed that she is an introverted teenager who might feel comfortable in a different piano setting than private lessons.

**Independent practice avoidance: procrastination and frustration**

Participants recognized that establishing a weekly practice routine was a challenge for them. They commented that procrastination and experiencing frustration caused them to “avoid
practice at all costs” or “put it aside until it never happened.” For example, participants discussed that they procrastinated with any activity they did, but mostly in piano because they did not know what to do or how to fix problems. Participants perceived that the level of repertoire difficulty influenced positively or negatively their desire to practice. For example, Caleb said having a piece like “A Day in the Life” or another Beatles song usually inspired him to “like practicing,” but a piece such as the Clementi’s Sonatina did not motivate him to practice.

Observations of practice sessions and lessons showed that frustration played a big role in participants’ practice sessions. For example, when practicing Kate struggled with coordination, keyboard topography, hand position change, and some arpeggiated chords of the Burgmüller’s “Ballad.” Initially, she approached the issues by working on hands separated, but once she became frustrated, Kate engaged in repeating the piece faster and faster. It was only in one of the observed practice sessions that she reviewed her teacher’s notes as an attempt to address the issues.

Frustration was present during Caleb’s lessons. As noted in chapter four, Caleb did not share any practice video recording because he admitted to his teacher feeling embarrassed. I observed that Caleb became easily frustrated during lessons—mostly when counting aloud or metronome was being implemented. When analyzing Caleb’s semi structured interview, I corroborated how annoying, and frustrating was for him using the metronome. He said,

The metronome has a set pace, and it is not going to change. So, while in my head I count, I will most likely change the rhythm. So, metronome just makes me a little frustrated. I just hear that little fast 'Tick Tick’ going on and it just upset me!

As a result, Caleb challenged her teacher’s feedback and questioned the metronome use or the importance of playing in a certain manner.
Struggle with piano theory and technical fundamentals

Observations of lessons and practice sessions revealed that participants struggled with basic musical elements. They exhibited issues regarding reading music, keeping a steady pulse, playing hands together, and understanding rhythm, time signature, and key signature. Participants also showed lack of technical skills to favor expressivity.

Participants recognized that they have improved their piano skills, but “still it is very difficult to play.” They were aware that if the teacher did not tell them what to do “step by step,” they experienced confusion when practicing independently. For example, Kate said, “I need my teacher’s help on everything I do, you know?” She continued saying that she did not “have the necessary skills to play the piano.” Similarly, Caleb commented that he “got lost all the time” when playing piano. He expressed that rhythm was the most difficult aspect for him. He said, “I am not very good at keeping the rhythm and remembering to count for the pieces.” He continued saying, “My teacher tells me things like, 'you did an amazing job', 'look how far we’ve got' but I still get lost every time.”

Lack of self-regulated learning skills

When discussing self-regulation, participants discussed the importance of setting goals to practice effectively, and they described how their teachers recommended that they approach their music. Participants considered that “setting goals” consisted of setting a number of repetitions which provided structure to their practice sessions. I observed that once the repetitions were completed, they ended their independent practice sessions. For example, Kate said, “I usually just replay and keep playing it over. That's basically what I do every time, but I usually try to keep playing it until I get it right at least 5 times.” Similarly, Caleb said, “I plan for repetitions, like for my repertoire I like to say, “I will play this song five times and see if I get it.” Then “I'm
going to play the next song like, three times.” I also noticed that participants did not express having expectations with their music or did not engage in self-assessment to approach issues with different tools.

Participants used the same practice strategy regardless of the musical issue. They did know that something “was not correct,” but they did not know how to fix it. Usually, they implemented hands separated as the main strategy to alleviate trouble spots. During the semi-structured interviews, participants also mentioned “isolating the difficult spots” as a practice strategy, but they barely implemented it during their independent practice sessions. One interesting finding occurred when Kate’s teacher announced the upcoming spring recital. Initially, Kate reacted nervously and refused to play, but analysis of her independent practice sessions showed that she became more deliberate in her practice. She included new strategies during her practicing such as using metronome, isolating difficult spots with more frequency, and even singing and tapping her music to alleviate coordination. Those were suggested by her teacher during the previous lesson.

Common themes between phase one teachers

**Teacher and student frustration management.** Teachers expressed feeling frustrated because of the lack of students’ progress. Teachers said that they were “teaching the same concepts week after week.” They discussed that despite of implementing multiple strategies “nothing seemed to work:” students did not invest time during the week on piano. Likewise, students also experienced frustration. Therefore, their teachers usually heard reactions such as: “this is not humanly possible,” “my hand is too small for this,” “every time I get to this place I mess up,” and “I just can't figure this out.”
Teachers reacted with empathy, encouragement, and honest conversations to students’ frustration. They discussed the learning curve and encouraged students to believe in their abilities. For example, one teacher said,

I usually share that I too get frustrated and sometimes it feels like you will never master something, but if you give it time, you can almost always find a solution. I explain that sometimes our brains just have to live with the new information for a while and then one day it all makes sense.

She continued saying,

I have had students just shut down or pitch a fit. Recently I had a student who was angry at me because I would not alter the music. She insisted that her hand was too small for this piece (It was not!). She was visibly agitated with me. I remained calm and told her that when she felt more relaxed and was open to learning something to let me know. Then I went out into the hall and sat down in a chair. In a few minutes she let me know she was ready, so we continued. (She plays that piece quite beautifully now!)

**Addressing transfer students’ theory and technical needs.** Teachers believed that addressing students’ theory and technical needs played a key role in their teaching. However, they expressed that it was difficult for “to know what students know and what they don’t know” because they transferred to their studios. For example, one teacher said,

It is very difficult to know what she knows and what she doesn’t know. I cannot see in her head, and she’s not going to tell me what she doesn’t know, so it is very frustrating. I don't know what her other teacher taught her; you know?

Teachers wanted to understand the lack of weekly independent practice, the lack of basic musical skills such as rhythm, reading, and aural skills. For example, one teacher said,

One recent student used to get very frustrated immediately with anything I was trying to help her fix in the music. It also turned out she had never spent any time sight reading. I gave her some easy materials and at first it was very difficult, but then she got the hang of it. And the thing that was so surprising to me was after about 6 months she completely also got over being frustrated with learning new music. Her reading skills had improved a lot. Now she had more brain energy to focus on the music and to fix technical problems. I have always thought if the student has big difficulties reading, they are more likely to quit and this kind of proved my case.
Observation of lessons and practice sessions showed that theory assignments, aural skills training, or additional technical exercises were not implemented during the six weeks of the study.

**Verbal approach to teaching.** Teachers favored mostly a verbal approach to teaching. During lessons, teachers usually (1) provided lengthy verbal explanations about concepts or techniques, (2) offered non-targeted feedback but general impressions of performance, (3) insisted on repetitions during lessons to gain rhythm and reading accuracy, and (4) used imaginary to foster expressive learning without modeling or demonstration of physical gestures. Videos recordings of lessons exhibited little if any teaching demonstration, slow pacing without clear goals, and questioning to trigger independent thinking. On some occasions, teachers implemented discovery learning to correct notes and rhythm. They also asked students to rephrase instructions to assess students’ understanding.

**Maintained-situational interest development phase**

**Playing piano for myself**

Playing piano was a vehicle for participants’ self-expression. They also recognized playing piano as a “fun thing to do.” For example, Amanda said, “playing the piano helps me to stay focused and helps me to express myself in a ton of millions of ways.” Similarly, Miranda stated,

Playing the piano is important to me because I love music. I also like the part where most music that you listen to always has the piano in it. And that's what I really wanted to do is like play music that people listen to.

Participants are currently enrolled in other musical activities different from piano: Miranda plays the trumpet at her high school’s band and Amanda takes voice lessons in a private studio. However, participants elaborated on how piano “was more important to them.” Due to
participants’ motivation to practice and engagement in church playing, their piano teachers enrolled them in state competitions such as LMTA Keyboard Olympics, LMTA Rally, and NFMC Festivals.

**Broader music repertoire preference**

Participants named a variety of music genres for listening and playing such as jazz, pop song, and classical music. They discussed that playing music from the classical genre was “enjoyable.” For example, Amanda said that she appreciated playing and singing music from Olivia Rodrigo, but she also liked playing “the classical music in lessons.” Similarly, Miranda mentioned that she enjoyed playing her church hymns, pop songs, and Latino songs. She appreciated that her teacher gave her the opportunity of choosing her music regardless of the genre. She said,

> I feel like I definitely have a say on what I play and how I want to do it. I'll usually do like all the pieces, but I think it's only happened like twice that didn't really care for a piece too much. So, I just asked if we could change it. She said 'Yes.'

**Sense of belonging to the piano studio**

Participants experienced belonging to their piano studio. They felt that they were important members of a larger studio: they felt close to their teachers and peers. Miranda mentioned enjoying that some friends at her high school were also members of her teacher’s studio. She realized that during the frequent summer camps and informal recitals that her teacher organized. Miranda’s teacher is a well-known music teacher in her area. For Amanda, she considered it a privilege to be part of her teacher’s studio: her teacher is a college music teacher with a small and selected piano studio. They considered being members of a chosen group that “can play and instrument that not many people can.”
Independent practice: enjoyment and struggle

Participants discussed that they enjoyed their independent practice time. They recognized that regular practice was the only way to “get better in piano.” They liked hearing improvement in their music, getting to master a piece, and knowing that if they practiced, they “would do good in lessons.” For example, Miranda said, “the best way to prepare for my lessons is by practicing.” However, they also recognized that establishing a practice routine was a challenge for them: school workload, family distractions, and feelings of frustration and self-doubt. For example, Amanda mentioned that she felt very tired after school and discussed that staying focused during practice time was a struggle. Participants also commented that their motivation to practice was positively influenced if they had pressing deadlines or appealing repertoire with “the right level of challenge.” Both participants exhibited the desire to persevere and progress in their piano playing.

