THESIS

A SURVEY OF COLORADO ORCHESTRA TEACHERS' CURRICULAR AND EXTRACURRICULAR ACTIVITIES

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ABSTRACT

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The arts play an important economic role in Colorado, contributing 3.9% of the state's GDP ($16.9 billion) in 2021 (Hunt & Schultz, 2023). Colorado is home to a diverse array of activities in the orchestral realm including prestigious music festivals (e.g., Aspen, Vail, Breckenridge, Chautauqua), the National Repertory Orchestra, and the Boulder Suzuki Strings program. Despite the strong presence of orchestras in the state, not much is known about Colorado orchestra teachers. Researchers have gathered school orchestra program data nationally (Elpus, 2015; Elpus & Abril, 2019; Gillespie & Hamann, 1998; Hamann & Gillespie, 2002; Smith et. al, 2018) showing trends of an increase of orchestra student enrollment and a decrease of orchestra teachers. At the state level, researchers have suggested there is a disparity of access to string education (Miller, 2024; Saccardi, 2024) and a possible connection between string student enrollment and teacher attrition (Elpus & Miller, 2023). (Chappell & Nussbaum, 2023; Saccardi, 2024; Miller, 2024; Miller et al., 2021). No specific quantitative survey has been done for Colorado secondary orchestra programs.

The purpose of this study was to survey Colorado secondary orchestra teachers, identify the activities they engage in with their students both in and out of school, and examine how these activities relate to their motivations for teaching orchestra. Expectancy-value theory (EVT) serves as a framework for this study, which suggests that an individual's expectancies, values, and perceived costs effects the likelihood they will persist in a task (Eccles et al., 1983; Sin et al., 2022; Wigfield & Eccles, 2000). While EVT has been used to examine student motivations there is little research that examines the motivations of orchestra teachers, specifically in the realm of EVT. The following

research questions were investigated: (1) What are the characteristics (e.g., age, years of experience, primary instrument of study) of secondary Colorado orchestra teachers? (2) What curricular practices do Colorado orchestra teachers engage in with their students in school (3) What extracurricular activities do orchestra teachers engage in with their students? (4) What are the relationships between the expectancies, values, and perceived costs of teaching music with the curricular and extracurricular activities that Colorado orchestra teachers engage in with their students?

Participants in this study included secondary orchestra teachers in Colorado who taught at least one orchestra class within the school day during the 2024-2025 academic school year. Data were collected through an anonymous questionnaire online. The questionnaire collected demographic information regarding teacher and school characteristics as well as the curricular and extracurricular activities they engaged in. Additionally, the expectancies, subjective task values, and costs of participants regarding teaching orchestra were assessed using items adapted from prior studies (Conley, 2012; Perez et al., 2019). Measures of central tendency were employed to analyze demographic and activity data, then compared with expectancies, subjective task values, and cost using correlational analyses and independent sample t-tests. Some salient findings of this study include differences between the expectancies of string and non-string players, expectancies and values of male- and female-identifying participants, and high variance of cost values. However, this study had a relatively small sample size and is likely not representative of the entire orchestra-teaching population of Colorado.

Keywords: Colorado, NCAS, expectancy-value theory, teacher motivation, secondary orchestra programs

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TABLE OF CONTENTS

CHAPTER 1 - INTRODUCTION

National surveys of U.S. public school orchestra programs show increased student enrollment over the past 50 years (noting that post COVID-19 data is not available); additionally, the number of schools offering string instruction has been steadily increasing (Gillespie & Hamann, 1998; Hamann et al., 2002; Leonhard, 1991; Smith et al., 2018). Despite the growth of school orchestras, certified music teachers appear to have decreased in number (B. P. Smith et al., 2018; West, 2012). An imbalance between the supply and demand of orchestra teachers has created the space for music educators with a variety of professional training to fill open positions. For example, teachers who do not primarily play an orchestral string instrument (violin, viola, cello, bass) may position themselves in the role of teaching orchestra (Hamann et al., 2002; B. P. Smith et al., 2018; Williams, 2010). In other instances, public schools may recruit music teachers from outside the profession using alternative certification programs (Russell, 2007).

