Addressing Students' Psychological Needs Through Participation in Orchestra

by

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Abstract

The purpose of this study was to the examine the extent to which students' psychological needs as described by Evans (2015) were met through participation in orchestra. Specific research questions include: a) To what extent does participating in orchestra both satisfy and frustrate students' need for competence? b) To what extent does participating in orchestra both satisfy and frustrate students' need for relatedness? c) To what extent does participating in orchestra both satisfy and frustrate students' need for autonomy? d) How does student competence, relatedness, and autonomy satisfaction and frustration in orchestra differ based on selected variables (grade level, gender, instrument, and private lessons)?

This study was limited to fifth through twelfth grade students from a single school district who were enrolled in the orchestra program in the 2019-2020 school year. The school district was in a suburb of a mid-sized Midwestern city.

Participants were invited to complete an online questionnaire to examine perceptions of their psychological needs being met through participation in orchestra. A 24-item questionnaire was adapted from Chen, et al., (2015) for application in the orchestra classroom. Each item represented one of the three Self-Determination Theory constructs and could be further divided into satisfaction and frustration within those constructs. Four additional items provided data regarding participants' grade level, gender, instrument, and years of private lessons. The 28-item questionnaire was administered in November 2019 with Qualtrics.

Student participants reported their psychological need for competence, relatedness, and autonomy were greatly satisfied through participation in orchestra. The strongest subscale was relatedness, due to participants reporting a high relatedness satisfaction (M=4.09) and a low relatedness frustration (M=1.74). Participants reported the highest satisfaction in competence

(*M=4.11)* and lowest satisfaction in autonomy (*M*=3.74). Fifth-grade participants reported some

of the lowest satisfaction scores. Females reported higher satisfaction scores in autonomy and

relatedness subscales than males. Students who enrolled in private lessons reported an increase

of the competence satisfaction over the number of years enrolled in private lessons.

Chapter I

Introduction and Rationale

Motivation is an important consideration for educators and researchers. Some motivation theories focus on goal setting and achieving, while other theories focus on human goals in relation to their beliefs, values, and action toward those goals (Eccles & Wigfield, 2002).

One motivation theory widely used is Self-Determination Theory (SDT). When applied to education, SDT "is concerned primarily with promoting in students an interest in learning, a valuing of education, and a confidence in their own capacities and attributes" (Deci, Vallerand, Pelletier, et al., 1991, p. 325). While many other theories have investigated goal-directed behavior, SDT separates the goals and the means through which they are achieved. Specifically, SDT considers the degree to which basic psychological needs are being satisfied in the attainment of desired goals. SDT identifies innate psychological needs of competence, autonomy, and relatedness (Deci & Ryan, 2000).

> "Competence involves understanding how to attain various external and internal outcomes and being efficacious in performing the requisite actions; relatedness involves developing secure and satisfying connections with others in one's social milieu; and autonomy refers to being self-initiating and self-regulating of one's own actions" (Deci, Vallerand, Pelletier, et al., 1991, p. 327).

Motivation has been a critical area of investigation for music educators and researchers to determine how and why a student begins to learn a musical instrument, how they endure adversity in their learning, and how they gain success or quit (Evans, 2015). SDT can assist music educators in describing a large range of behaviors, examining attrition and retention rates, and investigating the quality of motivation (Evans, 2015).

Many music education researchers have examined factors contributing to attrition in instrumental music education programs (Corenblum & Marshall, 1998; Hamann & Gillespie, 1998; Hartley, 1996; Klinedinst, 1991; Kuhlman, 2005; Martignetti, 1965; Solly, 1986). Findings from prior research suggest multiple aspects influence attrition in instrumental music programs including: a) new teacher at new school, b) socioeconomic status, c) internal and external motivational reasons, d) scholastic achievement, e) the grade level where the instruction begins, and f) schedule conflicts. Most retention and attrition research in music education has been focused specifically on instrumental band programs (Anthony, 1975; Brown, 1996; Corenblum & Marshall, 1998; Frakes, 1984) and more recently in orchestra programs (Evans & Liu, 2019)

Smith, et al., (2018) investigated the status of string orchestra programs in schools. It was determined that an average of 73% of students continued from the first to second year of instruction, 69% continued from elementary to middle/junior high, and 69% continued from middle/junior high to high school. Researchers have called for further investigation into attrition and retention in string orchestra programs (Hamman, et al., 2002; Hamann & Gillespie, 1998; Hartley, 1996; Klinedinst, 1991; Solly, 1986; Wragg, 1974).

Researchers have examined motivational factors that contribute to attrition including: Poor relationship between student and teacher (Anthony, 1975), schedule conflict (Anthony, 1975) and loss of student interest (Martignetti, 1965; Wolfle, 1969). However, this prior research lacks a theoretical framework to explain these motivational factors.

Applying SDT as a theoretical framework for music education research on attrition and retention may help music educators better understand the reasons for attrition in their programs. Some of these factors may impact students' psychological needs of competence, relatedness, and autonomy. A poor relationship between student and teacher would suggest there is an impact on

the psychological need for relatedness. A schedule conflict may suggest a student's desire for competence in a different subject outweighs the psychological need for competence at playing a musical instrument. A loss of interest may suggest a lack of autonomy in student's musical development.

While attrition rates may provide a quantitative value to the success of a music education program, there are many additional aspects to consider. These aspects include a competent teacher, strong support from parents, school administration, and colleagues, sufficient funding, adequate instructional space, recruiting large numbers of students to the program, frequent community performances, expressing thanks to program supporters publically, good relationships with school and community music teachers, maintaining vision for the program, and frequent public exposure (Gillespie, 2010). Within the framework of SDT, the influence of each of these aspects can be explained. A competent teacher affects the relatedness of student to teacher relationship and can affect teacher to student relationships. A competent teacher will also affect students' psychological need to feel competent through the quality of the musical performance. A competent teacher will impact students' sense of autonomy through cultivating a desire to practice outside of class rehearsals. Strong support from the community will contribute to students' relatedness to the program. Sufficient funding impacts the quality of instruments and equipment a school district supplies, which affects students' level of competence. Sufficient funding may also allow students' the ability to participate in festivals and travel which would impact student's relatedness. Adequate instructional space may impact a students' level of autonomy, allowing the space to practice individually or in a small group. Recruiting large numbers of students to an orchestra program impacts a student's relatedness, based on the shared experience of the first year of learning an instrument. Frequent community performances may

impact a student's psychological need of relatedness to an orchestra program. Expressing thanks publically and strong relationships with community music leaders can impact the students' need for relatedness in their community. Maintaining a vision for the orchestra program can impact a student's need for competence in their musicianship. Frequent public exposure may have influence on students' relatedness to the community and autonomy in their sense of pride. Each of these aspects are considerations in the success of the orchestra program in the current study.

Prior research has examined motivation and the factors that influence retention and attrition of students in instrumental music, however, many researchers did not use a motivation theory as a framework for explaining their findings. The use of SDT as a theoretical framework for a study on retention may help explain how students' psychological needs are impacted by school ensemble participation. Little research exists examining attrition rates of an American string orchestra program. A study examining SDT in a string orchestra program will inform string education and help string music educators better understand the psychological needs of their students.

Purpose and Research Questions

The purpose of this study was to the examine the extent to which students' psychological needs as described by Evans (2015) are being met through participation in orchestra. Specific research questions included: a) To what extent does participating in orchestra both satisfy and frustrate students' need for competence? b) To what extent does participating in orchestra both satisfy and frustrate students' need for relatedness? c) To what extent does participating in orchestra both satisfy and frustrate students' need for autonomy? d) How does student competence, relatedness, and autonomy satisfaction and frustration in orchestra differ based on selected variables (grade level, gender, instrument, and private lessons)?

Description of the Program

A school district located in a suburb of a mid-sized Midwestern city was the focus of the current study. Examining the orchestra program in this school district will contribute to the field of music education due to the exemplar status of the program. Phillips (2016) discussed three pillars of a great music program: recruitment and retention, high-quality music environment, and communication. The orchestra program has been successful in each of these pillars.

Approximately 5,700 students were enrolled in the district in preschool through 12th grade. Approximately 480 students were enrolled in the orchestra program in grades five through twelve. This orchestra program had similar or above average retention rates as reported by Smith, et al., (2018).

Phillips (2016) stated that "most successful programs are always strong in all three areas" (p. 40). In addition to orchestra, the school district had a band and choir program, each beginning in fifth grade. The band and choir program in this district had comparable retention rate to that of the orchestra program. Music educators understand that recruiting the most students for each program should be done cooperatively (Phillips, 2016, p. 40). A music recruitment concert occurred annually for all fourth-grade students in the district.

The school schedule in grades five through eight allowed students to enroll in two music ensembles, such as band and orchestra, as part of their daily schedule. Students in grades nine through twelve were permitted to continue participation in two music ensembles, or alternate between two ensembles on a rotating schedule.

The orchestra program possessed a high-quality music environment. Four orchestra teachers were employed in the district: two of which had a master's degree and/or additional educational licenses, had a combined 41 years of teaching experience, and three whose primary

instrument were string instruments. High school and junior high ensembles from the orchestra program have performed at five national and state music education conferences in the last five years. Students regularly performed at state Solo and Ensemble, District, Region and All-State Orchestras.

The orchestra program possessed a strong history of communication to administrators, staff, parents, students and the community. The booster organization supported the program with five board members and quarterly meetings. School administrators regularly attended performances. The orchestra program collaborated annually with community vocal and symphonic ensembles for concerts. Members of the orchestra teaching staff were employed by community music schools, youth orchestras, and frequently hosted state music education events such as Honors Orchestra, Region Orchestra, and Solo and Ensemble.

The aspects of recruitment and retention, high-quality music environment, and communication in the orchestra program display a high level of success. This study will inform the field of music education by examining the extent to which students' psychological needs are being satisfied and/or frustrated through participation in orchestra.

Definition of Terms

For the purposes of this study, the following terms will be defined from Chen et al., (2015) as:

Self-Determination Theory – The theory posits the existence of three basic psychological needs, namely, autonomy, relatedness, and competence. The satisfaction of these psychological needs is said to be universally essential for human thriving. In contrast, when these needs get frustrated, maladjustment and even psychopathology is said to result.