Observations of practice sessions and lessons showed that participants displayed different technical/musical sources of struggle. On one side, Miranda struggled with a tense performance apparatus that prompted pulse, rhythmic, and coordination problems. On the other side, Amanda exhibited a solid technique, but reading music was not “her friend.” Interestingly, participants engaged in similar practice strategies to solve the issues: hands separated, blocked chords, tapping, and little use of metronome. Similarly, participants described that setting goals helped them to stay focused. These goals consisted of deciding how long to practice and focusing on the difficult parts of the music first. For example, Amanda commented that by practicing “for little increments” through the day helped her to stay on task and not to engage in mindless repetitions. Finally, participants overcame feelings of frustration when practicing: Miranda practiced in a noisy room and struggled with lack of technical skills. Amanda struggled with
reading skills and experienced feelings of self-doubt. During the interview, Amanda share that sometimes she practiced with the motivation of not being exposed as a “bad performer.”

**Larger musical vocabulary**

Participants managed a larger musical vocabulary. They were able to describe in musical terms preferred musical genres or specific sections of pieces. They discussed the role of dynamics, articulations, and ritardando to play with artistry. Participants used musical vocabulary to identify issues in their music. They also considered that they have become more confident regarding their piano skills. They expressed that if they heard a “particularly enjoyable song,“ they could look it up and work independently to master the piece without their teachers’ help. Participants are exposed to weekly sight reading, aural, and written theory assignments. Both participated in regional and state competences. Amanda had achieved the highest marks in LMTA Rally.

**Emergence of self-regulated learning skills**

When discussing self-regulation, participants exhibited similar behaviors with participants from phase one: they focused their practice sessions on playing through the pieces. However, participants shared a desire of “get it right,” held expectations with their music, and wanted to improve their playing. For example, Amanda shared that “practicing for little increments through the day helped her to stay on task and not to engage in mindless repetitions.” Participants expressed wanting to reengage in practicing and experiencing mostly positive feelings. They also exhibited having a larger practice toolbox to face challenges, invested several minutes working on difficult passages, and exhibited a longer attention span. For both participants, goals were not explicit, but they recognized that “focusing on the difficult parts
first.” Usually, participants believed they were able to master the piece and used positive self-talk for motivation. Participants did not exhibit self-reflection behaviors.

**Common themes between phase two teachers**

**Shifting from teacher to coach and mentor.** Teachers described that as participants reached adolescence their role shifted from teaching to guiding and mentoring: they should be someone they could relate to and connect with when learning about music. Teachers considered that making sure participants “felt comfortable with them constituted their first goal.” For them, it was key to include Miranda and Amanda in the learning process, to ask them what they thought before sharing suggestions, to avoid feedback that provoked shame, and to react with an open mind when issues arose. For example, while teachers assigned three pieces during the six weeks of the study, they made sure that the repertoire was chosen by mutual agreement. One of the teachers said,

> I always involve students in choosing their own repertoire. For classical literature I will generally have an idea of where I want to go with them. I will pick out a few pieces (3 or 4) and have them listen to those pieces. I want them to listen (not look at the score) and make the choice. For pop music or other genres, I have them make a list of 5 pieces. Then I listen and try to figure out which one will translate to piano the best.

Generally, teachers helped participants to evaluate schedules and to prioritize effective practice strategies. They expressed being mindful about when to push participants and when to lay back to avoid “taking out the joy of playing music.” Therefore, teachers engaged in conversations about school to build up rapport and to create an open channel of communication. Nevertheless, they noted that cultivating relationships with adolescents takes more time compared to other age populations.

**Understanding students’ needs and interests.** Teachers discussed that understanding students’ needs and interests were key to adapt and to plan the teaching strategies used in
lessons. Teachers discussed that during adolescence, self-awareness played a big role.

Consequently, participants could be reluctant to try new music or new techniques. Therefore, teachers considered that having enough flexibility, avoiding the “one method meets all needs,” and failing to connect theory or skills to learn should be at the core for learning. Finally, teachers noted that to effectively assess/address participants’ learning needs, they were required to understand participants’ body language and emotional needs.

For example, one teacher said,

Many times, they arrive not ready for music because something else is bothering them. Unless they are in tears or red in the face then what I usually do is to start with something they like and just get them playing. The mom part of me wants to help them address their issue, but I find that the healing power of playing the piano is a wonderful resource.

Teachers connected participants’ personal activities of interest to piano instruction. They wanted to instill in Miranda and Amanda a lifelong love of music while fostering a sense of musical identity and promoting a sense of community. For example, they identified the need of advancing participants’ reading skills level and hymn-style playing because of their interest in church playing. To provide structure and motivation to participants, teachers enrolled Miranda and Amanda in state competitions such as LMTA Keyboard Olympics, LMTA Rally or NFMC Festivals.

**Building performance confidence**

Teachers considered that providing small and incremental steps from an informal to a formal performance opportunity was key for participants to gain confidence. They asserted that every student was different, and therefore, recitals/competitions could trigger a variety of unexpected emotional and physical reactions. For example, one of the teachers said,

My latest thing is having them play for each other. We get together every couple of months to practice them. I also have them perform whatever they are working on for each other. I do not make them memorize for this...I do encourage it...but many are so
paranoid that they will forget. I've also arranged for my students play for art openings, etc. People are talking and walking around so there's not so much pressure.

Teachers also mentioned organizing mock recitals and teaching their students strategies on how to deal with memory slips or performance anxiety. For example, one of the teachers said,

I recommend my students sitting at the piano right away when they get home from school, no warmup or anything, and practice performing their piece. Then, they can work on any areas that need improvement. I discuss every step including adjusting bench, breathing and focus, mentally hearing before starting, how a song ends - hand/pedal lift/hands in lap- bowing and exiting. Also, what to do if there is a memory slip. We talk about why we might feel nervous and how to work through that. We work on having few places where a student can pick the music up if something gets off the path. I talk to them about always singing the music as if it is a tape playing in their head.

**Verbal and modeling approach to teaching**

Teachers used both a verbal and modeling approach to teaching. However, Miranda’s teacher tended to favor a playing through approach to address rhythmic issues while Amanda’s teacher worked on specific problematic sections to shape student’s gestures and artistry. Video recordings of lessons showed that teachers (1) offered targeted feedback, (2) expressed clear expectations to the student, (3) demonstrated/modeled as needed, and (4) encouraged participants’ self-reflection. Finally, teachers covered aural skills training, sight-reading exercises, and included several sets of repertoires on lessons.

**Common themes among participants from both groups**

**Value recognition in learning music**

Participants from phase one and phase two of the Four-Phase Model of Interest Development recognized value in learning piano. While participants from phase one expressed “playing the piano for others,” they still believed that it was a skill they would be grateful to have in the future. Participants from phase two experienced a similar sense of gratitude and value towards playing piano. Amanda valued the opportunity of having in “music something that as a
family we all share.” For Miranda, she felt grateful with her grandparents for paying her weekly lessons.

**Supportive parents and teachers**

Participants felt supported by their parents and teachers. Sources of parental and teacher support included parents and teachers verbally motivating participants to practice, praising them for performance improvement, or showing understanding for their lack of motivation to practice. For example, Kate mentioned that while her teacher encouraged her to practice, she showed understanding when she did not put in much effort during the week. Also, Caleb mentioned that his mom usually posted videos of his performance in social media.

Participants identified that during lessons, their teachers always shared “tips” which helped them to play better. Participants considered that their teachers were patient and constantly encouraged them to “try again.” They considered that their teachers offered good advice to improve their playing, to manage nerves, or to understand “difficult spots in the music.” For example, Amanda commented that her teacher helped her with her performance anxiety and reminded her about the joy of playing the piano.

**Musical performance anxiety**

When I asked participants for happy piano memories, they mentioned experiencing success in solo and collaborative studio recitals. They discussed feeling proud of themselves because “all the effort was worth it” or because their performance achieved “excellent marks” in competitions. Similarly, participants recognized that recitals and competitions influenced their motivation to practice because of “having a deadline to meet.” However, they noted that currently, recitals are not joyful events for them. During the interviews, participants did not understand the importance of having recitals. They considered that they lacked a purpose. For
example, Caleb said that he missed receiving feedback afterwards. He continued explaining that since he did not know anyone in the room, he “felt like a stranger.” Different from Caleb, Kate shared several times that she disliked being the focus of attention and enjoyed learning piano “just for herself.”

Participants experienced physical and mental symptoms of performance anxiety. They noted feeling frustrated, disappointed, and sometimes ashamed because their performance did not resemble “the best of their capabilities.” Unpleasant piano memories were related to memory slips during piano recitals and feeling embarrassed afterwards. Participants said that if the option was given, they preferred not to play, yet they agreed to play to please their family and teacher.

Amanda is the participant who competed the most. While she had achieved the highest marks in her LMTA Rally category, she discussed that competitions are a source of tremendous anxiety for her. Usually, competitions affected her physically and emotionally. She described herself as a nervous performer and discussed having negative thoughts that popped into her head when preparing for competitions and during performance. I noted that she seemed very focused on placing or meeting family/teacher self-perceived expectations. She explained me that competing for her, was “good practice for college auditions or job interviews.”

**Common themes among teachers from both groups**

**Ideal parental involvement**

Teachers recognized the role of parents as key for nurturing and providing structure to music lessons. However, they noted a shift in parental involvement when their children “reached a certain age.” Teachers recalled that parents used to be engaged in practicing when their children were younger, but once their children went into the teenaged years, parents moved to a hand-off approach regarding practicing and lessons. Teachers expressed wanting parents to
understand that experiencing “ups and downs regarding their children’s interest in piano was normal.” They also wanted them to help students with practice at home, to “sit and listen now and then”, and “to be encouraging.” Teachers noted that students needed more space, but some help would support their children’s education.