Multiple entry points into the profession present unique advantages and disadvantages. Alternative certification programs (ACPs) are positive for teacher recruitment, expediting aspiring teachers' entry into the profession. From individuals that are changing careers, professional musicians who wish to enter the public-school sector, or music school graduates who did not receive a music education-specific degree, ACPs are appealing to a wide audience. However, the difference in effectiveness between ACPs for music teachers and traditional certification is empirically ambiguous (West, 2024). While alternatively certified teachers are one of the additional pathways into the profession, a perhaps more common phenomenon is the

hiring of a music educator who does not play an orchestral string instrument (violin, viola, cello, or bass).

In a hypothetical scenario, an administrator desperate to fill their string position may find that no string-primary candidates are among their applicant pool. This may result in the hire of a non-string-primary educator who likely has not received orchestra-specific training. Despite being an established music educator in a different field, over time, their students might not receive the appropriate foundational skills while their teacher is learning on the job. Experiencing a lack of quality instruction specific to developing skill on a string instrument from the outset may lead students to become disinterested in the activity or eventually become frustrated and quit. Thus, a shortage of orchestra teachers leads to a natural decline in string students, and subsequently future orchestra teachers (Ammerman, 2017). Furthermore, orchestra teachers may feel a similar sense of frustration and leave their position, resulting in the administration looking for another qualified candidate that does not exist. After a certain number of iterations of being unable to fill the position, administrators may be forced to cut the orchestra program entirely. The above scenario, while hypothetical, is certainly possible and has happened to orchestra programs in the past (Ammerman, 2017).

A clear image of what a comprehensive orchestral education might look like may add a level of support for teachers who are ill-equipped to teach orchestra. Taking inventory of the various teaching practices and activities of orchestra teachers could provide a guiding framework for others to follow. Instead of creating an idyllic image of the perfect orchestra program, it should be noted at this point that school music programs are multifaceted, and a host of complex factors influence the extent of success that may be possible. Context and available resources are

an essential consideration; the activities and practices described below provide only one perspective on enhancing student performance skills and understanding of music more comprehensively. For example, those teaching in rural settings may face a number of issues beyond instruction, including a lack of financial resources, lack of access to other music teachers, and a compounded teacher-shortage issue (Padron et al., 2020). Additionally, as noted in the Opportunity-to-Learn Standards (NAfME, 2020), a wide array of resources are needed to cultivate rich music learning environments.

Previous research suggests that many music educators are teaching orchestras without sufficient training in a variety of rural, urban, and suburban contexts (Harmon, 2001; Jimerson 2003; Miller, 2008). Additional barriers such as staffing are heightened in many rural contexts due to community and funding factors (Padron et al., 2020). Colorado, for example, has many music programs that experience many of these staffing issues due to 82% of its school districts being considered rural (Padron et al., 2020). Additionally, Padron et. al (2020) found that some rural Colorado music teachers allude to issues of access to professional development due to travel times, feeling overloaded from teaching various music disciplines, and high turnover.

While Colorado has many rural are, Colorado has vibrant professional and community orchestras. Moreover, Colorado is home to prestigious summer programs attended by students both nationally and internationally (e.g., Chautauqua, Breckinridge, and Aspen music festivals); the National Repertory Orchestra is located in Breckinridge; Colorado is also the home of Boulder Suzuki Strings, which has been in existence since 1982 — less than 20 years after the Suzuki method came to the United States (Akutsu, 2020). Additionally, the arts play an

important economic role in Colorado, contributing 3.9% of the state's GDP ($16.9 billion) in 2021 (Hunt & Schultz, 2023).

Despite the active role of orchestras in the state, not much is known about its public-school orchestra teachers and the music learning activities experienced by students in secondary orchestra programs. Multiple scholars have surveyed secondary orchestra programs nationally (Elpus, 2015; Elpus & Abril, 2019; Gillespie & Hamann, 1998; Hamann & Gillespie, 2002; Smith et. al, 2018) as well as at the state level (Chappell & Nussbaum, 2023; Saccardi, 2024; Miller, 2024; Miller et. al, 2021). Rural music teachers (Padron et al., 2020) and emerging music course teachers (Cort et al., 2022) of Colorado have been examined, but no study currently exists specific for Colorado secondary orchestra programs.