Competence – involves feeling effective and capable to achieve desired outcomes

Relatedness – the experience of intimacy and genuine connection with others

Autonomy – the experience of self-determination, full willingness, and volition when carrying

out an activity.

For the purposes of this study, when using the term orchestra, the researcher is referring

to a string orchestra with the following instruments: a) violin, b) viola, c) cello, d) bass and e)

harp.

Chapter Two will review the literature related to previous research on retention in music

education.

Chapter II

Review of Literature

Researchers in music education have been interested in the retention of students in the music classroom. Researchers have investigated factors contributing to student retention through collection of data or interviews from music students, parents of music students and music teachers. Researchers and motivation theorists have used Self-Determination Theory (SDT) to provide a framework for human psychological needs fulfillment. In recent years, researchers have applied SDT to the field of music education to examine motivation in the music classroom.

This chapter will review literature related to the current study in three categories: a) retention in music education, b) Self-Determination Theory, and c) research in music education using Self-Determination Theory.

Retention in Music Education

In music programs, the notion that several students may discontinue their musical studies is common. Martignetti (1965) conducted a study of retention in music education. Teachers, students, and parents associated with instrumental music programs in Bergen County, New Jersey participated in the study. Martignetti mailed 86 questionnaires to instrumental music educators and 56 questionnaires were returned which represented 114 schools from 38 communities. Additionally, Martignetti interviewed students and parents in the county whose children dropped out of the elementary instrumental music program. Based on questionnaires from music teachers, Martignetti suggested multiple factors may contribute to a good instrumental music program such as:

    a) parent involvement
    b) teacher alone time with students to supplement ensemble instruction
    c) families' adherence to decision for child to participate with music
    d) school administrative support

e) multiple music teachers
f) music teacher must make their program interesting
g) instrumentally homogenous classes
h) students perform often
i) teacher must build program for students to feel a sense of belonging
j) community interest

Martignetti determined teachers, students and parents had different reasons for students discontinuing instrumental music: teachers indicated a loss of interest, students indicated a difficulty of the instrument and parents indicated not enough time to practice. From 35 interviews conducted with students who dropped out of their elementary instrumental music program, Martignetti determined 69% of the students were challenged with performing the instrument they chose and 31% did not think it was difficult. 67% of students liked the instrument they were learning and 33% of students did not. Interviews with 35 parents of the children who dropped out, determined 54% of parents believed their child did not have enough time to practice.

Although Martignetti's primary focus was on students who ceased music instruction, not all studies share that focus. Wolfle (1969) collected data through surveying all students in twelfth grade at three high schools in the Cincinnati public school district ($N = 948$). Wolfle sought to uncover the connection between multiple factors and participation in instrumental music. Wolfle examined the relationships between the following factors: (1) grade level students began instrumental music instruction, (2) grade level students discontinued participation in instrumental music instruction, (3) reasons students provided for beginning instrumental music instruction, and (4) reasons students provided for discontinuing participation in instrumental music instruction. Wolfle attempted to establish relationships between the following factors: chosen instrument, student gender, intelligence, private lesson enrollment, ensemble participation, and

self-instruction. Additionally, Wolfle conducted interviews with school administrators to gather

school and student data, and scheduling information.

Wolfle's study produced a wide variety of results. 74.9% of students discontinued

instrumental music instruction and listed the following reasons in order of decreasing frequency:

1. loss of interest
2. not enough time to practice or perform
3. had other interests
4. hated to practice
5. boring
6. got tired of it
7. lacked patience and perseverance
8. did not have room in schedule

The reasons listed above remained consistent across the various grade levels students

discontinued instruction. Wolfle inferred that students with families in middle or upper class

socio-economic group are more likely to begin instrumental music instruction than students in a

lower class socio-economic group. Data from the study also indicated that regardless of socio-

economic backgrounds or intelligence, students beginning instrumental music have similar

chances of continuing instrumental music instruction. Wolfle found an even number of both

genders of students participated in beginning instrumental music instruction. Students enrolled in

an instrumental music ensemble were more likely to continue instruction than students enrolled

in private instruction outside of school, which indicated the innate social aspect of performing in

an ensemble. Participants in this study who never enrolled in instrumental music instruction

indicated the following reasons for not participating: a) not interested, b) had other interests, c)

not enough time to practice or perform, d) and realized lack of ability or talent. Participants in

the study who enrolled in instrumental music instruction indicated the following reasons for

enrolling: a) for my own pleasure, b) liked music and became interested, c) wanted to play a

musical instrument, d) parents influence or desire, e) and to see what it was like.

Wolfle recommended educators focus on the transition students experience between buildings within a district to ensure student participation due to a lower enrollment in the first year at a new school building. Wolfle also recommended educators add additional ensembles based on student need and interest to further enhance students' instrumental music instruction and to further engage the community.

Wolfle's large collection of data provided a background for the development of Morehouse's (1987) instrument designed to collect data regarding student attitude towards strings class, playing in concerts, repertoire, string teacher, practicing, classmates, parent support, self-improvement, satisfaction with instrument chosen and general negative string experiences. Reaching out to school orchestra teachers in Texas, Morehouse surveyed 1,229 students and 47 teachers with a developed instrument, the String Student Attitude Measure (SSAM). Reliability of the instrument was determined to be $r = .90$.

Morehouse's (1987) study possessed an additional purpose of identifying attitudinal factors that explain retention and attrition in beginning string instruction. The Minnesota Teacher Attitude Inventory (MTAI) was used to collect data on teacher attitude toward students. A split-half reliability of MTAI was $r = .93$. The questionnaire included items about children's irresponsible tendencies and lack of self-discipline, autocratic control of student learning, tendency toward punitive punishment, and benevolent, paternalistic relationship to children. Morehouse arranged the following variables, which are significant predictors of student retention and dropout, in order of strength:

1) Attitude toward strings class
2) Attitude toward music played
3) Expected overall school grade
4) Attitude toward string teacher
5) Attitude toward string classmates
6) String teacher MTAI raw score

7) Attitude toward string instrument chosen
8) Attitude toward playing in concerts
9) Ownership of instrument
10) General overall negative string class experience
11) Perceived parent support
12) Sex of student
13) Private string lessons
14) Attitude toward practicing
15) Expected string class grade
16) Perception of improvement in playing

Morehouse called for additional retention research in string education to be completed outside of

Texas, which was realized by Klinedinst (1991).

Klinedinst (1991) surveyed 205 fifth-grade beginning instrumental music students from

seven elementary schools in Pennsylvania to determine the factors contributing to musical

success and retention. The 11 factors included:

1) Musical aptitude
2) Scholastic ability
3) Math achievement
4) Reading achievement
5) General music teacher rating
6) Attitude toward music
7) Self-concept in music
8) Music background
9) Motivation to achieve in music
10) Socioeconomic status
11) Instrument adaptation assessment

Evaluating these factors, Klinedinst used twelve instruments to gather data including:

Intermediate Measures of Music Audiation, Otis-Lennon School Ability Test, Stanford

Achievement Test, a general music and instrumental music teacher survey, Attitude Towards

Music Scale, Svengalis' Self Concept in Music Scale and his Music Background Inventory.

After 32-weeks of data collecting, Klinedinst identified self-concept in music, scholastic

ability, reading achievement, math achievement, and socioeconomic status were significant

predictors of student retention. Music reading skills were related more to intelligence and

academic achievement than to musical aptitude. The data had a strong relationship between "attitude towards music" and "self-concept in music." Klinedinst suggested music educators maintain a positive approach to create a positive self-concept in students regarding their instrumental music education.

Although Klinedinst examined multiple factors relating to retention, personality variables were absent from the study. Like Klinedinst, Mowery (1993) also studied multiple factors contributing to retention. However, Mowery investigated the relationship between personality variables and retention of string orchestra students, as well as the effect of gender, race, family status or socioeconomic status. Sixth and eighth grade string players ($N = 144$) in an Ohio public school were surveyed, some who dropped out of the program and some who remained involved. The Myers-Briggs Type Indicator (MBTI), Basic Information Questionnaire (BIQ), and Confidential Exit Questionnaire (CEQ) were the instruments used to collect data.

Results from Mowery's study reveal a substantial difference in the personality variable of sensing-intuition among students who drop out and students who remain in orchestra and a substantial difference in judgement-perception personality variable between sixth and eighth grade subjects. Results indicated the way students perceive information is the biggest indicator of whether they remain in instrumental string instruction. For example, most students perceived information intuitively and remained enrolled in orchestra. Most students who limited their perception of information to the senses were more likely to discontinue instrumental string instruction. In the CEQ test, students indicated reasons for dropping out of strings and the top four reasons were: class was boring, loss of interest in orchestra, schedule problems, and dislike of teacher.

Like Mowery, Corenblum and Marshall (1998) focused on multiple factors contributing to retention. Their factors included: socioeconomic level, academic competency, parental attitudes, students' attitudes, teacher attitudes, musical interests outside of class, and attributions/associations. Their survey consisted of 253 ninth grade students enrolled in band programs in Canada. Corenblum and Marshall sought to determine students' intentions to continue instrumental music instruction and whether intellectual competencies were a factor in student retention in instrumental music programs. Corenblum and Marshall made four hypotheses:

(1) Socioeconomic level should predict students' outside musical interests and their perceptions of their parents' attitudes; both of these variables should, in turn, predict intentions

(2) Perceived school support of the band program should predict band teacher attitudes, and these attitudes should predict student attitudes, which, in turn, should predict intentions

(3) Teacher evaluations and grades should directly predict student intentions to continue, that is, positive evaluations should be associated with intentions to remain in the program

(4) Teacher evaluations and grades should predict attributions for band grades. Favorable evaluations and grades should be positively associated with internal attributions and inversely associated with external ones

Corenblum and Marshall collected data through band teacher and student questionnaires and class observations. In the questionnaire, student participants recorded their attitudes and perceptions about band, current grade point average, and whether they intended to continue in band the following year. The band teacher's questionnaire included a ranking of each student's in-class performance and an estimation of their grades.

The results indicated that socioeconomic level, teacher evaluations, and perceived attitudes of peers and parents were predictors of students' intentions to continue. Student grades were not an indicator of students' intention to continue in their instrumental music instruction.

