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Parting Ways With Piano Lessons: Comparing Motivation Between Continuing and Dropout Piano Students

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ABSTRACT

Piano teachers believe that dropping out of piano lessons before reaching a moderate mastery of the instrument is a common problem among students. We used self-determination theory (Deci & Ryan, 1985) to measure the motivation of dropout students and to discover if amotivation and controlled motivation are related to attrition from private piano lessons. Using the Survey of Musical Interests, 55 former piano students who had quit lessons completed a questionnaire with Likert scale, multiple choice, and open-ended questions, and their parents filled out a complementary questionnaire. The dropout students took lessons for approximately 5 years and stopped lessons in the preteen years, which supports a common experience of studio teachers. These participants were compared to 260 students who were still involved with piano lessons. Beyond the predicted findings that dropout students would demonstrate less autonomous motivation and stronger amotivation, other interesting, exploratory findings arose. There were significant differences between the two groups' types of motivation, and also differences regarding the age at which lessons began, ethnicity, practice amounts, parental involvement, and rewards for achievement. Recommendations are made for future research and for student retention strategies.

INTRODUCTION

It seems that every year, children all over the world begin piano lessons only to give up a short time later. Despite a high attrition rate from piano lessons, relatively little is known

about students who drop out (Costa-Giomi, 2004; Duke, Flowers, & Wolfe, 1997). Teachers believe that many students who begin piano lessons have insufficient motivation to persist (Cheng & Southcott, 2016). However, in terms of scholarly work, very few researchers have investigated the connection between motivation and music learning (Evans, 2016), particularly in private studios. The literature on music student attrition in orchestral and school band settings (Frakes, 1984; Hallam, 1998; Klinedinst, 1991) provides a good base for the topic of piano student dropouts, but more study is needed specific to private piano lessons. Compared to classroom music education, applied music study has received far less systematic study (Williams, 2002). Private piano lessons are very different than school band for reasons such as difficult solo repertoire, a close teacher relationship, and the lack of a social group component. Since it seems that many piano students begin lessons only to drop out within a few years, we took up the phenomenon of attrition as a research topic. In this article, we examine the motivation of both dropout and continuing piano students from the perspective of self-determination theory (SDT); investigate related, exploratory reasons that may have negatively impacted motivation; and make recommendations that may ultimately lead to greater motivation and retention.

DEFINITION AND STATISTICS

It is difficult to find a clear definition of a piano student dropout. Govel's (2004) study mentions students stopping lessons before "reaching their full potential" (p. 12), but dropout is not further clarified and this definition is too vague to be used in a research context. Graziano (1991) did not offer a definition and suggested that teachers should discontinue using the term "dropout." Other studies have defined dropout as those students who ceased instruction over the course of the research study period, regardless of age or ability (Costa-Giomi, 2004; Pitts, Davidson, & McPherson, 2000). Daniel and Bowden (2013) discuss a high dropout rate at the intermediate stage, but they do not provide a clear point where leaving lessons would no longer be considered dropping out.

For the purposes of this research, a dropout was defined as a student who failed to reach a moderate mastery of the piano and—more concretely—a Level 8 standard set by the Canadian conservatory systems (Royal Conservatory of Music, 2008). At this level, students are introduced to simple Baroque counterpoint, short Classical sonata movements, and smaller preludes and dances of the Romantic era. Failing to reach this level means students lack the technique and interpretation necessary for playing the piano and that they would have an incomplete understanding of composers, theory, and history in the Western art music tradition. Whereas school dropouts are those ceasing instruction before Grade 12, and a Level 8 piano certificate may be transferred for Grade 12 high school credit (Canadian Federation of Music Teachers' Associations, 2017), leaving lessons before reaching this level misses the equivalent endpoint.

Many piano students quit lessons before mastering the skill of playing the piano, but the overall percentage of dropout is unclear. Earlier research suggests that there are

two main points in a timeline at which music students leave lessons: after approximately 2 years (Flowers, Sasaki, & Costa-Giomi, 2005; Govel, 2004; Pitts et al., 2000) or in the preteen years (Corenblum & Marshall, 1998; Dyal, 1991; Fredricks et al., 2002; Lawrence & Dachinger, 1964). Sloboda and Howe (1991) estimated that a substantial portion of students who begin piano lessons give up 18 months later and that only a minority of the original beginners will achieve high levels of musical competence; however, they admit that there is a notable lack of evidence to support this point. One of the only longitudinal studies done with classroom music students followed up with participants 10 years after they had started music lessons to find that 87% of students no longer played their instruments (Evans, McPherson, & Davidson, 2013).