**Establishing goals**

Teachers identified the need of establishing short-term and long-term goals to keep students motivated to practice. They acknowledged students struggled with practicing because of academic demands, extra-curricular activities, social influences, and/or determining if piano or being a musician was an extra-curricular activity for them or part of their identity. Therefore, for teachers, “having goals” were key to keep students engaged. For example, one of the teachers said,

> While the family had been very supportive of their music education when she was younger, the family, to me, began to be more engaged with sports and academic activities at school. There simply wasn't enough room to keep piano going! I noticed that once students reached this age, if the music is still difficult to process for whatever reason, (naming notes, rhythms, technique) unless they have a goal they personally want to attain, they will tend to quit.

Finally, teachers expressed that they wanted to establish long-term goals by stressing on “the skill students were developing now was something they could carry through their whole life.”

**Common themes among parents from both groups**

**Musical benefits**

Parents mentioned that music benefits their children in many ways. When asked for reasons to enroll their children in piano, parents mentioned skills such as learning time management, cultivating their children’s minds, helping with academic subjects, conquering fears, and developing valuable skills to have in life for example: to teach others or to use for employment when getting older. Simultaneously, parents recalled having lessons or playing in
ensembles when they were younger. They wanted their children to have access to similar opportunities. For example, Miranda’s dad said, “I used to play the trombone in the Million Dollar Band at U of Alabama and took piano as a young child. Then I just dropped out. I regret that!” Caleb’s mom said, “I played piano until I was a junior in high school and I can still play some.” Parents from participants placed in the triggered-situational interest development phase confessed that their kids are still in lessons because they are forced to. For example, Kate’s mom said,

Kate would like to quit at any moment that we would allow her to quit. She is not involved in any sports; piano is really the only extra-curricular activity that she is involved in. I have told her on many occasions that she may not like it now but one day she will be glad she knows and stuck with it.

Need for practice reminders

Parents identified that daily practice reminders were needed for participants. For example, Kate’s mom said,

When practicing, Kate can sit at the keyboard and practice with earphones mostly. She must be reminded or asked did you practice? or she won’t do it. I have very little involvement other than getting her to lessons.

Furthermore, parents noted that repertoire influenced their children’s desire for practicing. For example, Caleb’s mom said, “I know Caleb gets annoyed when he doesn't really care for the piece, or he is feeling pressured to learn something by a certain time or stay longer than he would like.” Parents considered that usually songs from the radio or music that the whole family was able to recognize motivated their children to practice the most. Finally, they commented that competitions and recitals put anxiety on their children. However, they agreed to participate and practiced more to meet teacher’s expectation.
Concluding thoughts

Participants who placed in phase one of the Four-Phase Model of Interest Development exhibited the usual learner characteristics described by the authors Hidi and Renninger (2006): Participants (1) were not able to focus for a long period of time, (2) necessitated external support to reengage, (3) experienced positive and negative feelings, (4) were not able to self-regulate during independent practice sessions, (5) expressed confusion or unfamiliarity with the topic, and (6) wanted to be told what to do. Participants who placed in phase two of the Four-Phase Model of Interest Development were able to stay focused for a longer period, (2) expressed willingness to reengage in practicing, (3) experienced mostly positive feelings, (4) showed emergence of self-regulation behaviors during independence practice, (5) developed a sense of content’s value, and (6) wanted to be told what to do but expressed a desire for autonomy in the decision-making process.
Chapter 6. Discussion, Implications, and Recommendations

In this chapter, I discuss findings presented in chapter five. When possible, I connect findings to the related literature. This chapter is organized in three sections. In section one, I discuss the emerging themes from the research questions. Then, in section two, I refer to limitations, implications, and recommendations for future research. Finally, in section three, I offer concluding thoughts.

Research questions and emerging themes

Participants who placed in the triggered-situational phase of interest development exhibited motivation in terms of musical behaviors as (1) value recognition in learning piano, (2) struggle with piano fundamentals, (3) independent practice avoidance, (4) pop music repertoire preference, and (5) solo recitals and competitions avoidance. Participants exhibited unfulfilled psychological needs: autonomy, competence, and belonging. The lack of needs fulfillment influenced their exhibited musical behaviors and self-regulation learning skills. Finally, motivation was exhibited in terms of self-regulation as (1) absence of planning, self-instruction, and self-assessment. Analysis of data might suggest that each theme may be associated with several categories. For example, participants discussed that the source for lack of weekly independent practice sometimes came from “not knowing what to do.” This finding might be connected to students’ musical behaviors because of the tendency to avoid independent practice sessions. However, it might be also related to participants’ lack of autonomy, competence, and self-regulation learning skills. Participant’s teachers implemented several strategies to motivate participants to practice such as introducing a diverse repertoire of students’ choice, implementing practice checklists, or explaining the importance of practicing. Teachers favored verbal
approaches to teaching and exhibited feelings of frustration. Communication with parents was successful with one participant and “could improve” with the other participant.

Participants who placed in the maintained-situational phase of interest development exhibited motivation in terms of musical behaviors as (1) self-expression and value recognition in learning piano, (2) intermediate piano skills, (3) independent practice enjoyment, and (4) solo recitals and competitions avoidance. Concerning psychological needs, participants exhibited simultaneously a partial fulfillment of competence while full fulfillment of autonomy and belonging. Finally, motivation is exhibited in terms of self-regulation as (1) emerging planning and self-instruction skills. Similar to participants in the triggered-situational phase of interest development, psychological needs influenced their exhibited musical behaviors and self-regulation learning skills. Teachers enjoyed teaching participants and worked in instilling a lifelong love of music. Communication with parents were successful with both participants.

**Personal meaning in learning piano**

Participants in phase one discussed extrinsic reasons for enrollment in piano. They recognized value in their music education for either pleasing their parents or for appreciation of having piano skills “in the future.” They self-perceived emotional connections with their family because of music (Ryan & Deci, 2000). During the interview, participants did not express wanting to quit lessons if the option was provided. However, it is important to consider that they may have wanted to please me with their answers.

Participants in phase two encountered in piano a valuable skill to have in life for future college auditions and professional life: they even discussed being open to considering a career in music. They experienced music as a “way to express themselves.” Participants felt that being in
music allowed them to be members of a community. They looked forward to every lesson and appreciated the freedom to explore individual expression in music.

Renninger and Hidi (2016) asserted that adolescents strive to find their own and unique identity when working on new skills. Participants in phase one and two referred to personal growth in continuing their instrumental studies—a desired musical outcome for music teachers (Cheng & Southcott, 2016; Evans et al., 2012; Saeed & Zyngier, 2012). The data suggested that participants sought to develop skills that responded to their social and emotional needs. St. George et al. (2014) linked emotional connections to the continuation of music studies while Evans et al. (2019) discussed the importance of considering a multi-dimensional perspective when teachers address students’ needs in music. In this study, participants in phase one referred to mostly extrinsic reasons to learn piano while participants in phase two alluded to both extrinsic and intrinsic reasons.

**Influence of repertoire selection in students’ motivation to practice**

Participants discussed that repertoire influenced their motivation to practice. Along the six weeks of the study, participants in phase one worked exclusively on either one or two pieces: one of the pieces was chosen by the teacher, and the other by the student. Participants in phase two worked in three or four pieces. Additionally, they worked on aural skills, sight reading exercises, and music theory. Participants from both phases were involved in the decision-making process of choosing pieces and appreciated “having a say” in choosing repertoire no matter the genre (Renwick & McPherson, 2002). Similar to Renwick and MacPherson, findings from this study suggested that participants approached the pieces with effective and deliberate practice strategies when practicing their selected piece.
Participants in phase one expressed a preference for pop music because it not only allowed them to express themselves but also to overcome musical challenges while participants in phase two recalled loving a variety of genres such as jazz, music from movies, and classical music. Similar to participants in phase one, they enjoyed the relationship between rhythm, notes, and lyrics from popular music. Thus, teachers might consider teaching pop songs to offer opportunities for students to develop identity and expression through music. Also, teachers should be aware of the benefits of providing an aural reference to overcome rhythm and notation weaknesses to students (Dunbar-Hall & Wemyss, 2000; Fernandez-Company et al., 2022; Green, 1999; Petrovic, 2022; Wallerstedt & Pramling, 2015).

Independent practice: Failure prediction and procrastination behaviors

Like many intermediate students, these participants had studied piano for an average of 6.24 years—they had completed a series of piano methods and had participated in recitals or competitions. However, currently participants from both phases of interest development were still struggling with core musical skills which might negatively influence their interest and motivation to practice—participants in phase one struggled mostly with rhythm and reading skills while participants in phase two struggled mostly with reading and technical skills influencing tone quality and physical comfort when performing. Their motivation to reengage in the instrument might be influenced by their interest developmental phase (Rosenzweig et al., 2019; Wigfield & Rosenzweig, 2016).

While it was noted that participants in phase one did not enjoy practice and participants in phase two enjoyed practicing, procrastination behaviors and anticipated feelings of failure were present for all participants. However, a key difference was found in this study: participants in phase two experienced enough interest to know that with plenty independent practice,
eventually they would overcome musical challenges—which for them was gratifying.

Participants in phase two recognized that their independent practice sessions had worth the time because they had experienced success before. They enjoyed reengaging in playing piano and attributed to practice the cause of their success or lack of success.

Procrastination refers to the tendency to postpone starting or finishing an activity (Senecal et al., 2003). Unlike expert music learners, adolescents may seem reluctant to engage in an activity because of having insufficient cognitive schemata and aural skills (Hallam, 1997a) or because of predicting failure (Carnevale, 2016). Dweck (2007) stated that self-attributed causes for succeeding or failing in a specific task have a large psychological impact since these beliefs impact what individuals believed about themselves. She stressed that those self-attributed causes shaped future learning experiences as well. Usually, participants in phase one self-attributed causes for failing with a specific task to “not being good at it,” “not having the necessary skills,” or they predicted failure when practicing (Austin and Vispoel, 1998; Dweck & Legget, 1988). Consequently, participants from this research study might be avoiding practice because of lack of skills, failure prediction, and procrastinations behaviors. Teachers might deeply examine the root of procrastination and promote success to avoid students’ procrastination and frustration (Valenzuela et al., 2018). Some ideas could include (1) establishing realistic practice routines, (2) making purposeful repetitions, and (3) demonstrating at the piano why a specific practice strategy might a good match for a faced issue in the music score.