Corenblum and Marshall suggested that future research investigate the actual attitudes of parents,

community, and band teachers, as well as track enrollment throughout high school.

Perkins (1998) explored factors related specifically to participation in public school

orchestra. Perkins sought to answer:

1. What are the relative strengths of personal incentive orientations – task, ego, social, extrinsic – on decisions to initially participate in orchestra?
2. What are the relative strengths of personal incentive orientations among students who are members of their school orchestra?
3. What are the relative strengths of personal incentive orientations among groups of different grade levels as they perceive themselves as members of their school orchestra?
4. Is there a statistically significant relationship between student personal incentives and their original reasons to join orchestra?
5. Is there a statistically significant relationship between personal incentives and perceived available options?
6. Is there a statistically significant relationship between personal incentives and those perceived in the organizational culture?
7. To what degree do the factors contained within the available options and organizational culture predict participants' reasons to join and personal incentives?

Perkins collected data from a volunteer population of students ($N = 1315$) enrolled in

grades six through twelve in three school districts Perkins developed Spectrum-String Education

Participation (SSEP) to measure four areas of participation in orchestra: (1) reasons to join, (2)

membership in orchestra, (3) perceive available options, (4) the organizational culture.

Reliability estimated for the SSEP was a range from $r = .67$ to $r = .87$.

Results from Perkins' indicated the most common reasons students enroll in orchestra

were listed as follows in order of strength:

1. desire to make music
2. the influence of the teacher
3. extrinsic-activities (fun factor)
4. music ability
5. extrinsic-available opportunities
6. family influence

These results are consistent with Wolfle's (1969) study. Both provided reasons students join

instrumental music instruction.

In anticipation of research on retention in the instrumental string setting, Hamann and Gillespie (1998) gathered descriptive data about public school orchestra programs to provide baseline information for educators and researchers. 652 surveys were completed, where orchestra teachers answered 44 questions to describe themselves, their school district and communities, orchestra curriculum, students and music. Results from this study indicated most school districts did not include an orchestra program, however enrollment in orchestra programs have increased since the 1990s. Schools offering an orchestra program generally possessed a large student population. Most school districts with an orchestra program were in a suburban area and had a booster support group.

The retention rate of string orchestras recorded in Hamann and Gillespie's study was divided by educational level. Participants from the study indicated that on average 74% of beginning students continued from the first to second year of string instruction, 70% of students elected to continue from elementary to junior/middle high, and 71% of students continued into high school.

Smith et al., (2018) provided a similar overview of the status of string orchestra education in schools. 328 string orchestra teacher participants self reported data for the study. Smith et al. reported similar retention in orchestra program data to Hamann and Gillespie (1998).

Summary of Retention in Music Education Literature

Research studies in music education revealed that factors such as socio-economic status, academic achievement, gender, grade, and orchestra teaching staff influence retention. SDT provides a framework to better understand these factors. A students' socioeconomic status may affect the child's level of competence if the students instrument is of a low quality and does not

remain in tune during the class rehearsal. A students' academic achievement may affect the autonomy the student has in the drive to practice improving upon a section in individual practice. A students' gender, grade, and relationship with the orchestra teacher may relate to their feelings of relatedness in the orchestra classroom.

Although each study makes recommendations for research, few studies contained or recommended a theoretical framework applied to retention. The next section will provide an overview of prior research in SDT, the theoretical framework of the current study.

Self-Determination Theory

Motivation theorists initially classified motivation in two ways: intrinsic and extrinsic motivation (Deci & Ryan, 1985). When intrinsically motivated, people participate in activities that are of interest to them with a sense of purpose and without the necessity of material rewards or constraints. When extrinsically motivated, people participate in activities because they are believed to be instrumental in nature. Self-Determination Theory is a theory which addresses both intrinsic and extrinsic motivation.

Deci and Ryan laid the groundwork for Self-Determination Theory (Deci & Ryan 1985; Deci, E. L., et al., (1991); Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory (SDT) can be defined as an empirically based, organismic theory of human behavior and personality development that differentiates types of motivation along a continuum from controlled to autonomous.

Three innate psychological needs exist as components of SDT: autonomy, competence, and relatedness. Autonomy is the psychological need to be an advocate in their own life and achieve a sense of inner-peace. Competence is a psychological need to achieve mastery or be proficient at a skill. Relatedness is the psychological need to connect, socialize, and experience

engaging with others. If all three needs are met, SDT researchers suggest that people will mature optimally.

In their initial publication on SDT, Deci and Ryan primarily focused on self-determination and competence and described a need for relatedness to be explored to broaden the theory to describe human motivation (1985).

Applying SDT to the field of education, Deci and Ryan (1991) suggest that it may promote in students an "interest in learning, a valuing of education, and a confidence in their own capacities and attributes" (Deci and Ryan, 1991, p. 325). Researchers implied that intrinsically motivated students, who have developed more autonomous regulatory styles, are seemingly able to attain goals, remain enrolled in educational instruction, and be well-adjusted than students who do not possess these motivational qualities. "A central hypothesis of Self-Determination Theory is that social contexts that support people's being competent, related, and autonomous will promote intentional action, and furthermore, that support for autonomy will facilitate that motivated action's being self-determined" (Deci and Ryan, 1991, p. 333).

People who experience reasonable needs satisfaction no longer seek out needs satisfaction but rather continue activities that are of interest or of great importance to them (Deci & Ryan, 2000). A person who found an activity interesting or important was affected by past experiences of need satisfaction versus thwarting. Deci & Ryan (2000) apply SDT in a musical context,

> "A man who, in the evening, sits at the keyboard and begins to play a piece of music,
> may become lost in its beauty and experience great pleasure. He would not experience
> the pleasure if coerced to play, or if he felt unable to master the music." (p. 230)

The man would not feel the need to perform on his instrument if he wasn't motivated. It may

have indicated that autonomy is an important component of motivation.

Ryan & Deci (2000) applied SDT to other disciplines including education and health care. In education, autonomous extrinsic motivation was connected to more engagement, better performance, lower dropout, higher quality learning, and better teacher ratings. In health care, greater internalization was connected to greater adherence to medications among people with chronic illnesses, better long-term maintenance of weight loss among morbidly obese patients, improved glucose control among diabetics, and grater attendance and involvement in addiction-treatment program. Positive outcomes have occurred in other disciplines including religion, physical exercise, political activity, environmental activism, and intimate relationships (p.73).

Niemiec & Ryan (2009) made a thorough connection between education and SDT, indicating strong implications for classroom practice and educational reform. Teachers' assistance of students' basic psychological needs for autonomy, competence, and relatedness through classroom practices allowed for students' autonomous self-regulation for learning, academic performance, and well-being. Niemiec & Ryan recommended strategies for enhancing autonomy, competence and relatedness in the classroom including: a) providing choice and rationales for learning activities, b) acknowledging student feelings, c) challenging tasks, and d) conveying caring and respect to students.

Summary of Self-Determination Theory

The findings from these studies provide background for SDT, the theoretical framework for the current study and outline three constructs of the theory: autonomy, competence and relatedness. An example of an impact on a persons' autonomy may include the amount of control displayed by an authority figure or superior. An example of an impact on a persons' competence may include a feeling of success or failure while performing a task. An example of an impact on

a persons' relatedness may include an awareness of the level of comfortability with socializing with a group of people.

This informs the current study by defining the constructs and applying the framework in various disciplines. Although past research has applied self-determination in various disciplines, few studies contain application to the field of music education. The next section will provide an overview of past research in music education using SDT.

Research in Music Education Using Self-Determination Theory

The field of music education recently adopted SDT as a theoretical framework to explain motivations within the music classroom. Evans, et al., (2012) conducted a longitudinal study including 104 participants in Sydney, Australia who had 10 years of music instruction. The survey investigated the three psychological constructs of SDT in the context of students playing their instrument and feeling the most engaged, and leading up to ceasing their music instruction. Students who quit music instruction described the reasons behind their choice with declining feelings of competence, autonomy, and relatedness. An open-ended question on the survey supported the survey results. Results suggested motivations to participate in music instruction indicated a propensity toward good behavior. The researchers recommended more investigation to substantiate their findings and to enhance motivation research in the field with the SDT framework.

Evans (2015) applied SDT framework to the music education setting. Evans advocated for SDT providing valuable framework for the music education field because (1) the ability to explain a wide range of behaviors in the music classroom and learning, (2) the applicability to student retention and attrition, (3) the concentration on the quality of motivation instead of just

the quantity, and (4) it will translate from various other researchers who have applied this framework in their disciplines.

Evans (2015) developed a conceptual overview of the framework and provided clarity to the application in the field. Two concepts were identified within Self-Determination Theory: basic psychological needs and internalization. The basic psychological needs concept identified humans possess an inborn set of psychological needs, just as self-determination defined competence, relatedness, and autonomy. Evans (2015) identified students will base their decision to continue music instruction based on perceived abilities despite their innate musical talent or potential.

Evans and Liu (2019) applied the SDT framework in the orchestra classroom. Participants ($N = 704$) were members enrolled in one of three school orchestra programs in the mid-western United States. The study examined predictors of three outcomes in music education related to motivation, and the role of psychological needs as a predictor of these outcomes: practice time, intentions to continue with learning music, and self-esteem. Psychological needs satisfaction predicted all three outcomes significantly. Psychological needs frustration displayed varying results. The results indicate psychological needs satisfaction and frustration are vital aspects of music education.

Summary of Research in Music Education Using Self-Determination Theory

Evans et al., (2012) provided a collection of resources for the inclusion of SDT in the music education context. Evans provided a basis for the theoretical framework in this study. Evans (2015) associated students' psychological need fulfillment with competence in the music classroom. Integrating SDT research in the orchestra classroom, Evans and Liu (2019) indicated that psychological needs satisfaction and frustration are critical aspect of music education. Little

research has been completed in music education and less has been completed in the field of string orchestra education.

Summary of Literature Review

Past research has revealed an interest in the field of music education for the study of retention. Researchers have outlined multiple factors to describe why students have ceased participation in music education. However, little research has been conducted on students who remain involved in music education. Little research has been conducted applying a theoretical framework to attrition in the string orchestra program.