ATTRITION IN MUSIC EDUCATION RESEARCH

There is a long-standing body of literature that has examined students' dropout or attrition rate in school band and orchestra programs. Much of this research has focused on the predictors or the external reasons for leaving music programs. Socioeconomic status (Corenblum & Marshall, 1998; McCarthy, 1980), low academic achievement (Frakes, 1984; Klinedinst, 1991; Young, 1971), lack of musical ability (Mawbey, 1973), and scheduling problems (Gamin, 2005) have been shown to predict music student retention or dropout in school band and orchestra students. Approval-seeking students who required frequent positive feedback and validation from teachers despite low musical achievement were likely to drop out (Flowers et al., 2005). Piano students who had distant, demanding, or disinterested parents also typically quit (Chardos-Camilli, 2010; Govel, 2004). Students without a practice commitment in place before beginning lessons, or solidly developed within the first year of lessons, were predicted to drop out (Costa-Giomi, 2004; Dyal, 1991; Graziano, 1991; Govel, 2004; McPherson & Davidson, 2002; Van Cleave, 2010). Disliking the repertoire (Williams, 2002), poor teacher relationship (Frakes, 1984), interest in sports or other activities (Govel, 2004), and lack of time for continued commitment (Fredricks et al., 2002) have all been related to attrition. Finally, students who did not acknowledge a long-term commitment to playing their instrument were likely to drop out (McPherson, 2000). There seem to be as many reasons as there are studies regarding the causes of attrition. The main component missing from many of these studies is a clear theoretical framework and a deeper assessment of *why* these predictors impacted attrition rates or *how* these predictors originally came to be. SDT may help explain these *how* and *why* questions as it offers broader and more applicable reasons about the social environmental impact on a person's motivation and their psychological needs.

SDT

We have adopted SDT as our theoretical framework for this study (Deci & Ryan, 2000; Deci & Ryan, 2008; Ryan & Deci, 2000) because of its use in recent research concern-

ing motivation and music learning (Comeau, Huta & Liu, 2015; Evans, 2015; Evans et al., 2013; Küpers, van Dijk, McPherson, & van Geert, 2014; Renwick, 2008; Renwick & McPherson, 2009; Schatt, 2018). There are other theories of motivation that have been used in music education literature, such as expectancy-value theory (McPherson & McCormick, 1999; Wigfield et al., 1997), self-efficacy theory (McCormick, 2003; McPherson & McCormick, 2006), and attribution theory (Asmus, 1986); however it seemed that SDT was best suited to research on piano student attrition. This theory of motivation had never been used in the context of piano student dropouts and was chosen to describe the rich and complex process of motivation. With SDT, researchers focus on the type, rather than the amount, of motivation, while associating autonomous (intrinsic) motivation, controlled (extrinsic) motivation, and amotivation (absence of motivation) with one's overall performance and well-being outcomes (Deci & Ryan, 2008). SDT research contextualizes the social conditions that promote versus extinguish these types of motivation. One of the main concepts within this theory is that humans are motivated toward activities that satisfy three basic psychological needs—competence, relatedness, and autonomy—which allow activities to be internalized, while they move away from activities in which they feel those needs are undermined. Deci and Ryan (2000, 2008) have found that the degree to which the three basic psychological needs are supported versus thwarted affect both the type and strength of motivation.

The theorists developed the self-determination continuum, which shows types of motivation with their regulatory styles, loci of causality, and corresponding processes (Ryan & Deci, 2000). This scale is arranged from left to right in terms of the degree to which motivation originates from within (see Figure 1). At the far left side of the scale, *amotivation* is the state in which a person does not value an activity or does not expect it to provide a beneficial outcome. In contrast, at the far right side of the spectrum is *intrinsic* or *autonomous* motivation: behavior is self-directed, congruent with one's values, and includes the relevancy and competency of self-determination. In the center, *extrinsic* or *controlled* motivation covers the range between amotivation and autonomous motivation.

In SDT, Deci and Ryan propose that extrinsic or controlled motivation can vary greatly in its relative autonomy based on contextual factors. *Externally regulated* behaviors are least autonomous; are typically performed to satisfy an external demand, such as avoiding punishment or gaining a reward; and are perceived as being controlled by others. *Introjected regulation* results in behavior that seeks gains of ego enhancement or avoidance of personal guilt and anxiety. *Identified regulation* reflects a conscious valuing of a goal or regulation, and although behaviors may be externally encouraged, they draw out a personal desire for autonomous activity. Finally, *integrated regulation* occurs when extrinsic regulations are fully congruent with one's self and personal values but behaviors are still done to attain separable outcomes. Ryan and Deci (2000) clarify that this is not a developmental spectrum in which behaviors migrate from controlled to autonomous. Rather, behaviors and skills enter at any part of the scale and migrate based on the

	Not Self-Determined		◄———		Self-Determined	
Motivation	Amotivation		Controlled			Autonomous
Regulation	Nonregulation	External	Introjected	Identified	Integrated	Intrinsic
Where does behavior originate?	Impersonal	Externally	Somewhat external	Somewhat internal	Internally	Internally
What does this look like?	Nonvaluing, inaction, lack of control	External rewards and punishments	Ego-involvement, self-control	Personal importance, conscious valuing	Congruence with self, awareness	Interest, enjoyment, satisfaction
Example:	"I'm not practicing that because I just don't care about it."	"Practicing this 10 times will earn you $1."	"My favorite part of recitals is when the audience claps for me."	"I know I should play my scales because they're good for me."	"I like performing at the seniors' home; it makes me feel good!"	"I would play the piano all day if I could. I just love this."