Since Colorado has a robust community and professional orchestra presence, a closer examination of the practices and activities of its orchestra directors may provide important context into what a comprehensive orchestra program can look like in vastly different contexts. Therefore, the purpose of this study was to examine the characteristics of secondary orchestra teachers, identify the activities they engage in with their students, and examine any relationships that may exist between their characteristics and their self-reported motivations to engage (or not engage) in those activities.

CHAPTER 2 - REVIEW OF LITERATURE

A decrease in the number of certified music teachers has led to school administrators hiring orchestra teachers from a variety of backgrounds, including those who do not play a stringed instrument or hold alternative licensure (Smith et al., 2018; West, 2012). Regardless of educational background or training, orchestra teachers should strive to create an enriching experience for students to combat the cycle of attrition that results from poor educational experiences (Ammerman, 2017). Colorado, with 82% of its school districts considered rural, may be a prime example of educators teaching secondary orchestra programs without appropriate training (Padron et al., 2020).

The following literature review is intended to provide a comprehensive view of the common practices of secondary orchestra programs (grades 6-12) in the United States, as empirical data of Colorado orchestra program does not currently exist. The first section explores the status of orchestra programs and orchestra teacher profiles according to existing descriptive studies published within the last 30 years. The next section outlines the movement for music educators to provide a comprehensive musical experience through the National Core Arts Standards (NCAS). A variety of teaching practices and school orchestra activities will then be discussed through the lens of each domain of the NCAS. The final section will outline the framework for this study, the expectancy-value model of motivation theory, and how it can provide important context for the decisions regarding instructional priorities for Colorado secondary orchestra teachers.

The Status of Orchestra Programs in the U.S.

Prior studies have examined the status of U.S. public school orchestra programs on a national level (Bergonzi, 1998; Delzell & Doerksen, 2000; Gillespie & Hamann, 1998; Hamann et al., 2002; C. Smith, 1997, 2000), state level (Abeel, 1995; Chappell & Nussbaum, 2024; Horvath, 1993; Ihas, 2019; Matesky, 1964; Miller et al., 2021; Schmidt et al., 2006; Tast, 2014), and through broader national surveys of secondary music programs (Elpus, 2015; Elpus & Abril, 2011, 2019, 2024). As of 2024, only eight of the fifty states have been specifically surveyed (e.g., Indiana, Kansas, Ohio, Virginia, North Carolina, Texas, Oregon, and California). These studies indicate that public school orchestra programs are most frequently offered during the school day (Gillespie & Hamann, 1998; Hamann et al., 2002; Tast, 2014). Additionally, public school programs primarily offer beginning level orchestra classes at fourth, fifth, and sixth grade (Delzell & Doerksen, 2000; Gillespie & Hamann, 1998; Hamann et al., 2002; Horvath, 1993; Schmidt et al., 2006; Smith et al., 2018). Data, while not representative of the entire United States, provide important context to the challenges that contemporary public school orchestra teachers are facing.

The number of orchestra programs and overall orchestra enrollment has steadily increased since the 1980s, while the number of teachers has remained relatively stable or decreased (Gillespie & Hamann, 1998; Hamann et al., 2002; Leonhard, 1991; B. P. Smith et al., 2018). Since student enrollment and school orchestra programs have been increasing, there has been increased demand for certified orchestra teachers. For example, researchers found a nation-wide shortage of 5,000 orchestra teachers between 2002 and 2004 and a shortage of 3,000 orchestra teachers between 2010-2013 (Hamann et al., 2002; B. P. Smith et al., 2018; Williams, 2010). In the 2014-2015 school year, one study found that 48% of participants had unfilled

orchestra positions in their district (Smith et al., 2018). Smith et. al (2018) also found that 20% of their survey respondents were certified teachers whose primary instrument was not a string instrument. This suggests that public schools have been forced to look more broadly to licensed music educators regardless of their primary field of study (e.g., band, orchestra, choir) due to this imbalance between the supply and demand of teachers.