The current study will apply SDT as a theoretical framework to create a more valid measure of retention in a string orchestra program. Chapter Three will discuss development of questionnaire, research participants, and the data collection procedure.

Chapter III

Method and Procedures

The purpose of this study was to the examine the extent to which students' psychological needs as described by Evans (2015) were being met through participation in orchestra. Specific research questions included: a) To what extent does participating in orchestra both satisfy and frustrate students' need for competence? b) To what extent does participating in orchestra both satisfy and frustrate students' need for relatedness? c) To what extent does participating in orchestra both satisfy and frustrate students' need for autonomy? d) How does student competence, relatedness, and autonomy satisfaction and frustration in orchestra differ based on selected variables (grade level, gender, instrument, and private lessons)?

The study was limited to fifth grade through twelfth grade students enrolled in a public-school district orchestra program in a suburb of a mid-sized Midwestern city in the 2019-2020 school year. This chapter will be divided into three sections: 1) development and validity of the questionnaire, 2) research participants, and 3) procedures.

Development and Validity of Questionnaire

A 24-item questionnaire adapted from Chen et al., (2015) collected data related to the purpose described above. Chen conducted two studies to investigate whether psychological needs for autonomy, relatedness, and competence, "contributed to participants' well-being and ill-being, regardless of their cultural background and interpersonal difference in need strength or need desire" (Chen et al., p. 216). Late adolescent participants from Belgium, China, United States and Peru were surveyed. Chen's instrument originated through discussion by seven researchers with various cultural backgrounds who shared a deep understanding of SDT. Using the Basic Psychological Need Satisfaction Scale (BPNS; Ilardi et al., 1993), the Balanced

Measurement of Psychological Needs (BMPN, Sheldon and Hilpert 2012), and relationship need

satisfaction scale (La Guardia et al., 2000), researchers generated 24-items which capture the

three constructs defined in SDT. Each item was divided to represent needs satisfaction and needs

frustration. All items were designed with a five-point Likert scale (completely untrue to

completely true). The original questionnaire, each item identified with the three constructs of

SDT and satisfaction or frustration, can be found in the Appendix.

Adaptation of Chen's scale ensured reliability and validity for the current study.

Reliability for the autonomy satisfaction subscale for Belgium and Chinese participants were

$r = .69$ and $r = .47$, respectively. Reliability for the relatedness satisfaction subscale for Belgium

and Chinese participants were $r = .77$ and $r = .72$, respectively. Reliability for the competence

satisfaction subscale for Belgium and Chinese participants were $r = .81$ and $r = .79$, respectively.

Chen's instrument was adapted for this study by adjusting the language of the items to

reflect the orchestra classroom setting. The name of the adapted instrument is Basic

Psychological Needs Satisfaction in Orchestra (BPNSO). Chen's survey and BPNSO can be

found in Table 1. The questionnaire maintained the original items related to each of the SDT

constructs and was divided to represent need satisfaction and need frustration.

A panel of experts including two university faculty and one orchestra director read items

in the survey. The experts determined the items accurately reflected the purpose statement

designated by the researcher and could be comprehended by the participants.

Table 1. Chen et al., (2015) Questionnaire and BPNSO

Original Chen et al., (2015) Items	Adapted Items (BPNSO)
I feel a sense of choice and freedom in the things I undertake	In orchestra, I feel a sense of choice and freedom in the things I undertake
I feel that my decisions reflect what I really want	In orchestra, I feel that my decisions reflect what I really want
I feel my choices express who I really am	In orchestra, I feel my choices express who I really am

Table 1. Chen et al., (2015) Questionnaire and BPNSO Cont'd

Original Chen et al., (2015) Items	Adapted Items (BPNSO)
I feel I have been doing what really interests me	In orchestra, I feel I have been doing what really interests me
Most of the things I do feel like "I have to"	In orchestra, most of the things I do feel like "I have to"
I feel forced to do many things I wouldn't choose to do	In orchestra, I feel forced to do many things I wouldn't choose to do
I feel pressured to do too many things	In orchestra, I feel pressured to do too many things
My daily activities feel like a chain of obligations	In orchestra, my daily activities feel like a chain of obligations
I feel that the people I care about also care about me	In orchestra, I feel that the people I care about also care about me
I feel connected with people who care for me, and for whom I care	In orchestra, I feel connected with people who care for me, and for whom I care
I feel close and connected with other people who are important to me	In orchestra, I feel close and connected with other people who are important to me
I experience a warm feeling with the people I spend time with	In orchestra, I experience a warm feeling with the people I spend time with
I feel excluded from the group I want to belong to	In orchestra, I feel excluded from the group I want to belong to
I feel that people who are important to me are cold and distant towards me	In orchestra, I feel that people who are important to me are cold and distant towards me
I have the impression that people I spend time with dislike me	In orchestra, I have the impression that people I spend time with dislike me
I feel the relationships I have are just superficial	In orchestra, I feel the relationships I have are just superficial
I feel confident that I can do things well	In orchestra, I feel confident that I can do things well
I feel capable at what I do	In orchestra, I feel capable at what I do
I feel competent to achieve my goals	In orchestra, I feel competent to achieve my goals
I feel I can successfully complete difficult tasks	In orchestra, I feel I can successfully complete difficult tasks
I have serious doubts about whether I can do things well	In orchestra, I have serious doubts about whether I can do things well
I feel disappointed with many of my performances	In orchestra, I feel disappointed with many of my performances
I feel insecure about my abilities	In orchestra, I feel insecure about my abilities
I feel like a failure because of the mistakes I make	In orchestra, I feel like a failure because of the mistakes I make

Research Participants

Description of the School District

The school district in the current study was in a suburb of a mid-sized Midwestern city. The district provided instruction to approximately 5,700 students from preschool through 12th grade. 89% of residents in the community identified as white, 4% Asian alone, 3% Hispanic, 2% Black alone, 2% two or more races, and less than 1% other races (U.S. Census, n.d.). In 2000, the city's population was approximately 16,945 and increased to approximately 20,623 people in 2010 (U.S. Census, n.d.). It was estimated by the United States Census that the population in 2019 increased to 21,626 (U.S. Census, n.d.). The city's estimated median household income was approximately $91,281 per year (U.S. Census, n.d.). Less than 8% of students were enrolled in the free and reduced lunch program.

The school district included a preschool, four elementary schools, one intermediate school for 5th and 6th grade, one junior high for 7th and 8th grade, and one high school. The intermediate school opened in Fall 2017 to alleviate the growing population in the city.

The district has remained on the National Association for Music Merchant's Best Communities for Music Education list for 14 consecutive years (2020, n.d.). The music program included orchestra, band, choir and general music. All students began with general music education in kindergarten. In fifth grade, students were required to enroll in an arts credit either in orchestra, band, choir, or visual arts. Most students chose a performing arts class and were encouraged to continue through twelfth grade.

The schedule in each school from fifth through twelfth grade allowed "doubling", where students participate in two music ensembles, if they were interested. The school schedule in grades five through eight allowed students to enroll in two music ensembles, such as band and

orchestra, as part of their daily schedule. Students in grades nine through twelve were permitted to continue participation in two music ensembles. Students either enrolled in two separate music ensemble classes if they had room in their schedule, or students alternated between two music ensembles on a rotating daily schedule. For example, a student attended band on Monday and Wednesday and attended orchestra on Tuesday-Thursday, then Fridays alternated between both ensembles every week.

Description of the Orchestra Program

The orchestra program in the district began in fifth grade at the intermediate school. The fifth and sixth grade orchestra classes were organized by grade level and divided into groups by instrument type: high strings and low strings. Students met two to three times a week for 45 minutes on a rotating schedule. Fifth and sixth grade orchestra students performed two concerts a year. There were 168 students participating in orchestra in fifth and sixth grade at the time the questionnaire was administered.

In seventh grade to eighth grade, high and low strings were combined to rehearse as an orchestra five days a week for 45 minutes. In junior high, seventh and eighth grade students were assigned to either a grade level orchestra or an advanced string ensemble. Junior high students performed three concerts a year. There were 140 students participating in orchestra in seventh and eighth grade at the time the questionnaire was administered.

At the high school, students continued to rehearse as a string orchestra five days a week for 50 minutes. Approximately every two weeks, high school students followed a block schedule which provided a 90-minute rehearsal. There were five high school orchestras that met during the school day, plus one full symphony orchestra that met one night a week. Students could participate in orchestra by grade level without an audition or students could choose to audition

for an advanced ensemble. High school students performed a minimum of four concerts a year. There were 172 students participating in a string orchestra in ninth through twelfth grade at the time the questionnaire was administered.

The high school offered a symphony orchestra which combined students enrolled in the orchestra program and the band program into one ensemble. The symphony orchestra rehearsed one night a week for 90 minutes and performed four concerts a year. There were 64 students participating in the symphony orchestra in ninth through twelfth grade who completed an audition to enroll in the ensemble. Student participants enrolled in the high school symphony orchestra were not included in the questionnaire. A requirement to be a member of the ensemble was to be enrolled in an orchestra or band class that meets during the school day, therefore most orchestra students participated in the questionnaire during their orchestra class.

Ensembles from the orchestra program have performed at five national and state music education conferences in the last five years. Students regularly performed at state Solo and Ensemble, District, Region and All-State Orchestras. The orchestra program collaborated annually with community vocal and symphonic ensembles for concerts.

A summer lesson program extended learning from the school year into the summer months. High school students received training to teach private lessons to younger students enrolled in the program. Lessons took place one day a week for six weeks during the summer months.

A booster organization supported the program with five board members and an average of nine members regularly attending quarterly meetings. The booster organization fundraised often to sustain the financial needs of the orchestra program. Approximately $6,000 of

scholarships were awarded annually to students for private lessons and summer camps. Students and parents completed an application to receive the scholarship.

Orchestra Program Retention Data

One pillar of a great music program described by Phillips (2016) was recruitment and retention. Smith, et al., (2018) investigated the status of string orchestra programs in schools and determined that an average of 73% of students continued from the first to second year of instruction, 69% continued from elementary to middle/junior high, and 69% continued from middle/junior high to high school. Hamann, et al., (2002) reported a similar retention rate of school orchestra programs.