Figure 1. The SDT continuum showing types of motivation (for original, see Ryan & Deci, 2000).

social conditions that support or hinder the three psychological needs of competency, relatedness, and autonomy. If behaviors can be internalized over time, this appears to produce "behavioral effectiveness, greater volitional persistence, enhanced subjective wellbeing, and better assimilation of the individual within his or her social group" (Ryan & Deci, 2000, p. 73). Given the many benefits of internalization, educators can learn from this theory to promote autonomous integration because of its association with better scholastic performance (Miserandino, 1996) and lower dropout rates (Vallerand & Bissonnette, 1992).

SDT IN MUSIC EDUCATION RESEARCH

There are two important studies that have investigated music student attrition using SDT. In a longitudinal study, Evans et al. (2013) surveyed 157 beginning instrumentalists and evaluated the extent to which psychological needs provided an explanation for why the children and adolescents ceased playing their musical instruments. They suggested that unless a student is motivated to play for intrinsic reasons, and unless the environment is supportive of competency, autonomy, and relatedness, there is a high chance of dropout. In a series of case studies, Pitts et al. (2000) investigated the motivations of young instrumentalists in their first 20 months of learning. The children who showed strong motivation were those who practiced with more reflection, conscientiousness, and self-criticism. Highly motivated students showed a level of commitment that is indicative of a strong personal interest in learning an instrument, even when this is supported by external rewards or sanctions.

Other research in music education has increasingly taken up SDT in recent years to study successful students, rather than dropouts (Schatt, 2018). Evans (2015) provided a conceptual overview of the theory and interpreted its points in the context of music lessons. He challenged many common teaching practices, such as using rewards and punishments to instigate practice, inflating or deflating a child's ego through praise or shame, teaching in a controlling way, and encouraging damaging levels of competitiveness, suggesting that they "may be at best ineffective strategies, and at worst, deeply harmful to [students'] music motivation and their wellbeing" (p. 78). In a phenomenological case study, Cheng and Southcott (2016) reference SDT to suggest that private piano teachers must seek to foster in their students the three psychological needs of competence, relatedness, and autonomy, and even if initially prompted by external motivation strategies, students' intrinsic motivation will improve over time. Comeau and Huta (2015) examined the role of parents in piano lessons using SDT to find that "parental involvement was positively related to the child outcomes, relating to autonomous motivation, interest in performance and creativity, feeling of competence, time spent practising, and/or exam performance" (p. 47). Finally, Küpers et al. (2014) used a mixed-methods approach and SDT to find that autonomy was not a static concept but is instead negotiated between each student and teacher in effective private instrumental

lessons. Overall, the literature suggests that autonomous motivation is associated much more strongly with effective and successful learning while controlled or amotivated students often quit.

RESEARCH QUESTION AND HYPOTHESIS

SDT has never been used to study attrition in private piano lessons, and very little scholarly work in general has addressed piano student dropouts. We asked if a relationship could be found between certain types of motivation and dropping out of piano lessons. Studies have suggested that high levels of controlled motivation and low levels of autonomous motivation may accomplish short-term learning goals but contribute very little to long-term motivation, and this may eventually lead to dropping out (Evans et al., 2013; Pitts et al., 2000). We sought to investigate whether former piano students demonstrated different types of motivation than continuing students, and the reasons for this difference.

Two questions guided our study:

1. Is there a relationship between certain types of motivation and student attrition from piano lessons?
2. Does this differ from the types of motivation displayed by continuing students?

These questions guided us to our hypothesis: We expect to find amotivation and controlled motivation in students who have dropped out before reaching a moderate mastery of the piano, whereas continuing students will likely demonstrate stronger autonomous motivation.

Based on topics raised in the literature, we also wondered if factors such as student age, gender, ethnicity, instrument switching, practice amounts, parental involvement, choice of music, or rewards would impact motivation. Since so little research had been conducted on these topics in the context of private piano lessons, we were not able to confidently hypothesize them, and these became exploratory elements in our study.

METHOD

Participants

Dropout participants and their parents were recruited by contacting their former piano teachers who were members of professional music teachers' associations in Canada. The researchers had access to membership lists based on their own personal involvement within the associations. These teachers primarily taught individual, reading-based music lessons from their private home studios. Teachers were asked to contact former students, distribute invitation letters, and gain permission to forward the parents' contact information to the researcher. Teachers had no formal role in this study, except to connect the researchers with eligible participants. In total, 210 teachers were contacted

individually by email, and 33 were able to connect the researcher with eligible participants. Continuing students were recruited in a similar way, where 108 teachers provided participants. Six teachers had both continuing and dropout students in this study. All student participants had taken formal piano lessons with a professional teacher for at least one academic year.

Dropout participants consisted of 55 former piano students and their parents. There were 34 female and 21 male students, of whom 47 were primarily Canadian Caucasian and 8 were of Canadian Asian heritage. Ages ranged between 8 and 17.5 years old, with an average of 13.1 years old. Students in this group began lessons at 6.96 years old and took lessons for an average of 5 years until approximately age 12. Dropout students did not reach a Level 8 playing standard, and their piano lessons ended an average of 1 year prior to taking the survey. The dropout group was compared with a group of students still taking piano lessons and planning to continue. There were 260 participants in the continuing group, of which 161 were female and 99 were male. In this group, 189 were primarily Canadian Caucasian and 71 were of Canadian Asian heritage. Participants ranged in age between 6 and 20 years old with an average of 10.9 years old. Students in this group began lessons, on average, at 6.47 years old and had taken lessons for 4.35 years at the time they completed the survey.