**Music performance anxiety**

Performance anxiety is common during adolescent years (Papageorgi, 2021). Participants from phase one and phase two from this study expressed that when performing, they experienced memory slips, muscle tightness, engaged in negative self-talking, and predicted both fear of
failure and/or teacher/parents’ disappointment. They also mentioned experiencing negative feelings such as shame or guiltiness because of their lack of preparation. Participants also considered that not knowing what other people thought about their performance was nerve-wracking. Finally, participants agreed to perform to please parents and meet teacher expectations. They commented that if it was up to them, they would prefer not to participate because it did not interest them, or it made them feel nervous.

During adolescence, interest is a vital part of developing a sense of self. Self-concept influences how individuals understand new information. Thus, perceived cost and attribution affect motivation and self-regulation behaviors (Marsh et al., 2019; McPherson & McCormick, 1999; Renninger & Hidi, 2019; Zimmerman & Cleary, 2006). Adolescents’ musical self-concept (Elliot & Dweck, 2005; Marsh et al., 2019) is worth considering when teaching teenagers (Bandura, 1982). Thus, sometimes students who refuse to (re)engage in a specific activity, or that seem to have a lack of interest are merely using the behavior as a safety mechanism (Bacura, 2019). For example, Masselink and Oldehinkel (2018) found that adolescents sought to evade situations perceived as dangerous to safeguard themselves from more harmful experiences (p. 940).

When analyzing the data, it was clear that phase one and phase two participants experienced Musical Performance Anxiety (MPA). Kenny (2011) refers to music performance anxiety as

The experience of marked and persistent anxious apprehension related to musical performance that has arisen through underlying biological and/or psychological vulnerabilities and/or specific anxiety-conditioning experiences. It is manifested through combinations of affective, cognitive, somatic, and behavioral symptoms. It may occur in a range of performance settings but is usually more severe in settings involving high ego investment, evaluative threat (audience), and fear of failure. It may be focal (i.e., focused only on music performance), or occur comorbidly with other anxiety disorders, in particular social phobia. It affects musicians across the lifespan and is at least partially
independent of years of training, practice, and level of musical accomplishment. It may or may not impair the quality of performance. (61)

Phase one and phase two participants’ fear of failure or social exposure in front of peers may have promoted their recital performance avoidance. For example, one of the participants said, “I am afraid of making a mess of myself.” Participants attributed their lack of success to feeling extremely nervous. However, they were also aware of their lack of preparation.

Therefore, teachers might consider self-concept, performance anxiety, and interest literature when teaching. Also, by considering the role of failure as vital part of the learning process (De Castella et al., 2013; Parker, 2020; Smith, 2011; Svinicki, 2004), providing formal and informal spaces for students’ performances may help students to enjoy performance. Finally, self-concept and self-awareness triggers social comparisons, self-imposed pressure, and peer pressure to perform and/or to behave in a certain way (Wlodkowski & Jaynes, 1990). Therefore, being aware of these psychological factors that influence music performance anxiety may alleviate students’ experience when performing.

Some practical strategies include openly discussing performance anxiety with students and parents to implement practical ways for students to experience success when performing—students will not likely communicate experiencing performance anxiety (Ryan, 2023). Getting students familiar with strategies to couple with musical performance anxiety might be a desired goal for teachers: Dr. Charlene Ryan’s literature and books addresses musical performance anxiety and clearly explains MPA to young students (i.e., Katherine Lost and Hannabelle’s Butterflies). See Table 6.1 for additional suggestions.

Psychological needs’ satisfaction

Psychological needs satisfaction is key to promoting motivation and interest in practicing (Cheng & Southcott, 2016). Self-Determination Theory states that all human beings have three
basic psychological needs: autonomy, competence, and belonging (Ryan & Deci, 2000; Wigfield et al., 2016). On one side, phase one participants exhibited unfulfilled psychological needs. Participants believed “not having the necessary skills to play piano” and noted in multiple occasions “not knowing what needed to be done” when practicing. They knew “something” was missing, but they were unable to fix the problems. On the other side, phase two participants expressed feeling competent to meet musical challenges. They experienced freedom to share opinions in their playing and felt part of the decision-making processes. Also, they felt members of a large and special studio in their town. Participants believed that they had the competence to play piano, and if not, they would ask all the necessary questions.

Recent research demonstrated that unfulfilled basic psychological needs could explain why teenaged students lose interest/motivation in instrumental studies (Egilmez & Engur, 2017; Gerelus et al., 2017, Hidi & Ainley, 2002; Juvonen, 2011; Ng, 2017). Other studies have focused on the role of belonging where teachers and peers promoted adolescents’ effective practice behaviors (Bacura, 2019; Parker, 2020). Likewise, Hidi & Ainley (2002) found that adolescents tended to evade activities or situations in which they lack autonomy or competence (Evans et al., 2019. Therefore, findings from this study might suggest that teachers could focus on creating opportunities to promote psychological needs satisfaction to promote interest development in the piano studio.

**Self-regulation behaviors**

Teaching students how to practice is key to further develop musical skills. As teachers, generally, we trust that students will be able to self-regulate, follow teachers’ advice, and refer to teachers’ notes as needed. However, observation of independent practice video recordings revealed that participants did not consult teachers’ notes and mostly played through the pieces.
Usually, phase one and phase two participants consulted their teacher’s notes when experiencing frustration or not knowing what to do next. During the weekly lesson, several practice strategies were suggested, however, participants barely used these. Phase two participants used pencil a few occasions to make notes. Similar to previous research with teenaged music students, participants in phase one and phase two engaged in multiple repetitions or play throughs of their music (Leon-Guerrero, 2008; Pike, 2014). Phase one and two participants’ goals consisted of setting a number of repetitions to remediate challenging measures, thus, it reduced the potential for long-term learning (Carter & Grahn, 2016). Participants recognized that their teacher explained how to practice, but they eventually “kind of forgot what [they] said.” In a small study of high school band students, Schatt (2011) examined the attitudes and perceptions of adolescent music students regarding practice at home and noted an interesting contradiction. Participants reported that their teachers never explained to them how to practice; however, when following up with the teachers, they indicated that they always approached the music by providing practice strategies for them. In this case, Amanda and Miranda were aware of what needed to be done, but still something was missing that prevented them of implementing the practice strategy in independent practice.

Phase one participants had lower levels of interest to reengage in independent practice. Participants’ reasons for independent practice avoidance might include the lack of knowledge due to their weak musical skills or attributions that led to maladaptive behaviors (Renninger & Hidi, 2019). Since participants were unable to experience success, they decided to avoid practicing. Also, the psychological construct of perceived cost may have influenced participants’ motivation to practice. Cost refers to “any negative consequences of engaging with a task”
During adolescence, practicing can take away time from socially interacting with their peers (Linnenbrink-Garcia et al., 2011; Parker, 2020).

Analysis of video recordings revealed that phase two participants exhibited emerging self-regulation skills including planning and self-instruction. They were able to identify that something needed to be fixed, but did not know how to approach it. For example, Miranda (phase two participant) struggled with coordination in a section of her piece. One possibility of the issue was that because of her physical tension, she might be experiencing rhythmic and tempo issues. However, Miranda considered that by working the passage hands separated for a while, she would have improved the passage. Miranda did not try another strategy or consult about it in the following class. Implementing a list of strategies for experienced challenges may be key for Miranda to successfully alleviate the music issue.

Participants may not have yet developed the cognitive or necessary skills to engage in self-regulating behaviors (Darling-Hammond et al., 2020; Hallam, 1997a). This may be aggravated by their lack of interest. Sansone et al. (2015) stated that if an individual does not experience interest, the idea of prompting self-regulation behaviors may be challenging. However, Parker (2020) asserted that “adolescents exhibit a deep capacity for metacognition and abstract reasoning” (p. 79). Therefore, teachers can plant the seeds and promote self-regulation behaviors in intermediate piano students. Some ideas include: (1) help students to establish small, clear, attainable, and measurable goals (Doran et al., 1981), (2) attribute success to specific strategies or behaviors, (3) develop autonomy, competence, and belonging, and (4) promote metacognition and abstract reasoning as critical skills in practicing a musical instrument.
**Important others in the learning process: teachers**

Important others—parents, teachers, and peers provide support, empowerment, and structure to adolescents and learners in general (Benson et al. 2007; Parker, 2020). Participants arrived in lessons with their own set of interests, but they will be influenced by the *situational* interactions between the teacher and peers. It is true that teachers cannot influence previous interests that the students carried on to the lesson, but they might have influenced them by making informed choices on instructional and curriculum materials that move students from a situational interest development phase to an individual interest development phase.

Educational psychology focuses on the application of psychology to the understanding of learners and learning environments (Reynolds & Miller, 2012). Basic knowledge of educational psychology coupled with a diverse pool for explaining and reinforcing concepts may offer teachers a variety of strategies to instill an inner desire for independent practice. For example, usually, participants’ teachers recommended the use of metronome during practice. They provided a specific tempo for a goals and asked the students to meet it. However, feeling a steady beat and asking Kate and Caleb to simultaneously match was very frustrating for them. It may be beneficial to “take a step back” and reinforce rhythm and pulse. An example may include off-the-bench activities involving the whole body. Asking students to verbalize can be powerful as well to master rhythm in an incremental manner. If oral communication is not what makes the student feel comfortable, the teacher might explore other ways of communication/expression such as writing, painting, text messaging, or any other one that fits the students’ personality and/or preferred learning mode.