The orchestra program retention data is displayed in Table 2. The data was organized to display the retention by graduating class. Each class includes enrollment from each year in the orchestra program beginning in grade five through grade twelve.

Table 2. Orchestra Program Retention Rate

	5	6	7	8	9	10	11	12
Class of 2020	115	100	76	71	54	49	42	38
Class of 2021	124	93	74	68	47	44	43	
Class of 2022	163	97	73	71	52	50		
Class of 2023	153	96	85	75	41			
Class of 2024	144	112	83	71				
Class of 2025	103	86	69					
Class of 2026	103	85						
Class of 2027	83							

In comparison with the retention rates reported by Smith, et al., (2018), the school district in the present study has an average of 76% of students continued from the first to second year of instruction, 79% continued from elementary to middle/junior high, and 68% continued from middle/junior high school to high school.

The retention rates were calculated by dividing the second year of instruction (sixth grade) enrollment numbers by the first year of instruction (fifth grade) enrollment numbers, then averaging. The class of 2027 was not included due to it being the first year participating in the orchestra program. The elementary to middle/junior high retention rate was calculated similarly using sixth and seventh grade. The middle/junior high school to high school was calculated similarly using eighth and ninth grade.

The retention rates in the school district were similar or above the average reported by Smith, et al., (2018). Recruitment and retention being one of the strengths in the orchestra program in the district distinguishes the orchestra program from others.

Description of Orchestra Teachers

Four orchestra teachers were employed by the school district. Teachers instructed ensembles from grades five through twelve: two of which had a master's degree and/or additional educational licenses, had a combined 41 years of teaching experience, and three whose primary instrument are stringed instruments. Members of the orchestra teaching staff were employed by community music schools, youth orchestras, and frequently hosted state music education events such as honors, region, and state orchestras.

Each orchestra teacher had a different teaching assignment. One teacher directed the fifth and sixth grade classes, and assisted the seventh and eighth grade orchestras. One teacher directed the seventh and eighth grade orchestras. One teacher directed and assisted the high school orchestras, and assisted fifth and sixth grade classes. One teacher directed and assisted the high school orchestras.

Teacher Researcher

I am one of the orchestra teachers from the school district in the present study. I teach at the junior high school and have also taught orchestra in the other school buildings. I attended the school district for two years and graduated from the high school in the present study.

To help ensure that participants' responses were not influenced by my presence during data collection, participant data was submitted anonymously. Students were informed there was no impact on their grade in orchestra based on participation in the study. To avoid a compromise in the validity of the data, all data collection was administered with Qualtrics.

Description of the Participants

There were 462 student participants in grades five through twelve enrolled in an orchestra class in a single school district. The questionnaire was intended for 480 students but 18 students were absent on the day the questionnaire was administered. 96% percent of the intended participants completed the survey. Students who were absent were not asked to make up the questionnaire. Descriptive data can be found in Table 3 through Table 6.

Table 3. What orchestra instrument do you play?

Instrument	*N*	Percent
Violin	225	48.7
Viola	87	18.8
Cello	95	20.6
Bass	44	9.5
Harp	11	2.4
Total	462	100

Table 4. What grade are you in?

Grade	*N*	Percent
Fifth Grade	84	18.2
Sixth Grade	80	17.3
Seventh Grade	66	14.3
Eighth Grade	65	14.1

Table 4. What grade are you in? Cont'd

Grade	N	Percent
Ninth Grade	45	9.7
Tenth Grade	48	10.4
Eleventh Grade	39	8.4
Twelfth Grade	35	7.6
Total	462	100

Table 5. What is your gender?

Gender	N	Percent
Male	176	38.1
Female	281	60.8
Other (fill in blank)	5	1.1
Total	462	100

Table 6. How many years have you had private lessons?

Years	N	Percent
0 years	265	57.4
Less than 1 year	60	13
1 years	34	7.4
2 years	27	5.8
3 years	23	5
4 years	14	3
5 years	13	2.8
6 years	10	2.2
7 years	6	1.3
8 years	3	0.6
9 years	3	0.6
10 years	2	0.4
11 years	1	0.2
12 years	1	0.2
Total	462	100

Procedures

Parents of the participants were provided the option to remove their children from participation in the survey with a parent permission letter (Appendix). Students and parents understood participation in the questionnaire would not affect their grade. School administrators and the University of Michigan Institutional Review Board (IRB) approved the study (Appendix). Before the questionnaire was administered, I read a script to participants provided in the Appendix.

Pilot Test

A pilot test was conducted in October 2019 to members of an area youth orchestra. The purpose of the pilot test was to (1) ensure adequate time was allowed, (2) ensure the questionnaire link was functional, (3) examine the items' readability for the intended audience, and (4) verify that the items accurately represented the purpose of this study.

Questionnaire items were randomized in the pilot study. The average time to complete the questionnaire was approximately 10 minutes. Participants included 36 members in grades four through nine. Parents of the youth orchestra participants were provided the option to remove their child from participation in the survey with a parent permission letter (Appendix). I was the director of the youth orchestra who participated in this pilot study.

During the administration of the pilot study, participants sought out help from the researcher and another orchestra conductor. The participants indicated a lack of clarity from the questions and terms, particularly the younger participants.

In the main study, the researcher ensured additional support was available in the younger grades. Multiple orchestra teachers were available to respond to individual student questions. This may have been a limitation due to the lack of control of the definition given by the various

orchestra teachers and the participants' interpretation of the definition. The researcher did not change the items on the questionnaire for the main study.

Main Study

I administered the questionnaire in November 2019 through Qualtrics during the students' orchestra class. Students used school provided laptops (Chromebook and MacBook Air) to complete the survey. Survey items were randomized. 462 students participated in the survey. 18 students were absent on the day the survey was administered and did not make-up their participation in the survey.

Summary of Method and Procedures

Student participants ($N = 462$) in grades five through twelve enrolled in the public-school orchestra program located in a suburban city located near a mid-sized Midwestern city in the 2019-2020 school year participated in the 28-item questionnaire. Chapter Four will review the data that was collected from the current study. Data was organized by reviewing responses regarding three constructs of SDT in research questions one through three. Data from responses regarding research question four will then be presented.

Chapter IV

Results

Main Study

The results from the current study will be reviewed in this chapter. Data was organized by reviewing responses regarding three constructs of SDT in research questions one through three. Data from responses regarding research question four will be presented then summarized. The research questions are restated near each heading.

Research Questions 1-3

Research questions one through three were: 1) To what extent does participating in orchestra both satisfy and frustrate students' need for competence? 2) To what extent does participating in orchestra both satisfy and frustrate students' need for relatedness? 3) To what extent does participating in orchestra both satisfy and frustrate students' need for autonomy?

Descriptive data on the participants' responses to the 24 items of the survey regarding their psychological needs being met in orchestra are presented in Table 7, including the mean and standard deviation. Most items were completed by the 462 participants. Two participants did not complete two of the items.

Table 7 is organized to identify each item as one of the three constructs of SDT and satisfaction or frustration. Items 1-4 are identified as Autonomy Satisfaction and items 5-8 are identified as Autonomy Frustration. Items 9-12 are identified as Relatedness Satisfaction and 13-16 are identified as Relatedness Frustration. Items 17-20 are identified as Competence Satisfaction and 21-24 are identified as Competence Frustration. The original Chen et al., (2015) can be found in the Appendix.

Table 7. Basic Psychological Needs Satisfaction in Orchestra.

BPNSO Item	CU	SU	Ne	ST	CT	*M*	*SD*
Autonomy Satisfaction α = .58						**3.74**	**0.67**
1. In orchestra, I feel a sense of choice and freedom in the things I undertake	2.8%	23.2%	37.2%	28.1%	8.7%	3.17	0.97
2. In orchestra, I feel that my decisions reflect what I really want	6.1%	7.6%	25.6%	38.2%	22.6%	3.64	1.1
3. In orchestra, I feel my choices express who I really am	3.3%	6.5%	19.5%	38.6%	32.1%	3.9	1.03
4. In orchestra, I feel I have been doing what really interests me	1.7%	5.8%	10.2%	29.4%	52.8%	4.26	0.98
Autonomy Frustration, α = .74						**2.11**	**0.84**
5. In orchestra, most of the things I do feel like "I have to"	26.2%	28.6%	20.6%	18.6%	6.1%	2.5	1.23
6. In orchestra, I feel forced to do many things I wouldn't choose to do	60.0%	22.9%	8.9%	6.9%	1.3%	1.67	9.88
7. In orchestra, I feel pressured to do too many things	47.1%	25.8%	15.0%	9.5%	2.6%	1.95	1.11
8. In orchestra, my daily activities feel like a chain of obligations	32.0%	23.5%	27.4%	12.8%	4.3%	2.34	1.18
Relatedness Satisfaction, α = .85						**4.09**	**0.81**
9. In orchestra, I feel that the people I care about also care about me	1.7%	4.3%	13.0%	32.5%	48.5%	4.22	0.95
10. In orchestra, I feel connected with people who care for me, and for whom I care	2.6%	4.3%	13.0%	34.7%	45.3%	4.16	0.98
11. In orchestra, I feel close and connected with other people who are important to me	1.7%	5.2%	15.0%	35.1%	43.0%	4.12	0.97
12. In orchestra, I experience a warm feeling with the people I spend time with	3.0%	8.0%	22.9%	33.5%	32.5%	3.84	1.06
Relatedness Frustration, α = .69						**1.74**	**0.74**
13. In orchestra, I feel excluded from the group I want to belong to	63.2%	20.1%	8.7%	5.4%	2.6%	1.64	1.02
14. In orchestra, I feel that people who are important to me are cold and distant towards me	67.7%	18.6%	8.4%	4.1%	1.1%	1.52	0.89
15. In orchestra, I have the impression that people I spend time with dislike me	54.5%	24.9%	11.3%	8.2%	1.1%	1.76	1.02
16. In orchestra, I feel the relationships I have are just superficial	45.5%	19.9%	22.5%	8.7%	3.5%	2.05	1.16