Procedure

This study used the Survey of Musical Interests (Desrochers, Comeau, Jardaneh, & Green-Demers, 2006) developed in accordance with SDT (Deci & Ryan, 1985) by researchers in the Piano Pedagogy Research Laboratory at the University of Ottawa. It was chosen for this study because of its use in previous music education research (Comeau et al., 2015; Desrochers et al. 2006) and its high validity and reliability (Comeau, Huta, Lu, & Swirp, 2019). This study was approved by the University of Ottawa Research Ethics Board prior to data collection. All participants were assured of strict confidentiality and that there were no right or wrong answers. They were encouraged to express their own views freely. The questionnaires were always conducted in person, with a traditional pencil and paper survey that took 30 to 40 minutes. The researchers met with students and parents primarily at their homes, although some families chose to meet in public spaces such as a library or coffee shop. Children and parents always answered the questionnaire in separate spaces so that one could not influence the other's answers.

Using Likert-type scale measurement, all children answered 67 questions measuring five types of motivation. Participants filled out practice questions before the survey began to familiarize themselves with the Likert-type scale system. For very young students with developing reading ability, we read the questions aloud for the entire survey as participants circled their choices. Dropout students also completed an open-ended response section regarding their reasons for leaving lessons (see Appendix).

Simultaneously, parents answered a separate survey with multiple choice and open-ended questions regarding the child's musical background, learning environment, and reasons their child stopped lessons. Demographic questions on the parent survey included student age, family ethnicity, and occupations. Other topics within the parent survey addressed practice amounts, skill level, music curriculum being studied, parental involvement in home practice, parental attendance during lessons, instrument quality, beliefs about musical ability, and other musical experiences outside of lessons. The parents also answered the same open-ended response section as students regarding reasons for leaving lessons. Much of this social environmental data has been presented elsewhere (Gerelus, Comeau, & Swirp, 2017).

The Survey of Musical Interests measured the types of motivation along the SDT spectrum. For the dropout students, Likert-type scale questions were rewritten in the past tense to represent their former experience. Questions addressed intrinsic motivation (e.g., "I learned to play the piano because I enjoyed learning new things about music"), identified/integrated motivation (e.g., "I learned to play the piano because I saw myself as a musician"), introjected motivation (e.g., "I learned to play the piano because I would be ashamed if I stopped playing"), extrinsic motivation (e.g., "I learned to play piano for longer than I wanted because I did not want my teacher to be upset with me if I stopped too soon"), and amotivation (e.g., "I learned to play piano but it was a waste of my time"). Throughout the questionnaire, statements were carefully composed to represent the three basic psychological needs of autonomy (e.g., "I learned to play the piano because my parents forced me to"), competency (e.g., "I learned to play the piano because I felt good when I played a piece really well"), and relatedness (e.g., "I learned to play the piano because my friends were taking piano lessons").

Questions were rated by participants from 1 (not at all like me) to 7 (perfectly like me). For simplicity of analysis, we combined intrinsic, identified, and integrated regulation into an autonomous motivation composite (comprised of eight questions with a Cronbach alpha coefficient of .90), introjected and extrinsic motivation into a controlled motivation composite (comprised of 15 questions with a Cronbach alpha coefficient of .92), and let amotivation stand separately (comprised of six questions with a Cronbach alpha coefficient of .84). There were 38 further questions that were deemed not statistically reliable enough to include in the analysis and were removed.

The data was manually entered into SPSS where statistical analyses were performed. For comparing experiment groups (continuing versus dropout students), the independent samples t-test was used for continuous data (e.g., practice times), and the Mann-Whitney U test was used for Likert-scale data (e.g., motivation levels). We used Spearman's rank-order correlation for examining the relationship between Likert-scale variables. Nonparametric tests were used for reasons summarized by Jamieson (2004). All p-values are two-tailed and considered significant below the 0.05 level. As previously mentioned, we added an open-ended response section where dropout students expressed details of their piano lessons and motivation in their own words (see Appendix). The

text data from the open-ended questions were grouped, analyzed into themes, and gave a deeper understanding to statistical tests. This method was based on content analysis that considers the frequency of certain words and strength of key concepts (Hamilton & Corbett-Whittier, 2013). Open-ended responses will be brought forward in the Discussion section to better interpret the statistics.

RESULTS

Results show that the continuing students had significantly higher levels of autonomous motivation, significantly higher levels of controlled motivation, and significantly lower levels of amotivation (see Table 1). The dropout students were exactly the inverse. Despite differing numbers of overall participants, the gender and age balance between the two groups were statistically similar. We found no significant difference in motivation between genders for dropout students (see Table 1). We also found that continuing students, on average, began lessons 6 months earlier than the dropout students, although this was not statistically significant.