**Telling and demonstrating.** Analysis of videorecorded lessons exhibited a wide difference between the four teachers’ instructional strategies used in private lessons. Phase one
participants had teachers that favored passive learning instructional methods while phase two participants implemented both passive and active learning methods. Phase one participants’ analysis of lessons revealed lengthy verbal explanations and minimal opportunities for students to either rephrase or replay what the teacher suggested or demonstrated. Few or no teaching demonstrations were provided. When interviewing participants, they expressed a desire for additional teacher’s demonstrations at the piano regarding what to do and how to do it instead of general explanations of concepts and/or strategies to improve their playing. Therefore, teachers might consider demonstrate and model every taught concept. It is critical to reinforce automatic motor responses: technique, keyboard topography, and functional skills to foster interest development in performing piano. Additionally, teachers might consider including theory, improvisation, harmonization, or additional musical activities during each lesson.

**Developing technique.** One finding from this study is that while teachers identified developing technique as a core skill to succeed in piano during the intermediate years, only one teacher was able to indicate how she developed solid technique. Video recordings of her lessons were strongly correlated with her discussion. This teacher ran into specifics about physical approaches and mentioned avoiding specific repertoire for a while such as Johan Sebastian Bach. She said,

> Playing Bach is all about the independent lines which often require different physical approaches, and if the student hasn't gotten a fair idea of how to use their equipment, then to my ears they often sound kind of stuck and they get frustrated from all the independent activities. I will say Bach is great to develop sight reading skills if the student has reached a place where they are not thinking so much about how to play. I think any literature that requires a lot of independent hand coordination before a student is ready for it can make it very difficult for the student to have a successful experience during intermediate years.

In her dissertation study, Julie Knerr (2006) interviewed four exemplary piano teachers to understand how they approach teaching elementary piano technique. Teachers from the research
study agreed on the importance of teaching arm movements before finger movements. They also asserted that it was vital to coordinate all parts of the performance apparatus from the very beginning learning stages, to separate the instruction of music reading from technique, and to be purposeful when teaching each strategy.

**Educating parents.** One finding from this research study was that one participant from phase one of interest development used interchangeably the concept of practice with lesson time. During the interview, I asked Caleb about what he usually did during his “practice.” His answer was,

In my practice, I kind of like moving the piece into little sections, and then learned how to count for this section. And then we move on to a different section. And then we would try to combine those pieces until they got better rhythm, or understanding of the piece, and then eventually you're playing like a whole page together. So, section by section.

Caleb believed that “piano practice” was referred to both the lesson time and independent practice time. Therefore, educating the family regarding the difference between instructional time versus practice time consisted of might be key to avoid miscommunication between teacher and family expectations. Finally, participants’ parents commented that they used to supervise their children’s independent practice sessions. However, when they got into the teenaged years, they believed it was their children’s responsibility to practice and to follow up with the teacher. It might be fundamental to create ways in which parents can keep engaged in their children’s music education while promoting autonomy and providing space for individual learning.

**Important others in the learning process: parents**

Adolescents’ parents can foster interest in a variety of ways that teachers cannot (Hyde et al., 2017). Csikszentmihalyi (1990) found parents’ intellectual support affect adolescents positively. Actions such as time to meet child’s needs, setting high standards, providing lessons
and material and attitudes that leads to enjoyment and satisfaction revealed a strong impact on
students’ motivation to keep engaging in a task. Similarly, Andrea Creech (2010) said that
positive outcomes may be achieved when parents: (a) elicit their children’s views regarding
appropriate parental involvement; (b) negotiate with their children over practicing issues, within
parameters set by the teacher; (c) provide a structured home environment for practice; (d) take an
interest in promoting good teacher–pupil rapport; (e) communicate with the teacher in relation to
the child’s progress; and (f) remain as a supremely interested audience (p.13). Furthermore,
Wlodkowski & Jaynes (1990) stated that students’ families seemed to be the main source of
guidance on a child’s motivation which includes parental background, socioeconomic status
and/or parental support for learning.

Limitations, implications, and recommendations for future research

Limitations

This research study is bounded to a specific time and places. Therefore, it might not be
generalizable but could be transferable to similar contexts. Participants were students from
private studios from a Southern area of the United States. They are not a true representation of all
students from those studios. Social background, economic status, or gender diversity were not
considered in this research study. Interviews were conducted via Zoom because of the COVID-
19 Pandemic. This might prevent me from observing additional body language cues or from
building additional rapport with participants. Since this study aimed to observe students who
placed in situational phases of interest development, I experienced typical engagement issues
with students and parents: absence of independent practice video recordings from one
participant, difficult communication with some parents, and the need for constant reminders for
parents to complete the surveys. Finally, during this research study, I questioned the students’
Interest Development Phase placement. Reasons included that one participant from phase one and one participant from phase two began to regularly engage with the instrument. After the course of the six weeks, the phase one participant participated for the first time in the spring’s recital, and the phase two participant successfully performed in LMTA Rally where she achieved the highest marks. Their teachers expressed being positively surprised and glad that students participated in the study. They wonder if this change in their practice occurred due to being accountable to me or because of other reasons. Fluctuations on interest development are recognized in the research literature. However, further studies are needed to understand what specific aspects or factors influenced participants’ motivation to practice.

**Implications**

Thoman et al. (2017) positioned interest as a foundation for experiencing motivation when activities become more challenging. Thus, interest should be sparked weekly during lessons to foster motivation to practice. To positively influence students’ interest development, teachers might include (1) entering students in events that are not “too overwhelming” to push them to finish pieces of repertoire, (2) finding pieces that are easy to keep memorized even under stress, (3) encouraging them to participate in talent shows at school or playing at church, and (4) providing a well-rounded curriculum that includes sight reading, improvisation, and theory/aural skills. Fostering belonging with teachers and peers may also increase students’ competence (Freer and Evans, 2019). It can also encourage social and identity growth.

Instruction in piano pedagogy provides a comprehensive understanding of effective piano teaching practices. It fosters the use of teaching practices and tools that address students’ unique musical and technical needs. After familiarizing myself with literature in motivation, interest development, teaching teenagers for many years, and completing master’s and doctoral degrees
in piano pedagogy, I suggest the following instructional recommendations that could promote interest development in the piano studio. Teaching suggestions are based on issues observed during this research during the observation of lessons, independent practice sessions, semi-structured interviews, and participants’ practice journals. For piano teachers who have not had education in pedagogy, these practical suggestions could inform their students’ music curriculum. Finally, these ideas are a result of the data analysis process. They should be addressed in every lesson and purposively implemented to potentially promote interest development in the music lessons and hopefully to foster motivation to practice independently.

Table 6.1. Musical Strategies to Promote Interest Development in the Music Studio

<table>
<thead>
<tr>
<th>What did the students need?</th>
<th>What could teachers do to promote interest development?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrating musical understanding</td>
<td>Ask the students to verbalize what’s about to happen on their playing. If oral communication is not what makes the student feel comfortable, the teacher might explore other ways of communication/expression such as writing, painting, text messaging, or any other one that fits the students’ personality and/or preferred learning mode</td>
</tr>
<tr>
<td>Understanding of keyboard topography</td>
<td>Feel groups and shifts, rhythm, and sound of the scales</td>
</tr>
<tr>
<td>Building a solid technical foundation</td>
<td>Warmups and stretches/rotations Work on shaping arm motions instead of finger movements</td>
</tr>
<tr>
<td>Demonstrating theoretical understanding</td>
<td>Weekly harmonization, transposition, improvisation, and sight-reading exercises</td>
</tr>
<tr>
<td>Performing a varied repertoire</td>
<td>Burgmüller’s “Easy and progressive studies” op. 100 Tchaikovsky “Album for the young” op. 39 Grieg “Lyric pieces” op. 12 Amy Beach “Children’s Carnival” op. 25 Heller “Album for the Young” Op. 138 Reinhold “Miniatures” op. 41 Streabbog “12 melodious pieces” op. 63 Refer to the music database “A Seat at the Piano”</td>
</tr>
</tbody>
</table>

(table cont’d.)

4 The illustrated needs emerged when analyzing the data corpus.
<table>
<thead>
<tr>
<th>What did the students need?</th>
<th>What could teachers do to promote interest development?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fostering belonging</td>
<td>Duet series by Jane Magrath</td>
</tr>
<tr>
<td></td>
<td>Piano duet repertoire by Cameron McGraw&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Promote social interaction (Parents and students)</td>
</tr>
<tr>
<td></td>
<td>Promote representation in the studio</td>
</tr>
<tr>
<td></td>
<td>Be aware of language barriers and students’ cultural uniqueness</td>
</tr>
<tr>
<td></td>
<td>Train/read about diversity, equity, and inclusion</td>
</tr>
<tr>
<td></td>
<td>Examine dynamics of power in your studio</td>
</tr>
<tr>
<td>Discussing performance anxiety</td>
<td>Encourage self- reflection during lessons</td>
</tr>
<tr>
<td></td>
<td>Stress over “camaraderie” and foster a friendly and supportive environment in your studio</td>
</tr>
<tr>
<td></td>
<td>Inform yourself about basics on educational psychology that allows you to address students’ negative thoughts, frustration, fear of failure, and attributions</td>
</tr>
<tr>
<td></td>
<td>Careful with stressing “talent” over “effort”</td>
</tr>
<tr>
<td></td>
<td>Foster healthy musicianship practices in the studio</td>
</tr>
<tr>
<td></td>
<td>Performance repertoire should be mastered: form, character, etc.</td>
</tr>
<tr>
<td></td>
<td>Provide formal and informal opportunities to perform</td>
</tr>
<tr>
<td></td>
<td>Discuss “what to do” when experiencing cold or sweaty hands, a faster beating heart.</td>
</tr>
<tr>
<td></td>
<td>Implement breathing and grounding techniques</td>
</tr>
<tr>
<td></td>
<td>Rehearse recital protocols during studio classes</td>
</tr>
<tr>
<td>Overcoming rhythmic issues</td>
<td>Reinforce pulse steadiness with “off-the-bench” exercises</td>
</tr>
<tr>
<td></td>
<td>Implement metronome only when the student has the technical means</td>
</tr>
<tr>
<td></td>
<td>Carefully examine if the rhythmic issues are due to lack of sound or technical control of the instrument</td>
</tr>
<tr>
<td>Promoting tone quality</td>
<td>Examine if the lack of expressive playing is due to lack of sound/technical control of the instrument</td>
</tr>
<tr>
<td></td>
<td>Look for rigid wrists</td>
</tr>
<tr>
<td></td>
<td>Delay working on chords, voicing, or any technical element that could hurt students’ tone or hand</td>
</tr>
<tr>
<td></td>
<td>Emphasize over phrasing and sound control</td>
</tr>
<tr>
<td></td>
<td>Form the habit of active listening when performing</td>
</tr>
</tbody>
</table>

(table cont’d.)