Table 7. Basic Psychological Needs Satisfaction in Orchestra Cont'd

BPNSO Item	CU	SU	Ne	ST	CT	*M*	*SD*
Competence Satisfaction, α = .81						**4.14**	**0.71**
17. In orchestra, I feel confident that I can do things well	1.7%	4.8%	15.6%	43.4%	34.5%	4.04	0.92
18. In orchestra, I feel capable at what I do	0.90%	3.2%	10.8%	39.0%	46.1%	4.26	0.84
19. In orchestra, I feel competent to achieve my goals	1.1%	3.9%	16.0%	33.1%	45.9%	4.19	0.92
20. In orchestra, I feel I can successfully complete difficult tasks	0.90%	5.0%	14.5%	44.8%	34.8%	4.08	0.88
Competence Frustration, α = .78						**2.18**	**0.91**
21. In orchestra, I have serious doubts about whether I can do things well	33.8%	30.3%	18.0%	14.7%	3.2%	2.23	1.16
22. In orchestra, I feel disappointed with many of my performances	33.4%	35.1%	15.0%	14.1%	2.4%	2.17	1.11
23. In orchestra, I feel insecure about my abilities	31.2%	25.8%	17.6%	19.3%	6.1%	2.43	1.27
24. In orchestra, I feel like a failure because of the mistakes I make	52.8%	23.6%	11.3%	8.9%	3.5%	1.87	1.14

Note: CU = Completely Untrue; SU = Somewhat Untrue; Ne = Neutral; ST = Somewhat True; CT = Completely True, *N* = 460

The reliability analysis for the main study is reported in Table 7, organized by SDT construct. Comparing each of the Needs Satisfaction, it is apparent that participants reported feeling a sense of satisfaction with Competence (*M=4.14*) in orchestra slightly greater than Relatedness (*M=4.09*), followed by the least amount of satisfaction with Autonomy (*M=3.74*). Comparing each of the Needs Frustration, it was apparent that participants reported feeling the greatest sense of frustration with Competence (*M=2.18*) in orchestra slightly greater than Autonomy (*M=2.11*), followed by the least amount of frustration with Relatedness (*M=1.74*). The low standard deviation for each construct satisfaction and frustration indicates participants' responses were not widely varied.

The Cronbach's alpha from each subscale indicates reliability for BPNSO items. Chen

(2015) reported Belgian participants' Cronbach's alpha for autonomy, relatedness, competence satisfaction subscales respectively, .69, .77, .81. Chen (2015) reported Chinese participants' Cronbach's alpha for autonomy, relatedness, competence satisfaction subscales respectively, 0.47, .72, .79. The BPNSO Cronbach's alpha for autonomy, relatedness, competence satisfaction subscales respectively are .58, .85, and 81 are comparable to the Chen (2015). The BPNSO satisfaction subscale with lowest Cronbach's Alpha was autonomy satisfaction with α = .58. This was consistent with Chen (2015), who reported autonomy satisfaction as having the lowest reliability amongst Chinese and Belgian participants.

Research Question 4

Research question four was: How does student competence, relatedness, and autonomy satisfaction and frustration in orchestra differ based on selected variables (grade level, gender, instrument, and private lessons)?

To answer research question four, I computed the mean and standard deviation for all six subscales based on: a) grade level, b) gender, c) instrument, and d) private lessons. Descriptive data for participants based on grade level is presented in Table 8. Descriptive data for participants based on gender is presented in Table 9. Descriptive data for participants based on instrument is presented in Table 10. Descriptive data for participants based on number of years in private lessons is presented in Table 11.

Table 8. Grade Level Subscales

	AS		AF		RS		RF		CS		CF	
Grade	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
5th Grade (*N*=84)	3.51	0.65	2.19	0.82	3.8	0.97	1.66	0.82	4.05	0.85	1.98	0.88
6th Grade (*N*=80)	3.66	0.78	2.28	0.91	3.92	0.85	1.72	0.79	4.15	0.76	2	0.81

Table 8. Grade Level Subscales Cont'd

Grade	AS		AF		RS		RF		CS		CF	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
8th Grade (*N*=65)	3.91	0.56	1.96	0.72	4.34	0.59	1.77	0.65	4.22	0.56	2.25	0.84
9th Grade (*N*=45)	3.74	0.67	2.14	0.87	3.96	0.85	1.84	0.8	4.17	0.68	2.35	1.01
10th Grade (*N*=48)	3.75	0.58	1.99	0.87	4.04	0.75	1.94	0.74	4	0.66	2.53	0.97
11th Grade (*N* = 39)	3.78	0.7	2.12	0.96	4.31	0.66	1.65	0.68	4.13	0.63	2.4	1.03
12th Grade (*N*=35)	3.74	0.67	2.18	0.9	4.09	0.82	1.76	0.8	4.19	0.62	2.09	0.9

Note: AS = Autonomy Satisfaction; AF = Autonomy Frustration; RS = Relatedness Satisfaction; RF = Relatedness Frustration; CS = Competence Satisfaction; CF = Competence Frustration

A One-Way ANOVA was used to compare participants' satisfaction and frustration scores based on grade level. A Bonferroni correction was used to reduce the possibility of a Type 1 error. Alpha level was set at .008 as the threshold for statistical significance (i.e., α = .05/6 comparisons). Significant differences were found based on grade level for Autonomy Satisfaction, $F(7, 452) = 2.99$, $p = .004$, and for Relatedness Satisfaction $F(7, 452) = 5.51$, $p <$ .001. Post-hoc comparisons using Tukey's HSD revealed significant differences in Autonomy Satisfaction between fifth-grade and seventh-grade ($p = .004$) and between fifth-grade and eighth-grade ($p = .005$). Differences in Relatedness Satisfaction were found between fifth-grade and seventh-grade ($p < .001$), fifth-grade and eighth-grade ($p = .001$), and sixth-grade and seventh-grade ($p = .002$).

Table 9. Gender Subscales

Gender	AS		AF		RS		RF		CS		CF	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Male (*N*=176)	3.78	0.06	2.14	0.08	3.96	0.07	1.85	0.07	4.25	0.07	2.08	0.08
Female (*N*=281)	3.83	0.05	1.95	0.07	4.27	0.06	1.66	0.06	4.17	0.06	2.32	0.71
Other (fill in blank) (*N*=5)	3.2	0.29	2.4	0.37	2.95	0.35	2.75	2.13	2.95	0.33	3.2	0.39

Note: AS = Autonomy Satisfaction; AF = Autonomy Frustration; RS = Relatedness Satisfaction; RF = Relatedness Frustration; CS = Competence Satisfaction; CF = Competence Frustration

An independent samples t-test was used to compare male and female participants' satisfaction and frustration scores (there were too few participants who reported "other" $N = 5$, to include for analysis). A Bonferroni correction was used to reduce the possibility of a Type 1 error. Alpha level was set at .008 as the threshold for statistical significance (i.e., $\alpha = .05/6$ comparisons). A significant difference was found between males ($M = 3.96$, $SD = .81$, $N = 174$) and females ($M = 4.19$, $SD = .79$, $N = 281$) on Relatedness Satisfaction, $t(453) = -2.937$, $p = .003$. No other significant differences were found.

Table 10. Instrument Subscales

Instrument	AS		AF		RS		RF		CS		CF	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Violin (*N*=225)	3.79	0.06	1.99	0.08	4.15	0.07	1.63	0.07	4.15	0.07	2.18	0.08
Viola (*N*=87)	3.81	0.09	2.06	0.11	4.1	0.1	1.76	0.09	4.18	0.1	2.24	0.12
Cello (*N*=95)	3.85	0.08	2.12	0.11	4.15	0.1	1.95	0.09	4.2	0.09	2.37	0.11
Bass (*N*=44)	3.67	0.11	2.03	0.15	3.73	0.14	1.94	0.13	4.1	0.13	2.23	0.16
Harp (*N*=11)	3.87	0.2	2.17	0.26	4.44	0.25	1.54	0.22	4.3	0.23	2.06	0.28

Note: AS = Autonomy Satisfaction; AF = Autonomy Frustration; RS = Relatedness Satisfaction; RF = Relatedness Frustration; CS = Competence Satisfaction; CF = Competence Frustration

A One-Way ANOVA was used to compare participants' satisfaction and frustration scores based on instrument (violin, viola, cello, bass, harp). A Bonferroni correction was used to reduce the possibility of a Type 1 error. Alpha level was set at .008 as the threshold for statistical significance (i.e., α = .05/6 comparisons). No significant differences were found based on instrument.

Table 11. Years of Private Lessons Subscales

Years of Private Lessons	AS		AF		RS		RF		CS		CF	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
0 Years (*N*=265)	3.64	0.06	2.07	0.07	3.98	0.07	1.85	0.06	4.04	0.07	2.22	0.08
Less than 1 year (*N*=60)	3.78	0.1	2.03	0.13	4.24	0.12	1.78	0.11	4.15	0.11	2.36	0.13
1 year (*N*=34)	3.82	0.12	2.01	0.16	3.93	0.15	1.56	0.14	4.12	0.14	2.27	0.17
2 years (*N*=27)	3.8	1.3	2.11	0.17	4.07	0.16	1.81	0.15	4.14	0.15	2.31	0.18
3 years (*N*=23)	3.75	1.5	2.27	0.19	4	0.18	1.73	0.16	4.41	0.17	2.11	0.2
4 years (*N*=14)	4	1.8	1.75	0.23	4.36	0.22	1.98	0.2	4.3	0.21	2.52	0.25
5 years (*N*=13)	3.67	1.8	2.26	0.24	4.16	0.22	1.73	0.2	4.23	0.21	2.05	0.25
6 years (*N*=10)	4.23	0.21	2.38	0.28	4.54	0.26	1.91	0.24	4.36	0.25	2.21	0.3
7 years (*N*=6)	4.29	0.26	1.54	0.34	4.17	0.32	1.38	0.29	4.46	0.3	2	0.36
8 years (*N*=3)	4.17	0.37	2.08	0.48	4.75	0.45	1.33	0.41	4.83	0.43	1.42	0.51
9 years (*N*=3)	3.92	0.37	1.75	0.48	3.83	0.45	1.75	0.41	4	0.43	2.33	0.51
10 years (*N*=2)	4.5	0.45	1	0.59	4.75	0.55	1.5	0.5	3.88	0.52	2.5	0.62
11 years (*N*=1)	4.25	0.64	1	0.84	4.5	0.78	1	0.71	5	0.74	1	0.88
12 years (*N*=1)	3.25	0.64	2.75	0.84	4	0.78	2.75	0.71	4.25	0.74	2.75	0.88

Note: AS = Autonomy Satisfaction; AF = Autonomy Frustration; RS = Relatedness Satisfaction; RF = Relatedness Frustration; CS = Competence Satisfaction; CF = Competence Frustration

To compare participants' satisfaction and frustration scores based on years of private lessons, a new three-level categorical variable was created (0 years, Less than 2 years, More than 2 years). A Bonferroni correction was used to reduce the possibility of a Type 1 error. A

significant difference was found based on years of private lessons for Autonomy Satisfaction, $F(2, 457) = 6.76, p = .001$. Post-hoc comparisons using Tukey's HSD revealed significant differences in Autonomy Satisfaction between participants with 0 years of lessons and those with more than 2 years of lessons ($p = .006$).