There were notable differences regarding the ethnicities of the children: Results showed that there was a significant presence of parents with an East Asian background in the continuing group and parents with a Caucasian background in the dropout group (27% of continuing students had at least one East Asian parent, compared with 14% of dropout students; χ^2 [1, n = 315] = 3.935, p = .047). Canadian Asian continuing students (n = 71, Md = 5.00) seemed to have significantly higher autonomous motivation than the Canadian Asian dropout students (n = 8, Md = 3.06, U = 88.5, z = –3.18, p < .001). Specifically within the dropout group, we compared motivation between the 47 Canadian Caucasian students and eight Canadian Asian students to find no significant difference. Due to the small sample size of these tests, the findings will not be presented in detail here.

Within the dropout group, there was a subgroup of 18 students who wanted to play other instruments. We thought that those who wanted to switch to another instrument would show higher levels of autonomous motivation than those who stopped all music lessons. Students in the "switched instruments" group expressed interest but generally had not yet begun lessons with another instrument. The dropout students who wanted to switch instruments primarily wanted to play guitar, though some wanted to play school band instruments, such as clarinet, drums, and baritone, or string instruments, such as violin and cello, but the combined total of all other instruments was still less than guitar. We discovered that there were no statistically significant differences in motivation levels between those who were interested in switching to another instrument and those who dropped out altogether (see Table 1).

Continuing our exploratory work, we wondered if there was a correlation between motivation and age, practice time, parental involvement, and rewards (see Table 2). Age and motivation was tested by comparing the age at which the continuing students com-

Table 1
Comparison of Motivation Between Continuing and Dropout, Genders, and Switched Instruments or Quit Completely Using the Mann-Whitney U Test

Type of motivation	*n*	*Mdn*	*n*	*Mdn*	*U*	*z*	*p*
	Continuing		Dropout				
Autonomous	260	5.25	55	3.75	3,546	–5.88	< .001**
Controlled	260	3.00	55	2.31	5,275	–3.06	.002**
Amotivation	260	1.67	55	2.50	38,873	–3.63	< .001**
	Female dropouts		Male dropouts				
Autonomous	34	3.875	21	3.25	318	–0.68	.50
Controlled	34	2.32	21	2.20	300	–1.00	.32
Amotivation	34	2.58	21	2.33	334	–0.40	.69
	Switched instruments		Quit completely				
Autonomous	18	4.00	37	3.38	283	–0.91	.36
Controlled	18	1.73	37	2.60	244	–1.61	.11
Amotivation	18	2.25	37	2.67	297	–0.66	.51

Note. All scale ranges are from 1 to 7. Amotivation values were reversed (such that a higher value relates to a higher level of amotivation) and inversed (to normalize the data).
**$p < .01$

pleted the survey and the age at which the dropout students stopped lessons. There is a moderate correlation between age and autonomous motivation in the dropout group (see Table 2). Results from dropout students show that motivation among preteens was the lowest of all age groups, but the late-teenage students' motivation levels were generally higher than all previous age groups (see Figure 2). Autonomous motivation levels did not vary significantly with age in the continuing group. Practice time was calculated by using the sum of minutes per week a student practiced, rather than just the minutes per daily practice session. The results suggest that there is no relationship between practice time and motivation. We tested the extent to which parents attending lessons alongside their children might have an impact on motivation. We found there to be a moderate negative correlation between parent attendance at lessons and autonomous motivation with the dropout students and a weak negative correlation between parent attendance at lessons and controlled motivation within the continuing group. There were no significant correlations found between parental help with practice and student motivation. There was a stronger positive correlation between rewards for achievement and autonomous motivation in the dropout group as compared to the continuing group, albeit not statistically significant.

Practicing has been presented in the literature to be one of the strongest predictors that leads to successful or unsuccessful piano lessons (Costa-Giomi, 2004; Dyal, 1991; Graziano, 1991; Govel, 2004; McPherson & Davidson, 2002; Van Cleave, 2010). While it did not seem to impact motivation, the results are still worth highlighting. There was

Table 2
Spearman Correlations Between Motivation and Age, Practice Time, and Parental Involvement

Parameter	Autonomous	Controlled	Amotivation
Dropout group			
Age (at time of dropout)	.32*	–.02	–.24
Practice time (minutes per week)	.12	–.04	–.07
Parent sits in lesson	–.30*	–.05	.13
Parent helps with practice	–.10	–.03	.06
Rewards for piano achievements	.23	–.07	–.16
Continuing group			
Age (when survey completed)	–.13*	–.06	–.13*
Practice time (minutes per week)	.04	–.04	–.17*
Parent sits in lesson	.03	–.14*	–.07
Parent helps with practice	.08	.01	.13
Rewards for piano achievements	.02	.19	.08

Note. The last three parameters (parent sits in lesson, parent helps with practice, and rewards for piano achievements) were ranked on a 1 to 5 Likert scale: never, seldom, sometimes, often, always.
*$p < .05$