<table>
<thead>
<tr>
<th>What did the students need?</th>
<th>What could teachers do to promote interest development?</th>
</tr>
</thead>
</table>
| Planting the seeds: self-regulation behaviors and self-efficacy beliefs | Delimit goals  
Demonstrate/model each class  
Provide targeted feedback  
Attribute success to practice and not lack of talent  
Experience with students a complete self-regulation cycle: planning, self-instruction, and self-reflection each lesson  
Elaborate from what your student knows |
| Avoiding memory slips                                | No need to insist over memorization if not needed, but nurture a truly understanding of the music by cultivating early memory skills through rote pieces, labeling sections, basic chord analysis or asking students to sing phrases  
Combine rational, tactile, visual, and ear activities to reinforce memorization  
Prevent automatic pilot playing |

**Recommendations for future studies**

The advantages of understanding motivation through the lens of interest development here outlined warrant further exploration of its capabilities, but also offer ways to overcome its current limitations. Future research should replicate this study. Creating a study that follows students for an academic year could illustrate interest development fluctuation and it could explore if specific instructional strategies increased or decreased motivation. Developing a pilot plan for interventions focused both on teachers and students could help to monitor learning experiences in the musical learning with a variety of backgrounds, genres, diversity, and instruments to further understand and monitor motivation thought the variable of interest development. After interventions are implemented, future researchers could create a scale that measures interest development specifically for the music domain.
**Concluding thoughts**

Phase one participants exhibited procrastinating behaviors, unfulfilled psychological needs, and lack of written, aural, and keyboard theory. As a result, participants became frustrated easily. Pop music served as a way for participants’ expression, identity exploration, and sounding reference to overcome rhythmic and reading issues. Participants were enrolled in music for extrinsic reasons. Phase two participants identified the need for independent practice as key to experience success in piano, exhibited stronger musical skills and a larger musical vocabulary. They expressed a larger genre preference for performing. Participants were enrolled in music for intrinsic reasons. Both groups of participants recognized value in learning piano, expressed lack of enjoyment during recitals or competitions due to performance anxiety and exhibited practice behaviors such as incorrect matching of practice strategy to fix music issues, lack of effective planning or self-evaluation. Finally, their teachers were helpful, and they recognized being supported by their parents. Piano teachers discussed the need of switching from a teacher role to a coach role during adolescence. They also discussed the need for teaching frustration management skills. Parents mentioned music being beneficial for their kids’ personal growth, future professional life, and discussed transitioning from a hands-on to a hands-off style regarding practicing.

Effective music teaching requires having simultaneously the technical knowledge of the instrument, an understanding of students’ inner and external selves, and the skill to connect and motivate adolescent students throughout the challenges of musical, personal, and identity growth (Woody, 2019). Therefore, this study may serve to understand the interaction between motivation, interest development, affect, and cognition in adolescent music students. It might provide understanding of the participants’ (1) general musical behaviors, (2) psychological
needs, and (3) self-regulating behaviors. This research study may serve as an intersection between research on piano pedagogy and educational psychology. It could help teachers to explore the barriers that students encounter during the learning process, as well as the role of teachers in promoting interest development at the piano.
Appendix A. Institutional Review Board Approval

TO: Fike, Pamela D  
LSUAM | Col of MDA | Music  
Alex Cohen

FROM: Chairman, Institutional Review Board

DATE: 23-Jul-2021

RE: IRBAM-21-0750

TITLE: A Multiple case study on four adolescent piano students: examining motivation through the lens of interest development

SUBMISSION TYPE: Initial Application
Review Type: Exempt
Risk Factor: Minimal
Review Date: 23-Jul-2021
Status: Approved
Approval Date: 23-Jul-2021
Approval Expiration Date: 22-Jul-2024
Exempt Category: 2b
Requesting Waiver of Informed Consent: No
Re-review frequency: Three Years
Number of subjects approved: 50

LSU Proposal Number:

By: Alex Cohen, Chairman

Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins): notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the
Appendix B. Piano Teacher Consent Form

1. Study Title: A multiple case study on adolescent piano students: examining motivation through the lens of interest development. The purpose of this research project is to examine, through an in-depth exploration, adolescent piano students’ motivation to practice through the lens of interest development. The study will be conducted in two phases.

During the first phase of the study (background preparation) the investigator will contact via email piano teachers in the Baton Rouge area. Those piano teachers who agree to participate will sign a consent form and will ask their students’ parents if they would like to participate in the research study. Once a list of parents is gathered by the piano teachers, they will email it to the investigator. The investigator will contact participants’ parents through email or text message if preferred. The researcher will attach the (1) “Interest Development Scale” as a Qualtrics survey (Boeder et al., 2020); (2) consent form and (3) child assent form. Participants will be asked to complete the scale as a Qualtrics Survey within a two-weeks period. The investigator will request in advance to the piano teachers a written profile of each participant regarding their views on each student’s motivation and interest to practice. The piano teachers may ask for further clarification to the investigators. It is important to clarify that not all participants from phase one will continue to phase two of the study. If selected for phase two, the researcher will notify the participants. The participants can decide to participate in phase one, but they can opt out from phase two.

On phase two of the study, the investigator will collect data through nine different methods: (a) one online survey and one semi-structured interview with students—both the semi-structured interview and the online survey will be conducted at the beginning of the research, (b) one online survey and one semi-structured interview with students’ teachers—the online survey will be filled out before the semi-structured interview with the researcher, (c) one online survey with students’ parents (d) video-recordings of students’ practice sessions, (e) video-recordings of students’ piano lessons, (e) students’ weekly text messages regarding their practice experience, and (g) investigator memos. The investigator will email students, parents, and teachers an online survey to be filled out. These online surveys will aim to understand students’ musical background and context from three different perspectives: students, piano teachers, and parents. After all surveys are completed, the researcher will conduct a students’ and a teachers’ semi-structured interview. Over a period of six weeks, the researcher will ask (a) students to video-record all weekly practice sessions, (b) students to text the researcher daily/weekly written or audio-recorded reflections about their practice sessions that include but are not limited to (1) pictures of music passages that caught their attention while practicing or that made them feel frustrated, (2) recurrent thoughts related with goals, (3) experienced feelings and/or emotions while practicing, and (c) teachers to video-record participants’ applied lesson. At the end of every week, each student and teacher will send the investigator a link to access the weekly video-recordings. These videos will be uploaded in the participants’ preferred platform. Reminders will be sent by the investigator to both
teachers and students.

2. Risks: There are no known risks.

3. Benefits: Participants will have the opportunity to examine their level of interest development in instrumental practice which will students and teachers to understand better their music learning process and to reflect on strategies that might motivate them to practice.

4. Investigators: The following investigators are available for questions on M-F, 8:00 a.m. - 4:30 p.m.; Dr. Pamela Pike, Music Dept., LSU, (225) 578-3261 and Carla Salas-Ruiz, 3rd year Ph. D student LSU, (225)-939-6488.

5. Performance Site: Participants’ home, participant’s piano studio.

6. Number of subjects: 50

7. Inclusion Criteria: Phase one (1) adolescent piano students [ages 13-16 years old]. Phase two (1) two students—ages 13 to 16 have been identified by the researcher as in the triggered-situational interest development phase, and two students identified by the researcher in the maintained-situational interest development phase. To participate in this study, you must meet the requirements of both the inclusion and exclusion criteria.

8. Exclusion Criteria: Adolescents who do not meet the age requirements or whose parents refused to participate in the research study.

9. Right to Refuse: Participation is voluntary, and a child will become part of the study only if both child and parent agree to the child's participation. At any time, either the participant may withdraw from the study or the participant’s parent may withdraw the participant from the study without penalty or loss of any benefit to which they might otherwise be entitled.

10. Privacy: Results of the study may be published, but no names or identifying information will be included for publication. Subject identity will remain confidential unless disclosure is required by law.

11. Financial Information: There is no cost for participation in the study, nor is there any compensation to the participants for participation.

12. Signatures: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigator. If I have questions about subjects' rights or other concerns, I can contact Alex Cohen, Chairman, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/research. I will allow my child to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.
13. Teacher's Signature: __________________________ Date: ________________
Appendix C. Parental Consent Form

1. Study Title: A multiple case study on adolescent piano students: examining motivation through the lens of interest development. The purpose of this research project is to examine, through an in-depth exploration, adolescent piano students’ motivation to practice through the lens of interest development. The study will be conducted in two phases.

During the first phase of the study (background preparation), the investigator will contact via email piano teachers in the Baton Rouge area. Those piano teachers who agree to participate will sign a consent form and will ask their students’ parents if they would like to participate in the research study. Once a list of parents is gathered by the piano teachers, they will email it to the investigator. The investigator will contact participants’ parents through email or text message if preferred. The researcher will attach the (1) “Interest Development Scale” as a Qualtrics survey (Boeder et al., 2021); (2) consent form and (3) child assent form. Participants will be asked to complete the scale as a Qualtrics Survey within a two-weeks period. The investigator will request in advance to the piano teachers a written profile of each participant regarding their views on each student’s motivation and interest to practice. The piano teachers may ask for further clarification to the investigators. It is important to clarify that not all participants from phase one will continue to phase two of the study. If selected for phase two, the researcher will notify the participants. The participants can decide to participate in phase one, but they can opt out from phase two.