Summary of Chapter Four

Data reviewed in this chapter is organized by research question. Data concerning research questions one through three indicated student participants' satisfaction or frustration in their psychological needs for autonomy, relatedness, and autonomy. Data concerning research question four compared their responses from the items on the questionnaire to their grade, gender, instrument and years of private lessons. Chapter Five will discuss the results from the current study, implications for music educators, and recommendations for future research.

Chapter V

Discussion

Summary

The purpose of this study was to the examine the extent to which students' psychological needs as described by Evans (2015) were being met through participation in orchestra. The study examined satisfaction and frustration of three psychological constructs associated with Self-Determination Theory: a) competence, b) relatedness, and c) autonomy. The study examined how student competence, relatedness, and autonomy satisfaction and frustration in orchestra differs based on grade level, gender, instrument, and private lessons.

Participants included students in fifth through twelfth grade enrolled in a public-school orchestra program in a suburban city located near a mid-sized Midwestern city in the 2019-2020 school year. 462 students completed a 28-item questionnaire, adapted from Chen et al., (2015). The adapted questionnaire was titled Basic Psychological Needs Satisfaction in Orchestra (BPNSO). Survey items were randomized. All items were designed with a five-point scale (completely untrue to completely true). Participants completed the questionnaire in November 2019 through Qualtrics during the students' orchestra class. Students used school provided laptops to complete the questionnaire.

Discussion

This section will be organized by first addressing the three constructs of SDT in research questions one through three. Discussion regarding research question four will follow. Research questions are restated near each heading.

Research Question 1-3

Research questions one through three were: 1) To what extent does participating in orchestra both satisfy and frustrate students' need for competence? 2) To what extent does participating in orchestra both satisfy and frustrate students' need for relatedness? 3) To what extent does participating in orchestra both satisfy and frustrate students' need for autonomy?

The current study revealed that students' need for competence, relatedness, and autonomy was greatly satisfied through participation in orchestra. The mean satisfaction score for each of the subscales were: a) competence (*M*=4.14), b) relatedness (*M=4*.09), and c) autonomy (*M=3*.74). Data from the current study supports Deci and Ryan (2000) who stated that individuals experiencing reasonable needs satisfaction don't seek out satisfaction of their needs, but rather continued doing an activity that was of interest. Participants in the orchestra program reported their psychological needs being satisfied through participation in orchestra, and therefore continued to participate in the program. This predominant finding informs researchers and music educators that students' psychological needs fulfillment is an essential consideration in a music program.

Student participants reported the greatest satisfaction with competence in orchestra (*M*=4.14). Evans (2015) reported students' perception of their musical abilities determine their decision to continue music instruction. The data from the current study supports Evans (2015) due to the high level of competence satisfaction reported by participants. The students enrolled in the program would not be participating without their psychological need for competence being fulfilled.

Although student participants reported the greatest satisfaction with competence in orchestra, they also reported the greatest frustration with competence (*M*=2.18). Two items from

the questionnaire contributed to the score: 1) Item 21: In orchestra, I have serious doubts about whether I can do things well (*M*=2.23), and 2) Item 23: In orchestra, I feel insecure about my abilities (*M*=2.43). This data may be better understood when examining the intersection of gender in the discussion section under research question four.

Participants reported relatedness satisfaction as another aspect of fulfillment through participation in orchestra (*M*=4.09). Researchers have considered multiple factors for retention of students in music program (Martignetti, 1965; Wolfle, 1969; Morehouse, 1987; Klinedinst, 1991; Corenblum and Marshall, 1998; Perkins, 1998). Researchers have often examined the social aspects of the ensemble as one of the reasons students quit participation in music ensembles. A strong relatedness satisfaction reported by participants indicates a connectedness and sense of community in the orchestra classrooms within this school district.

Relatedness frustration is the lowest reported frustration subscale from this study (*M*=1.74). A high satisfaction score and a low frustration score indicates the relatedness construct is the strongest of the three SDT constructs for this program. This data informs researchers and music educators that students' psychological need for relatedness is an essential aspect of retaining students in a music program.

Student participants reported autonomy satisfaction as the lowest of the satisfaction subscales (*M*= 3.74). Autonomy frustration is not the highest frustration subscale (*M*=2.11). Data from this subscale is strong and indicates a unique aspect of student psychological needs fulfillment in the music classroom. Students may have reported autonomy frustration in a school orchestra program because of the group or ensemble setting taking place in a music classroom. In general, students do not dictate the music ensemble curriculum, schedule or design performances, etc. SDT posits that students can make great progress when their autonomy is

supported (Ryan & Deci, 2017). There are many opportunities music educators can create to satisfy students psychological need for autonomy in the music ensemble.

An introspective consideration for music educators was presented by Bonneville-Roussy et al., (2013). Bonneville-Roussy et al., defines an autonomy-supportive teacher as one who considers students as self-determined individuals who can master their own learning, or making choices, and who are aware of their own needs. Teachers evaluate based on progress and maintain awareness for student needs. Actions of an autonomy-supportive teacher provide opportunities for student freedom. An autonomy-supportive teacher should not be confused with passive or static characteristics, but rather a teacher who provides students with both choice and structure.

Music educators have discussed practical opportunities to incorporate in the music education classroom. Opportunities include but are not limited to students: a) selecting repertoire, b) conducting the ensemble, c) rehearsing the ensemble, d) explaining why certain musical tasks are needed, e) listening and responding to student performances, f) communicating expectations, g) designing concert programs, h) independently practicing, i) leading warm-ups, j) creating how-to videos, k) participating in composition activities, and l) participating in improvisation activities.

Consistent with previous SDT research in music education (Deci and Ryan, 2000; Evans, 2015; Evans and Liu, 2019), the data from the current study reports that examining psychological needs satisfaction and frustration is critical when discussing students' participation in music education. Student participants reported their psychological need for autonomy, competence and relatedness being greatly satisfied through participation in orchestra. This data informs researchers and music educators that great attention should be paid to each of the students'

psychological needs. Music educators should maintain a high priority to fulfill their students'

need for autonomy, relatedness and competence through participation in an ensemble.

Research Question 4

Research question four was: How does student competence, relatedness, and autonomy

satisfaction and frustration in orchestra differ based on selected variables (grade level, gender,

instrument, and private lessons)?

Participants enrolled in the orchestra program attend three different school buildings.

Participants in grades five and six attend an intermediate school, participants in seventh and

eighth grade attend a junior high school, and participants in grades nine through twelve attend a

high school. The grade level data possesses similarities amongst the participants in each

building. For example, the autonomy satisfaction subscale mean presents a difference of .15

between participants in fifth and sixth grade attending the intermediate school. The autonomy

satisfaction mean was identical from seventh and eighth grade students at the junior high.

Participants in grades nine through twelve differ in between 3.74 and 3.78. This may be due to

the students' similarity in age and experience in each school building. It may also be due to each

building having the same orchestra teacher(s) directing orchestra classes in that building, so the

students' experience was similar.

The autonomy satisfaction and relatedness satisfaction means are the lowest from fifth-

grade participants. There are many explanations for fifth grade students reporting this data. The

fifth-grade participants are the newest members of the orchestra program, therefore have the least

amount of experience playing their instrument. The questionnaire was administered in November

2019, which was before fifth grade students performed their first concert.

Fifth grade students have not been provided opportunities to connect with other members

of the orchestra class for as long as participants in older grades. This may contribute to a lower autonomy satisfaction and relatedness satisfaction.

Fifth grade students in the district also possess varied background in music education with four different elementary music experiences. Fifth grade may be the first time where students across the district are experiencing similar music education experiences. The intermediate school in the district hosts fifth and sixth grade students. The four elementary schools in the district contain kindergarten through fourth grade students. Each elementary school has a different general music teacher. This may contribute to a lower relatedness or competence satisfaction than students in older grades who have had the similar experiences over multiple years, and had an opportunity to form a bond in orchestra class with students in their grade.

Lastly, the fifth-grade orchestra classes are among the largest of the orchestra classes. The fifth-grade high strings class contains 62 members. It may be challenging for the students to feel competent at a new instrument and form a relationship with members of the class and their orchestra teachers. With many students in the classroom, it may contribute to the lower level of autonomy or relatedness satisfaction reported by fifth-grade students.

Female participants maintain a high level of relatedness satisfaction in comparison to male participants. This could be due to a higher enrollment of females than males in the orchestra program. Female enrollment in the program was nearly 61%. Male participants possess a higher mean in autonomy and relatedness frustration subscales, but female participants possess a higher mean in competence frustration.

Five participants who preferred to self-describe their gender possessed a lower mean in all satisfaction subscales and possessed a higher mean in all frustration subscales. With only five

participants in this category, and because the students described their gender differently, it was challenging to draw further conclusions.

Harp participants reported the highest level of autonomy satisfaction. This may be due to the orchestra programs' harp curriculum. A guest harp instructor was hired through the orchestra boosters and visited the students each week during the orchestra for private lessons. Harpists in the school program were provided more time for individual practice time and private lessons with the instructor than any other instrument in the orchestra.

The music education profession generally operates with the belief that with private instruction, students gain a higher level of competency in music performance. Student participant data from this survey support this belief due to the gradual increase of the competence satisfaction mean over the number of years enrolled in private lessons.