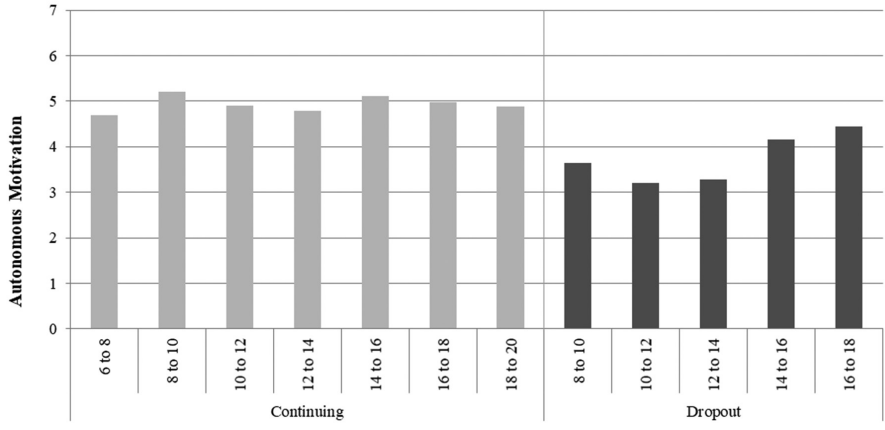

Figure 2. Autonomous motivation by age in continuing and dropout groups.

not a clear difference between minutes in each practice session, but there was a strong difference between days practiced per week (see Table 3). Results indicate that dropout students practiced about the same number of minutes per session as the continuing students—about 20 to 25 minutes for beginner and Level 1 and 25 to 30 minutes for Levels 2 to 4. The significant difference was discovered in the days of practice per week, where continuing beginner students practiced one more session per week than those at the same level who dropped out and continuing students in Levels 2 to 4 practiced almost two more sessions per week than the dropout students of the same level. To extrapolate further, we

Table 3
Comparison of Practice in Continuing and Dropout Students Using an Independent Samples T-Test

	Continuing		Dropout					
Conservatory level	*M*	*SD*	*M*	*SD*	*t*	*df*	*p*	*Cohen's d*
Days of practicing per week								
Beginner 1	4.63	1.38	3.43	1.65	2.706	44	.010**	0.82
Level 2–4	4.87	1.23	3.3	1.34	4.549	61	<.001**	1.16
Minutes of practicing per day								
Beginner 1	23.75	10.94	20.1	10.47	1.143	44	.259	0.34
Level 2–4	30.06	12.01	24.58	10.05	1.736	60	.088	0.44

Note. *M* = mean; *SD* = standard deviation
**$p < .01$

multiplied the number of minutes per practice by days per week and found a noticeable difference. Beginner and Level 1 continuing students practiced a total of 110 minutes per week, compared to dropouts who practiced 69 minutes per week; Levels 2 to 4 continuing students practiced a total of 146 minutes per week, compared to dropouts who practiced 81 minutes per week. There was not enough data in the more advanced levels to make accurate comparisons between both groups.

We asked students and parents if there were irregular, circumstantial reasons unrelated to motivation that led to dropout (see Appendix). Results showed that sudden or uncontrollable instances such as disliking the teacher, financial reasons, or moving away were not determining reasons for dropping out. For example, the most commonly used words by students regarding their teacher were *nice*, *kind*, or *helpful*. Only four out of 55 parents cited cost as a contributing reason for stopping lessons.

DISCUSSION

Our work on the topic of piano student dropouts involved 55 students and their parents who completed Likert scale, multiple choice, and open-ended survey questions. This group was compared to 260 continuing students and their parents who were still involved with piano lessons, and who completed the same survey. The two groups of students in question were statistically similar in age and gender, and these factors did not seem to have an impact on motivation. However, there were significant differences between the two groups' types of motivation. Dropout students responded that they were "not interested" in piano lessons any longer or got "bored of it" but could not identify the precise cause of these feelings. Our discussion suggests that they may have lacked competency, relatedness, and autonomy, which resulted in feelings of amotivation.

Our results show that students in the continuing group began lessons, on average, at age 6.5, while the dropout students began lessons at age 7. While this was not statistically significant, 6 months of musical training can be important in childhood

development (Cohrdes, Grolig, & Schroeder, 2019; Moreno et al., 2009). The continuing students who began lessons earlier had greater amounts of practice compound over more time. Their overall higher levels of later motivation were perhaps based on greater feelings of competency. One student expressed that "I think that if I started playing piano when I was younger (I started when I was 12) I would have a stronger connection to piano." However, we could not find a direct link between the age at which students began lessons and motivation. We are perplexed by this result and suggest more investigation be done between the age children begin piano lessons and their later motivation.

While there was a slight correlation between age and motivation within the dropout group, it could simply signify that the very amotivated students dropped out at earlier ages, which left only the slightly more motivated students remaining in the teenage years, making it appear that the older students were more motivated. However, the finding that students within the dropout group quit, on average, at age 12 reflects a commonly held belief among private studio teachers that many students leave lessons in early adolescence (Chen, 2011; Milne, 2013). Whether this is due to fluctuations in motivation over time, including a notable low point in the preteen years, requires further study. We found no significant differences in motivation between genders, which comes in contrast to previous studies done with music students that claimed that boys are more extrinsically motivated than girls, and girls more intrinsically motivated than boys (Miyamoto, 1997). Instead, our results support research (Rife, Shnek, Lauby, & Blumberg Lapidus, 2001) that found no significant gender differences in children's attitudes toward music experiences.