On phase two of the study, the investigator will collect data through nine different methods: (a) one online survey and one semi-structured interview with students—both the semi-structured interview and the online survey will be conducted at the beginning of the research, (b) one online survey and one semi-structured interview with students’ teachers—the online survey will be filled out before the semi-structured interview with the researcher, (c) one online survey with students’ parents (d) video-recordings of students’ practice sessions, (e) video-recordings of students’ piano lessons, (e) students’ weekly text messages regarding their practice experience, and (g) investigator memos. The investigator will email students, parents, and teachers an online survey to be filled out. These online surveys will aim to understand students’ musical background and context from three different perspectives: students, piano teachers, and parents. After all surveys are completed, the researcher will conduct a students’ and a teachers’ semi-structured interview. Over a period of six weeks, the researcher will ask (a) students to video-record all weekly practice sessions, (b) students to text the researcher daily/weekly written or audio-recorded reflections about their practice sessions that include but are not limited to (1) pictures of music passages that caught their attention while practicing or that made them feel frustrated, (2) recurrent thoughts related with goals, (3) experienced feelings and/or emotions while practicing, and (c) teachers to video-record participants’ applied lesson. At the end of every week, each student and teacher will send the investigator a link to access the weekly video-recordings. These videos will be uploaded in the participants’ preferred platform. Reminders will be sent by the investigator to both teachers and students.
2. Risks: There are no known risks.

3. Benefits: Participants will have the opportunity to examine their level of interest development in instrumental practice which will students and teachers to understand better their music learning process and to reflect on strategies that might motivate them to practice.

4. Investigators: The following investigators are available for questions on M-F, 8:00 a.m. - 4:30 p.m.; Dr. Pamela Pike, Music Dept., LSU, (225) 578-3261 and Carla Salas-Ruiz, 3rd year Ph. D student LSU, (225)-939-6488.

5. Performance Site: Participants’ home, participant’s piano studio.

6. Number of subjects: 50

7. Inclusion Criteria: Phase one (1) adolescent piano students [ages 13-16 years old]. Phase two (1) two students—ages 13 to 16 have been identified by the researcher as in the triggered-situational interest development phase, and two students identified by the researcher in the maintained-situational interest development phase. To participate in this study, you must meet the requirements of both the inclusion and exclusion criteria.

8. Exclusion Criteria: Adolescents who do not meet the age requirements or whose parents refused to participate in the research study.

9. Right to Refuse: Participation is voluntary, and a child will become part of the study only if both child and parent agree to the child's participation. At any time, either the participant may withdraw from the study or the participant’s parent may withdraw the participant from the study without penalty or loss of any benefit to which they might otherwise be entitled.

10. Privacy: Results of the study may be published, but no names or identifying information will be included for publication. Subject identity will remain confidential unless disclosure is required by law.

11. Financial Information: There is no cost for participation in the study, nor is there any compensation to the participants for participation.

12. If I have questions about subjects' rights or other concerns, I can contact Alex Cohen, Chairman, Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/research. I will allow my child to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

13. Parent's Signature: ___________________________ Date: ____________________

The parent/guardian has indicated to me that he/she is unable to read. I certify that I have
read this consent form to the parent/guardian and explained that by completing the
signature line above he/she has given permission for the child to participate in the study.

Signature of Reader: __________________________ Date: __________________________

Yes, I give permission________________________________________________________ Signature

No, I do not give permission___________________________________________________ Signature
Appendix D. Child Assent Form

I, ________________________________, agree to be in a study to examine motivation to practice through the lens of interest development. The study is structured in two phases. During phases one, I will complete a questionnaire regarding my interest in practicing piano. This questionnaire will be shared via a Qualtrics link. I will complete it over a period of one week. If chosen for phase two of the research, I will complete (1) one online survey, (2) one 45-min interview with the researcher, (3) video-record my lessons and practice sessions during a period of six weeks, (4) share weekly text messages with the researcher regarding thoughts on my practice sessions. Finally, I can decide to stop participating in the study at any time without problem.

Child's Signature: ____________________________ Age: _____ Date: __________

Witness* _________________________________ Date: __________

* (N.B. Witness must be present for the assent process, not just the signature by the minor.)
Appendix E. Interest Development Scale

The IDS (Boeder et al., 2020) was developed to measure an individual’s level of interest in any given activity. The IDS ($\alpha=.94$)\(^1\) contains 5 subscales: Information Seeking ($\alpha=.65$), Motivation to Reengage ($\alpha=.93$), Persistence ($\alpha=.91$), Self-Regulation ($\alpha=.68$), and Value ($\alpha=.84$). The scale is domain general, meaning any interest can be assessed with this scale. For each item, brackets indicate where a specific interest can be substituted. For interest, for those assessing one’s interest in exercise, item could be transformed from “I often have questions about [this interest]” to “I often have questions about exercising.” \(^6\)

<table>
<thead>
<tr>
<th>Please respond to the following statements by indicating the extent to which you agree with each statement:</th>
<th>Do Not Agree At All</th>
<th>Very Slightly Agree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Mostly Agree</th>
<th>Strongly Agree</th>
<th>Very Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information Seeking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often have questions about <em>piano</em></td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
<tr>
<td>I generate questions about <em>piano</em></td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
<tr>
<td>I enjoy exploring questions within <em>piano</em></td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
<tr>
<td>I want to know more about <em>piano</em></td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
</tbody>
</table>

(table cont’d.)

---

<table>
<thead>
<tr>
<th>Motivation to Reengage</th>
<th>1. I seek out opportunities to engage in <em>piano</em></th>
<th>□ 1</th>
<th>□ 2</th>
<th>□ 3</th>
<th>□ 4</th>
<th>□ 5</th>
<th>□ 6</th>
<th>□ 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. I see myself engaging with <em>piano</em> for a long time to come</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>3. I look forward to the next time I’ll be able to engage with <em>piano</em></td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>4. I try to schedule my time so that I can engage with <em>piano</em></td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>5. I become more interested the more I engage with <em>piano</em></td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td>Persistence</td>
<td>6. I find the resources I need to continue to engage in [this interest]</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>7. When I set goals related to <em>piano</em>, I stick to them</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>8. I am not easily distracted when I engage in <em>piano</em></td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td>Self-Regulation</td>
<td>9. I pursue <em>piano</em> for my own reasons</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>10. I am able to guide my own learning about <em>piano</em></td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>11. I pursue <em>piano</em> even though no one makes me do it</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
<tr>
<td></td>
<td>12. I pursue <em>piano</em> on my own time</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
<td>□ 6</td>
<td>□ 7</td>
</tr>
</tbody>
</table>

(table cont’d.)
### Value

<table>
<thead>
<tr>
<th>Piano has value to me</th>
<th>□1</th>
<th>□2</th>
<th>□3</th>
<th>□4</th>
<th>□5</th>
<th>□6</th>
<th>□7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Piano is meaningful to me</td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
<tr>
<td>2. Piano is an important interest to me</td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
<tr>
<td>3. I have respect for piano</td>
<td>□1</td>
<td>□2</td>
<td>□3</td>
<td>□4</td>
<td>□5</td>
<td>□6</td>
<td>□7</td>
</tr>
</tbody>
</table>

### Scoring Subscales and Full Scale

Information Seeking: Sum and average items 1-4

Motivation to Reengage: Sum and average items 5-9

Persistence: Sum and average items 10-12

Self-Regulation: Sum and average items 13-16

Value: Sum and average items 17-20

Total Individual Interest: Sum the average-composited subscales and then divide by 5. 

\[
\text{Total Individual Interest} = \left(\frac{\text{IS-composite} + \text{MR-composite} + \text{P-composite} + \text{SR-composite} + \text{V-composite}}{5}\right)
\]

This method is done to not overweight factors with more items.

### Open-ended questions:

1. Would you share with me why you engage in piano at the rate you previously indicated?
2. Would you elaborate on why you think about piano at the rate you indicated?
3. Would you share with me why you learn new things about piano as frequently as you indicated?
4. Would you share with me why your piano practice is as important as you indicated?
5. Would you share with me why you set goals in piano at the frequency you indicated?
6. Would you share with me why you put in the amount of effort you indicated in learning about piano?
7. Would you share with me how your understanding of piano has deepened to the extent you indicated?
8. Would you share with me why you think this is the best depiction of the relationship between piano and yourself?
Appendix F. Student Online Survey

1. How old were you when starting lessons?
2. What is playing piano to you?
3. Why do you keep participating in piano?
4. What music are you studying right now?
5. Would choose a piece and describe me what is the most interesting about it?
6. How long do you expect to be able to play the selected piece?
7. What are some of the difficult aspects of learning the selected piece?
8. Let’s talk about your lessons: How do you usually prepare for your weekly lesson?
9. How do you usually prepare for a recital?
10. What are some challenges that you have experienced in piano? How did you approach them?
11. Which activities during your piano lesson makes you feel more engaged?
12. Which activities during your piano lesson makes you experience less attention?
13. Does a recital or a competition make you put more effort to work on piano?
14. Do you think that being in piano allows you to have more friends? Do you tend to compare with them?
15. How confident are you in your ability to learn about piano?
16. Do you usually talk with your family about piano?
17. In what ways do you feel supported by your parents?
18. In what ways do you feel supported by your teachers?
19. In what ways do you feel supported by your peers?
20. Is there something that you would like to share with me before we meet?
Appendix G. Student Semi-Structured Interview

Let us talk about your musician background

1. You’d say, you’ve been playing piano for “x” years, have you always preferred the piano over any other instrument? If yes, can you explain why? If no, is there another instrument that you would like to play?