However, the number of years enrolled in private lessons was self-reported by participants, so it may not demonstrate an accurate representation of the data. Participants with one or more years of private lessons possess a higher standard deviation in each subscale, which may be due to the smaller number of participants taking private lessons for multiple years.

Although data was not gathered regarding student socioeconomic status and academic achievement due to vulnerability and potential inaccuracy of self-reporting, asking participants to report years of private lessons as a variable in this study could have measured something other than private lessons. Instead it may be proxy for socioeconomic level. The estimated median household income in the city where the school district was located was approximately $91,281 per year (U.S. Census, n.d.). The variable may also be an indicator of age based on how old the participant was when they started private music instruction.

Limitations of the Current Study

I am one of the orchestra teachers from the school district in the present study. I currently teach in at the junior high school and have also taught at the intermediate and high school. Additionally, I attended the school district as a student for approximately two years and graduated from the high school in the present study.

Participants from one orchestra program in a school district in a suburb of a mid-sized Midwestern city were included in the present study. Although the study included 462 participants, the results are limited to that of one school district.

When administering the main study with younger grades, the researcher ensured additional support was available in the younger grades by asking one or two orchestra teachers to assist with individual student questions. This may have been a limitation due to the lack of control of the definition given by the various orchestra teachers and the participants' interpretation of the definition.

The instrument in this survey was adapted from Chen et al., (2015), who used the instrument in two studies. The first study included late adolescents with an age range of 16-24 years old (p. 220) and the second study included late adolescents with an age range of 16-32 years old (p. 224). The adapted instrument used in the present study was administered to younger participants enrolled in fifth through twelfth grade. The difference in age between the Chen et al., (2015) participants and participants from the present study may have caused limitations in the readability of the questions.

Socioeconomic status and academic achievement were commonly analyzed by researchers, but are not factors considered in the current study due to vulnerability and potential inaccuracy of self-reporting socio-economic status and academic achievement. To maintain

anonymity of the students, the researcher did not gather the data regarding the students'

socioeconomic status and academic achievement.

Recommendations for Future Research

Researchers who wish to apply SDT as a theoretical framework may consider adjusting

the autonomy satisfaction items to improve the reliability of the items. Future research should

continue to examine the retention of exemplar music education programs. Researchers should

continue surveying students who remain in the orchestra program to determine why they

continue to participate. More research in band and choir disciplines should provide a varied

approach to retention for music educators. Successful music programs in school districts in

varied geographic areas should be researched.

Implications for Music Educators

Based on the results of the study, music educators may consider maintaining a priority for

students' psychological needs fulfillment in the classroom. Music educators should consider

maintaining a high priority for students' feeling of relatedness in their classrooms. Music

educators may benefit from considering students' feeling of competence in their classrooms.

Music educators may wish to expand the opportunities they provide for student choice and

freedom in the music classroom.

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Appendix

Chen (2015) Instrument

Q1	I feel a sense of choice and freedom in the things I undertake	Autonomy Satisfaction
Q2	I feel that my decisions reflect what I really want	Autonomy Satisfaction
Q3	I feel my choices express who I really am	Autonomy Satisfaction
Q4	I feel I have been doing what really interests me	Autonomy Satisfaction
Q5	Most of the things I do feel like "I have to"	Autonomy Frustration
Q6	I feel forced to do many things I wouldn't choose to do	Autonomy Frustration
Q7	I feel pressured to do too many things	Autonomy Frustration
Q8	My daily activities feel like a chain of obligations	Autonomy Frustration
Q9	I feel that the people I care about also care about me	Relatedness Satisfaction
Q10	I feel connected with people who care for me, and for whom I care	Relatedness Satisfaction
Q11	I feel close and connected with other people qho are important to me	Relatedness Satisfaction
Q12	I experience a warm feeling with the people I spend time with	Relatedness Satisfaction
Q13	I feel excluded from the group I want to belong to	Relatedness Frustration
Q14	I feel that people who are important to me are cold and distant towards me	Relatedness Frustration
Q15	I have the impression that people I spend time with dislike me	Relatedness Frustration
Q16	I feel the relationships I have are just superficial	Relatedness Frustration
Q17	I feel confident that I can do things well	Competence Satisfaction
Q18	I feel capable at what I do	Competence Satisfaction
Q19	I feel competent to achieve my goals	Competence Satisfaction
Q20	I feel I can successfully complete difficult tasks	Competence Satisfaction
Q21	I have serious doubts about whether I can do things well	Competence Frustration
Q22	I feel disappointed with many of my performances	Competence Frustration
Q23	I feel insecure about my abilities	Competence Frustration
Q24	I feel like a failure because of the mistakes I make	Competence Frustration

Perrysburg Schools

July 31, 2019

To Whom It May Concern:

As Executive Director of Teaching & Learning for Perrysburg Schools, I grant permission to Kathleen Schnerer to conduct research and study orchestra students within our district. In particular, I grant permission for a study titled *Addressing Students' Psychological Needs Through Participation in Orchestra.* Kathleen will be examining the extent to which students' psychological needs are being met through participation in orchestra. She has informed us that all student records will remain confidential.

Additionally, Kathleen Schnerer has informed us that we will be kept informed of her findings.

Sincerely,

Mr. Brent M. Swartzmiller
Executive Director of Teaching & Learning
Perrysburg Exempted Village Schools

Perrysburg Schools

Dear Parent,

In partial fulfillment of the degree Masters of Music Education at the University of Michigan, School of Music, Theater, and Dance, I would like to invite your child to participate in a research study entitled Addressing Students' Psychological Needs Through Participation in Orchestra. You and your child are being contacted because your child is a member of the Perrysburg Schools Orchestra program.

The purpose of my study is to examine the extent to which students' psychological needs are being met through participation in orchestra. All students enrolled in orchestra at Perrysburg Schools in grades 5-12 are eligible to participate.

Next week during their orchestra class, students will be permitted to access a link to a web-based questionnaire that I have developed. The questionnaire will be administered during the orchestra class period next week and contains 28 multiple-choice items which students will rate on a five-point scale. It should take no longer than 10 minutes to complete.

All responses are voluntary and will be kept anonymous. The results of this study may be published, but I will not include any information that would identify you, your child or the school. To protect confidentiality, no names will be used in the questionnaire, or anywhere else in the study.

The University of Michigan Institutional Review Board for research has reviewed and approved this study. Brent Swartzmiller, Executive Director of Teaching and Learning at Perrysburg Schools, and all building principal's grades 5-12 have approved this research study to be conducted with orchestra students in our district.

While your child may not directly benefit from participating in the study, the results of the study will help many music teachers learn about motivations for orchestra students, which may enrich music education for students in Ohio and beyond. There are no risks from participation in this study. There is absolutely no connection between this study and your child's grade or his/her relationship with the orchestra teacher. Having taught orchestra in the district for four years, I know how valuable the orchestra program is to your child. I would be most grateful for your child's participation in this study.

If you are willing to grant permission for your child to participate, you do not have to take any action. If you do not want your child to participate, please return the bottom portion of this letter with your signature. Please let me know if you have any questions.

Sincerely,

Kathleen Schnerer, Orchestra Director
kschnerer@perrysburgschools.net
(231) 499-0600

By signing this document, you are **removing** your child, _____,
from participation in the study entitled Addressing Students' Psychological Needs Through Participation in Orchestra. Please return by **Wednesday, November 13th, 2019.**

_____   _____
Parent Signature   Date

Ensuring all students achieve their greatest potential

www.perrysburgschools.net

Script

Thank you for your participation in my Master's Thesis Survey titled, Addressing Students' Psychological Needs Through Participation in Orchestra. Your survey responses today will be recorded, complied, then analyzed by myself and members of the University of Michigan faculty.

The purpose of the study is to examine the extent to which students' psychological needs are being met through participation in orchestra.

Your survey responses will be submitted anonymously. Results will only be viewed by myself and faculty members at the University of Michigan. Please be honest in your feedback, as it will have no impact on your grade, participation in Perrysburg Orchestra program, or the directors' opinion of you.

The survey contains 28-multiple choice questions. Most questions ask participants to rate the statement on a scale from 1 – completely untrue to 5 – completely true. Please take your time reading each statement to make your selection correctly. Students who have a question or are confused during the survey may raise their hand and I will come help you as needed.

Does anyone have any questions?

Thank you again for your participation. You may begin.

Dear Parent,

My name is Kathleen Schnerer and I am one of the Toledo Symphony Youth Orchestra (TSYO) Concert Strings Conductors. I am writing to seek your permission to allow your child's participation in a pilot research study. The research study I am conducting is in partial fulfillment for completion of my Master's Degree in Music Education at the University of Michigan.

The purpose of my current study is to examine the extent to which students' psychological needs are being met through participation in orchestra. As a member of the TSYO Concert Strings, your child is eligible for this pilot study. Through feedback from students and results from the pilot study, adaptations will be made before the main study is conducted.

Upon your consent, students will be permitted to have access to a link to a web-based questionnaire that I have developed that asks students to answer 28-items. This is a multiple-choice questionnaire that will take place during the TSYO Concert Strings rehearsal on Monday, October 14th, 2019. It should take no longer than 10 minutes to complete. If available, students will need to bring a laptop to rehearsal to participate in the survey.

There are no risks from participation in this study. All responses are voluntary and will be kept anonymous. The results of this survey will not be reported with your child's name and their responses. The University of Michigan Institutional Review Board for research has reviewed and approved this study. Mr. Zak Vassar, President & CEO of the Toledo Alliance for the Performing Arts, Rachel Zeithamel, Director of Education, Wasim Hawary, TSYO Artistic Director, and Elizabeth Cranston, TSYO Concert Strings Conductor have also approved this research study.

Through your participation in the TSYO Concert Strings, I know how valuable orchestra is to your child. I would be most grateful for your child's participation in this pilot study.

If you want to EXCLUDE your child from participating, please return the bottom portion of this letter with your signature to TSYO Rehearsal on Monday, October 7th, 2019.

Sincerely,

Kathleen Schnerer
kschnerer@perrysburgschools.net

By signing this document, you are **EXCLUDING** for your child, _____, from participation in the pilot study entitled Addressing Students' Psychological Needs Through Participation in Orchestra. Please return by Monday, October 7th, 2019.

_____   _____
                        Parent Signature   Date