Results showed that there was a statistically significant presence of Asian background students in the continuing group and Caucasian background students in the dropout group. The clear presence of higher-motivated Asian background students in the continuing group supports findings by Comeau et al. (2015) that found that Chinese piano students showed higher levels of intrinsic motivation than their North American counterparts. Our findings also point toward Power's (1990) doctoral work that showed American mothers' high satisfaction with their children's relatively low achievement in piano lessons. Research suggests that Asian children's motivation toward success to is linked to *effort*, while American children regard *ability* as the reason for their success (Eaton, 1994). Since concepts such as autonomy, achievement, effort, and ability convey different meanings among Asian families, this cultural background may carry important implications for motivation as well. Further exploration of this topic would be valuable in the context of piano student motivation and attrition.

There was a distinct difference between dropout and continuing groups' practice amounts (minutes per session multiplied by days per week), although practicing was surprisingly not necessarily related to motivation. The beginner dropout students practiced about 60% of what continuing students did, and Level 2 to 4 dropout students practiced only about 55% of what the continuing students did. Overall, a lack of

competency seems to be connected with dropping out. When students were asked what would have changed their minds from dropping out, the two most commonly cited words were "less" and "practicing." However, the already weak practice habits suggest a disconnect between student expectations and the realities of piano lessons. Other studies have found that continuing students showed a stronger commitment to practicing, higher levels of reflection and self-evaluation during practice, more awareness of their progress, and better understanding of the purpose and importance of practice than dropouts (Costa-Giomi, 2004). Our significant findings particularly came in the number of days per week students were practicing, and results from other studies also suggest that large amounts of piano practice are not as important as consistency of practice for successful participation in piano study (Duke, Flowers, & Wolfe, 1997). In other words, children's piano practice should be frequent but not necessarily lengthy. It was surprising that despite testing for correlations between continuing and dropout groups' daily practice, between grade levels, or between number of minutes per week, we were not able to find any relationship between practicing and motivation. We recommend this as an area of further study.

The results showed no significant difference in motivation between those who wanted to switch instruments and those who quit altogether. Students' direct references to the popularity of guitar points toward that instrument's strong social image at this point in history, especially for a teenager. One student expressed that piano lessons would have been more fun if they could play "songs I've heard on the radio that I like." Students often referenced songs they "knew" or had heard elsewhere, which speaks to the psychological need of relatedness. Similarly, one parent explained the need for "more 'popular' repertoire." However, most music in current popular culture does not incorporate the piano. Student emphasis on playing pop music, which prioritizes the guitar, suggests that students sought to simply gain approval from their peer groups without any intention of mastering the instrument or enjoying the music itself. Students cannot rely on peer pressure for motivation, and research suggests that the motivation to learn an instrument in order to gain social approval declines around age 12 (Sloboda & Davidson, 1996). Our results suggest that the desire to switch instruments does not necessarily reflect how motivated students are about engaging with another musical instrument but rather reflects the influence of popular music and the image associated with rock stars.

Parental involvement did have an impact on motivation within the dropout group, and for these students, parents sitting in at lessons negatively correlated with autonomous motivation. Parents may have overstepped their boundaries to interfere with the lesson environment, and although they may have been trying to make helpful suggestions, this could have been perceived by the student as nagging or giving criticism. One parent expressed that her daughter would have had more fun with lessons if she did not "have her mother involved." Furthermore, many parents cited serious practice problems and the word "fight" appears twice in their responses. This aligns with previous research that found that close parental supervision could improve performance standards but

that a demanding parenting style can have a detrimental effect on autonomous motivation (Chardos-Camilli, 2015). Other research acknowledges the necessity of parental support but warns that it must be sensitively offered, with "undue interference often resented by the children, and superficial praise sometimes serving to reduce expectations rather than act as encouragement" (Pitts et al., 2000, p. 53). The literature has shown that parental involvement creates higher-quality learning, develops stronger student practice habits, creates greater self-concept in music, and results in students who are more interested in piano performance, creativity, and pursuit of other musical activities (Comeau & Huta, 2015; Sichivitsa, 2007). However, we must also carefully examine the quality of parental involvement to ensure it is supportive of students' autonomy.

The dropout group showed significantly lower levels of autonomous motivation than continuing students, and this could be because they were not given freedom of choice in the music they played. Almost half of students felt that lessons would have been more enjoyable with a wider variety of repertoire, more choices in their pieces, and the ability to play by ear. Students explained that lessons would have been more fun if they were able "to choose some music to play as well as the vital things" or "if the pieces were more interesting instead of only classical pieces composed in the 1700s." Similarly, one parent echoed that "learning music meaningful to [my daughter] versus grades or specific programs" would have made lessons more fun. The psychological needs of autonomy and relatedness seem to be missing for these students. Dyal (1991) recommends the need for a diverse musical education, with a mixture of styles and moods, and implies that teachers must present their students with personalized options rather than standardized assignments. Providing students with choices has been found to strongly relate to superior learning outcomes (Reynolds & Symons, 2001), and even the provision of quite trivial choices has been found to lead to increases in intrinsic motivation, higher levels of learning, and perceived competence (Cordova & Lepper, 1996). Autonomy is required for the self-regulatory behaviors that foster the desire to work hard and perform with creative ownership. Dropout students often did not feel ownership of their pieces, and their background information shows that they were primarily taught from traditional method book or conservatory systems that may have lacked personalization.