Previous research findings highlighted disparities in string education; however, recent findings have challenged these trends. Orchestra instruction at the secondary school level (i.e., grades 6-12) is more likely to be offered in suburban areas, followed by urban and rural locales (Bergonzi, 1998; Delzell & Doerksen, 2000; Gillespie et al., 2014; Gillespie & Hamann, 1998; Hamann et al., 2002; Tast, 2014). That same distribution is true for the likelihood that a new orchestra program would be established (Gillespie et al., 2014; Gillespie & Hamann, 2010). Additionally, very little orchestra instruction occurs in areas of low socioeconomic status (Bergonzi, 1998; C. M. Smith, 1997, 2000). Despite this distribution of orchestra programs across districts in prior literature, Smith et al (2018) found that the number of orchestra programs is spread relatively evenly across small, medium, and large district sizes.

Program enhancements such as symphonic orchestra (winds and percussion included with stringed instruments), private lessons, chamber music, and fiddle classes have declined since 2002 (Gillespie & Hamann, 1998; Hamann et al., 2002; B. P. Smith et al., 2018). As one example, Hamann and colleagues (2002) found that 50% of orchestra programs surveyed (n = *659)* reported having a full symphonic orchestra in 1998, but only Smith and colleagues (2018) 25% of survey respondents (n = *369*) reported having one in 2018. Chamber music and private lessons have increased since 2010, but the reported rate is still lower than 2002 (Hamann et al., 2002; Smith et al., 2018). Smith et. al (2018) posited that this decrease in program enhancements

may reflect an obstacle that teachers face when considering adding additional responsibilities to an already extensive workload.

Orchestra Teacher Profiles

In addition to orchestra programs, researchers have also examined the demographic and professional profiles of public school orchestra teachers (Gillespie et al., 2014; Gillespie & Hamann, 1997, 1998; Hamann et al., 2002; Ihas, 2019; Miller et al., 2021; Saccardi, 2024; B. P. Smith et al., 2018; Tast, 2014). Orchestra teachers at the secondary level are most commonly Caucasian, female-identifying, and hold a master's degree (Gillespie et al., 2014; Gillespie & Hamann, 1998; Hamann et al., 2002; B. P. Smith et al., 2018; Tast, 2014). Virtually all orchestra teachers have reported holding teaching certification or licensure in the field (Gillespie et al., 2014; Gillespie & Hamann, 1998, 2010; Hamann et al., 2002; Schmidt et al., 2006). Additionally, the national average number of years of teaching orchestra is approximately 19, which has increased since 1998 (B. P. Smith et al., 2018).

Orchestra teachers have been found to have differing musical training experiences prior to teaching. Approximately two-thirds of participants from prior studies primarily play a stringed instrument (Gillespie et al., 2014; Gillespie & Hamann, 1998, 2010; Hamann et al., 2002; Tast, 2014). In many cases, there are public school orchestra teachers who do not play a string instrument (Kim, 2023; Mishra, 2006; Peterson, 2012). The prevalence of non-string playing educators is further supported by the existence of textbooks, practitioner journals, theses, and professional development sessions dedicated to breaking down string pedagogy for non-string instrument players (Feldman et al., 2020d; MacLeod, 2019; Mishra, 2006; Newbrey, 2001; Spieker, 2015).

There are also differences in the educational experience of those who received orchestra instruction in public schools with those who were socialized through private lessons or through Suzuki instruction, which happens largely in the home or private studio (Barber, 1991; Begin, 2023; Colprit, 2000; Davidson & Jordan, 2007; Pellegrino, 2009; Swanson, 1964). Suzuki instruction greatly differs from public school teaching due to its reliance on familial participation, one-on-one instructional settings, and is more easily accessed by more affluent communities. It is also a possibility that orchestra teachers entered the field through alternative certification, albeit less commonly than traditionally certified teachers. (Racin, 2000; West, 2024).