Let us talk about general aspects of your musical learning experience

2. What are some weekly goals that you would like to pursue in terms of your piano lesson?
3. What are some weekly goals that you would like to pursue in terms of your repertoire?
4. What are some weekly goals that you would like to pursue in terms of recitals/competitions?
5. What would you describe as an interesting piano lesson?
   a. What does it make the lesson interesting?
   b. What were you playing?
   c. How was your teacher instructing you?
6. What would you describe as a not interesting piano lesson?
   a. What does it make the lesson not interesting?
   b. What were you playing?
   c. How was your teacher instructing you?
7. What are some experienced emotions when your teacher provide feedback? Have you experienced a moment in which your teacher hurt your feelings in anyway?
8. How do you feel when your teacher assigned you a new piece repertoire?
9. How do you feel when a recital is approaching?
10. Have you identified meaningful connections between piano and your day-to day life activities?

Let us talk about usual teacher and individual actions experienced when learning piano

11. What are some of your teacher actions that make you feel in control/experience autonomy over your musical learning process?
12. What are some of your individual actions that make you feel in control/ experience autonomy over your musical learning process?
13. What are some of your teacher actions that make you feel competent over your musical learning process?
14. What are some of your individual actions that make you feel competent over your musical learning process?
15. What are some of your teacher actions that make you experience belonging over your musical learning process?
16. What are some of your individual actions that make you experience belonging over your musical learning process?
Let us talk about your piano practice

17. Is piano practice as important (or more important) as any of your other activities?
18. Do you like to practice?
19. How would you describe a successful practice session?
20. Do you usually organize your practice sessions? If yes, how so?
21. How would you check if you are making progress on your music?
22. On your survey, you said that you are studying “x.” Would you elaborate more on used practice strategies, selected activities to overcome the challenges and the reasoning of it?
23. Would you describe your usual reasoning and activities that you do when practicing piano?
24. Is there anything that you would like to add that we haven’t discussed?
Appendix H. Teacher Online Survey

1. What do you think is your role when working with adolescent piano students?
2. How does teaching adolescents differ from teaching other age populations?
3. What are some of the effective instructional methods (instructional methods, repertoire selection, activities) identified by you when teaching adolescents piano students?
4. What are some of the least effective instructional methods (instructional methods, repertoire selection, activities) identified by you when teaching adolescents piano students?
5. What are some observable behaviors that adolescent music students exhibit when learning a new piece?
6. What are some observable behaviors that adolescent music students exhibit when working during lessons?
7. What are observable behaviors that adolescent music students exhibit when preparing for a recital and/or competition?
8. In your experience, what is the usual parent role/involvement when teaching adolescent piano students?
Appendix I. Teacher Semi-Structured Interview

Let us talk about your student

1. How long have you taught her/him?
2. How would you describe your relationship with her/him?
3. How would you describe your relationship with her/his parents?

Let us talk about a typical lesson with your student

4. What does it look like?
5. Does he/she usually follow instructions?
6. What does it guide you when choosing repertoire for her/him?
7. What are some activities that she/he seems to enjoy?
8. What are some activities that she/he seems to dislike?
9. What are the main challenges of working with her/him?
10. Do you usually adjust your teaching when working with her/him?
11. How often does she/he seem to exhibit interest during the applied lesson? What did make you think so?
12. How often does she/he ask you for new repertoire?
13. What does weekly lessons look like when she/he is preparing for a competition and/or recital? Do they differ in any way?
14. Is there anything you may want to share that I may not have asked or talked about?
Appendix J. Parent Online Survey

1. Did she/he ask you for piano lessons or was it your idea?
2. How long have she/he have been enrolled in piano?
3. Have your daughter/son expressed a desire to keep playing piano for a long-term period?
4. In what ways do you think that taking piano is valuable for him/her? Do you usually help her/him to practice? In what ways do you assist him/her?
5. What do you think that he/she enjoy about playing piano?
6. What do you think that he/she dislikes about playing piano?
7. What is your role his/her piano lessons?
8. How often does she/he ask you to go to other musicians’ recitals, to buy new music or to buy music-related books?
9. Is there anything that you would like to add that we haven’t discussed?
Appendix K. Observation Protocol

I will engage observations as nonparticipant. I will not be involved in any musical activity; however, teacher and student will be aware of the presence of a personal device recording the music lesson. To understand student’s context and teacher’s approach, I aim to record students’ applied lesson during a period of six weeks. I will conduct interviews with both the piano teacher and students. Each recording will be for the duration of the piano lesson, and I will use the information to triangulate findings from the study.

**Guiding questions:**

How is the teacher instructing the student? Does the student seem to exhibit interest during the lesson? What are some discussed goals during the lesson? What behaviors are exhibiting the student? Did I notice something that call my attention in terms of general musical behaviors, psychological needs, self-regulation behavior or interest development?

Descriptive notes (factual chronology of activities and interactions during the observation) Reflective notes (interpretations, judgments, and extemporaneous impressions of activities and interactions during the observation) Summary memo (brief account connecting the descriptive and reflective portions of the observation with the guiding questions, making a preliminary determination of where things stand "so far."
Appendix L. Documents Requested Protocol

The purpose of these practice video recordings and practice reflections is to explore what you think, experience, and feel each practice session over a period of six weeks. Also, I would like to explore what are some activities that you do during each practice session. At the end of each session, you will be asked to reflect on recurrent thoughts/feelings that you had during the practice session and complete an online journal. If you choose, the short reflection can be shared in the form of an audio, video recording, or text message. These reflections will be kept in a One Drive folder that will belong to you, and that only I will have access to.

Thoughts and feelings being experienced might include sense of competence when practicing, if you finished all your goals, if you experienced a sense of personal fulfillment or not. Other aspects to share might be the description of your favorite part of the practice session, description of what you dislike the most about the practice session, description of your favorite practice strategy from the practice session? Finally, if you want, you are welcome to share pictures of something that caught your attention when practicing and that you found interesting such as specific passages from the music score.
Appendix M. Follow-Up Questions for Further Exploration During Interviews

General musical behaviors

1. What are some goals (short and long term) that students want to pursue in terms of their lesson preparation, repertoire, recital and/or competitions?
2. How do students react to teacher’s feedback?
3. How do adolescent piano music students describe an interesting piano lesson?
4. How do adolescent piano music students describe a not interesting piano lesson?
5. What are some emotions reported by adolescent music students when receiving their teacher’s feedback?
6. What are some emotions reported by adolescent music students when learning a new piece?
7. What are some emotions reported by adolescent music students when preparing for a lesson?
8. What are some emotions reported by adolescent music students when preparing for a recital?
9. If any, what are some meaningful connections students identify between day-to-day life and piano?
10. In what ways do adolescent piano students feel supported by their parents?
11. In what ways do adolescent piano students feel supported by their teachers?
12. In what ways do adolescent piano students feel supported by their peers?
13. What are some actions reported by adolescent music students when facing difficulty in piano?
14. What are some challenges reported by adolescent music students when learning piano?

Psychological Needs

1. What are some individual actions students identify as leading them to experience control over their musical learning process?
2. What are some teacher actions students identify as leading them to experience control over their musical learning process?
3. What are some individual actions students identify as leading them to experience competence over their own musical learning process?
4. What are some teacher actions students identify as leading them to experience competence over their own musical learning process?
5. What are some individual actions students identify as leading them to experience belonging to their peers?
6. What are some teacher actions students identify as leading them to experience belonging to them?

Self-regulation

1. To what extend do adolescent piano students exhibit self-regulation behaviors in the triggered and maintained situational phases of interest development?
2. What are some actions reported by adolescent music students when practicing at home?
3. What are some actions reported by adolescent music students when preparing for a lesson?
4. What are some observable general music behaviors that adolescent music students exhibit outside of the lesson that show up during the lesson?

**Role of teachers**

1. What are some of the effective and least effective instructional methods (instructional strategies, repertoire selection) identified by teachers when teaching adolescent piano students in the situational/maintained interest development phase?
2. What are some observable general music behaviors that adolescent music students exhibit when working during a lesson?
3. What are some observable behaviors that adolescent music students exhibit when learning a new piece?
4. What are some observable behaviors that adolescent music students exhibit when preparing for a recital and/or competition?
5. What are some actions reported by teachers when adolescent piano students face difficulty in piano during the lesson?
6. What is the perceived role of the teachers when teaching adolescent piano students?
7. How does teaching adolescents differ in teaching other age populations?
8. What is the role of the parents when teaching adolescent piano students?

**Role of parents**

1. How are the parents involved in adolescent piano students the learning process?
2. What are some observable behaviors exhibited by adolescent music students when learning a new piece?
3. What are some observable behaviors exhibited by adolescent music students when preparing for a lesson?
4. What are some observable behaviors exhibited by adolescent music students when preparing for a recital?
5. What actions are taken by parents when adolescent face difficulty in their piano lessons?
6. How would parents describe adolescent music students’ level of interest in piano? Have they noticed changes/fluctuations over time? How so?
List of References


World Health Organization. (2021, September 22). *Adolescent’s health*. [https://www.who.int/health-topics/adolescent-health#tab=tab_1](https://www.who.int/health-topics/adolescent-health#tab=tab_1)


Vita

Carla Salas-Ruiz is originally from Costa Rica. Her research interests focus on healthy musicianship, motivation, and interest development among intermediate pianists. In 2021, Carla was awarded LSU Alumni Graduate Teaching Assistant of the Year. Carla is a member of the LSU Translational Research in Music Group, the LSU Student Diversity & Inclusion Organization, and the Pi Kappa Lambda Music Honors Society. Carla has presented her research in both national and local conferences such as LMTA, LMEA, MTNA, SMTE, and NAfME. Carla is also a member of the studio of Dr. Willis Delony. Currently, Carla teaches group and private piano lessons for non-major keyboard undergraduate students from LSU.