It was surprising to find that dropout students displayed slightly increased feelings of autonomous motivation when rewards for achievements were given. While this was not statistically significant, it is notable that the same parameters between dropout and continuing students were different. It may seem strange than an external reward would impact intrinsic motivation, but Fredricks and colleagues (2002) explain that receiving external validation strengthens a student's perception of their own abilities, which in turn helps to strengthen their commitment to the activity. Although longstanding studies cite extrinsic motivators as undermining to intrinsic motivation (Deci & Ryan, 1985), Fredricks and colleagues (2002) argue that extrinsic rewards and recognition seemed to be reciprocally related to intrinsic motivation. Rewarding effort rather than

ability can act as a confirmation of competency and strengthen feelings of autonomous motivation for those students who normally display controlled motivation or amotivation for piano lessons. However, this remains an area for further investigation and warrants more solid findings before accurate inferences can be made.

CONCLUSION

The primary research goal of this study was to discover if there was a correlation between certain types of motivation and attrition in piano students. We found that although dropout students did display some form of autonomous motivation, the similarly high values in controlled motivation and amotivation suggests that the level of autonomous motivation was not sufficient to sustain further music study. This suggests that dropout students did not dislike playing the piano and did find some personal meaning in the activity, but they may have had stronger autonomous motivation for other interests. Our results seem to support the major preteen dropout point, and we connected this decision to stop lessons with a lack of autonomous motivation. As research confirms, if the effort needed to sustain learning is to be developed, intrinsic motivation must be established (McPherson, 2000). Although controlled motivation does play a role throughout life, autonomous motivation must play a bigger and stronger role over time, and "unless external motivation develops into internal self-motivation by the early teenage years, it is difficult to sustain the commitment required to persist with musical instrument learning" (Sloboda & Davidson, 1996, p. 181). However, these findings invite more detailed and nuanced data between those who left lessons before and after the preteen dropout point to better understand this phenomenon.

In our exploratory findings, we discovered that certain environmental factors may explain why the dropout students were less autonomously motivated. A later start to lessons in childhood and inadequate practice amounts may have resulted in weakened feelings of competency. Many of the dropout students cited a lack of popular repertoire and wanted to switch to guitar lessons, which may have resulted in weakened feelings of relatedness. Finally, the dropout students may have had interfering parents and lacked the freedom of choice with repertoire they were learning, which suggests weakened autonomy. SDT requires an interplay of all three psychological needs to build meaningful, autonomous motivation. If even one of the psychological needs is not being fulfilled, students backslide on the scale toward amotivation. Unfortunately, for many students who quit piano lessons, all three psychological needs may have been missing, which could explain their stronger pull toward amotivation than the students who continued.

RECOMMENDATIONS

For researchers, the connection between certain variables such as practice time or starting age and motivation were exploratory and not included in the original hypothesis, and we recommend further study on these topics. For both dropout and continuing

groups, we noticed lower levels of autonomous motivation in adolescent-aged students; however, we cannot comment on whether their motivation changed over time. A longitudinal study of piano student motivation would be valuable. No student is consistently autonomously motivated throughout their learning—highs and lows are inevitable. The literature shows that children's motivation for various activities changes over time (Wigfield et al., 1997) but has not yet investigated how motivation fluctuates for piano students in private lessons.

For parents and teachers, we recommend that if students can begin music lessons early in childhood, develop solid practice habits, and experience a sense of accomplishment from their progress by the time they reach adolescence and their interest in music lessons declines, these music students will have established playing the piano as a meaningful part of their everyday lives and will likely find the autonomous motivation required to continue. Parents and teachers must develop an awareness of the student's three psychological needs and take continuous, supportive action. As research confirms, "finding strategies to develop the intrinsic desire to learn is the most important task for beginning instrumentalists and those who support them" (Pitts et al., 2000, p. 52). The long quest to develop expertise in playing the piano requires a deep level of autonomous motivation in order to persist with the thousands of hours of training required.

APPENDIX

Open-Ended Questions for Students and Parents

1. The main reason I/my child stopped piano lessons was because . . .
2. Did you like your/your child's piano teacher? Why or why not?
3. Did you stop piano lessons because they were too expensive?
4. Did you move away? Did your teacher move away?
5. Did you/your child have too much interfering homework from school?
6. Did you/your child stop piano lessons because of sports? If so, which one(s)?
7. Did you/your child stop piano lessons in order to play a different instrument? If so, which one(s)?
8. What would have made piano lessons more fun for you/your child?
9. Was there anything that could have changed your/your child's mind from quitting piano? If so, what?
10. Do you think you/your child will ever take piano lessons again? Why or why not?

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