Descriptive surveys of orchestra teachers have indicated that most orchestra teachers are also active performers (Gillespie & Hamann, 1998; Smith et al., 2018). Smith et. al (2018) found that nearly two-thirds of their participants performed with large and chamber ensembles, and 27% performed in some form of alternative ensemble (e.g. modern band, mariachi, guitar). Consequently, active music making has been highlighted as an important part of orchestra teacher identity and job satisfaction (Gillespie & Hamann, 1998; Pellegrino & Russell, 2015; Russell, 2009; B. P. Smith et al., 2018). (For example, Russell (2009) found that K-12 orchestra teachers reported a higher job satisfaction when they continued their music making outside the classroom than those who did not. Descriptive surveys of orchestra teachers have indicated that most orchestra teachers are also active performers (Gillespie & Hamann, 1998; B. P. Smith et al., 2018). Given the diverse backgrounds and training of orchestra teachers, closer study of their perspectives on teaching in public schools is warranted.

National Core Arts Standards

A brief discussion of the National Arts Standards for Music provides an important backdrop to the expectations that public school orchestra teachers face today in curriculum design. The purpose of these standards, initially established in 1994, was to establish a clear goal for what students are expected to accomplish as a result of their musical study in the United States (National Core Arts Standards, 2025; Schopp, 2006). Established by the National Association for Music Education (NAfME), the first iteration of national standards encompassed both aesthetic and paraxial domains (Hof, 2021). These standards were revised and are now aligned with the National Core Arts Standards (NCAS), established in 2014 and further developed in 2016. The NCAS reduced the nine original domains to just four: creating, performing, responding, and connecting (National Core Arts Standards, 2016).

Previously established curricula have been one useful tool to give orchestra teachers a broader image of how they might incorporate each domain of the NAfME standards in their instruction (Benham et al., 2021; Gillespie, 2015; Hamann et al., 2002; B. P. Smith et al., 2018). For example, the professional orchestra teacher organization known as the American String Teachers Association (ASTA) has a comprehensive curriculum for orchestra teachers that focuses the NCAS to be more orchestra-specific (Benham et al., 2021; Gillespie, 2015). Researchers have found that the use of a curriculum in instructional design for secondary orchestras is varied. Hamann et. al (2002) found that 62% of surveyed districts had a printed orchestra curriculum, and 73% of those programs used it for planning or evaluation. However, Smith et al. (2018) found that where printed curricula existed, only 53% of participants used it to plan instruction. Though local, district, and nation-wide curricula have been developed, the instructional practices of orchestra teachers in the contemporary context remains unclear.

While the domains have been reduced in number from the 1994 standards, they still contain the same philosophical goal for music education: a comprehensive musical education that encompasses a broad range of ways in which students can interact and develop their musical skill and knowledge of music more broadly (Baccala, 2020; Sindberg, 2007). The following section will present some of the ways in which the profession has attempted to promote comprehensive musicianship through these four domains.

Performing

Teachers commonly focus on skills within the performing domain of the NCAS through incorporating method books in their curricula. Method books are more typically oriented towards on the more paraxial elements of music-making, such as instrument-specific technique and music literacy exercises (Beers, 2023; Sanders, 2023; Scherer & Regier, 2023; Tatton, 1994). Notable examples of orchestra-specific method books include *Essential Elements 2000*, *Strictly Strings*, the Bornoff method, and the Suzuki book series (Beers, 2023). Music teachers have mixed views on how the method book fits into the curriculum, as each methodology carries a different bias towards instrument technique, repertoire selection, historical context, or creative practice. While method books have historically been an essential avenue of curriculum design, some music educators are critical of dogmatically relying on a single method in their instruction but opt to take a more holistic approach to curriculum design (Musco, 2011; Reimer, 1997; Sanders, 2023; Wall, 2018; Walter, 2018). While method books provide a foundation for instructional design, they also appear to heavily reinforce the performing domain of the NCAS and present limited extensions to the creating, responding, and connecting domains.

Connecting

The connecting domain is commonly reflected through the ways in which students interact with their musical repertoire and develop their understanding of music to other disciplines outside of music, both within and outside of the arts. The orchestra curriculum is largely influenced by the musical repertoire that teachers determine for their students (Armes, 2020; Davis & Dean, 2023; Mellizo, 2020; Reynolds, 2000). Studying the background of pieces, styles, and composers invites cross-curricular discussions about historical and cultural elements relevant to the repertoire.

An analysis of repertoire performed at ASTA's National Orchestra Festival indicates that those programs favor traditional Eurocentric repertoire by White male composers such as Mozart, Brahms, Dvoràk, and Tchaikovsky (Zabanal, 2022). In addition to traditional Western European composers, there is also a high representation of male contemporary school music composers like Richard Meyer and Brian Balmages (Davis & Dean, 2023).

There has been a recent drive towards incorporating a greater diversity in musical styles and composer backgrounds in repertoire selection (Davis & Dean, 2023; Pope, 2019; Zabanal, 2022). Leaders in the field of music education assert that a deep understanding of the contextual and historical background of a piece is essential in preparation and discussion with students (Land & Rush, 2022; Stith, 2011). Despite these assertions, Baccala (2020) found that composer's background and historical context were least represented when examining the teaching practices of choral directors.

In addition to repertoire selection, a comprehensive orchestra program provides opportunities for students to explore alternative styles and modalities to music making beyond a large ensemble setting (Flanagan, 2019; Fye, 2023; Mick, 2012; Norgaard & Taylor, 2016;

Savage & Harry, 2024). ASTA has a dedicated "Eclectic Styles" committee, which ensures that eclectic music (music that encompasses a wide variety of genres, styles, and time periods) is an integral part of the organization to promote wider diversity in musical study and cultural representation (ASTA, 2024). Eclectic music encompasses a wide variety of genres, styles, and time periods. These eclectic genres include fiddle, jazz, rock, and mariachi (Flanagan, 2019; Fye, 2023; Norgaard & Taylor, 2016; Savage & Harry, 2024; Seaborn, 2015). Orchestra programs may also offer alternative modalities within the classical tradition such as chamber music, or collaboration with winds in a symphonic orchestra (Feldman et al., 2020a). By broadening the scope of public-school orchestral repertoire, the ASTA organization aims to cultivate a holistic music education to prepare students for an increasingly diverse musical landscape.

Creating and Responding

The creating and responding domains of the NCAS are most commonly represented through improvisation and composition (Hickey, 2009; Hopkins, 2013; Menard, 2015; Park, 2019; Seaborn, 2015; Tsugawa & Voght, 2023). For instance, improvisation is usually an approach to applying creation in music classroom. Improvisation refers to the practice of performing music spontaneously without preparation or written notation. In addition to creating music spontaneously, adept improvisers will respond to others' music with intention and understanding (Shuler et al., 2014). Improvisation was first introduced into U.S. public schools through the study of jazz in the 1970s (Hickey, 2009; M. L. Mark, 1996). While improvisation is most closely associated with jazz in the contemporary context, the instructional practice is not intended to be genre specific. It has historical roots in classical and Latin styles that can be studied and experienced by string players. Incorporating improvisation might increase student

confidence in exploring and refining their own musical ideas through the use of drones, loops, outlining chord tones, and harmonic progressions (Park, 2019).

While improvisation is spontaneous music creation, composition is music creation with more deliberate planning. Composition was initially introduced mainly into public schools in the United States in tandem with the Ford Foundation's Young Composers Project which launched in 1959. Composers were encouraged to write works directly for school ensembles as well as work with them through the rehearsal process (Mark & Gary, 2007; Menard, 2015). While this led to additional programs promoting composition in the schools, the focus of schools continued to be primarily be on ensemble performance (Hickey, 1997; Hopkins, 2013; Schopp, 2006). Schmidt et al. (2006) found that general music teachers reported an average of only 6% of their instructional time was dedicated to composition activities. Strand (2006) similarly reported that many teachers incorporated composition infrequently or not at all in their instruction. Lack of time, professional training, or low efficacy in teaching composition to students are all potential factors for teachers not incorporating it into their curriculum (Hopkins, 2013; Menard, 2015; S. E. Schopp, 2006; Strand, 2006).

Instructional Practices

Teaching practice is a critical element for orchestra teachers to consider. While encompassing the four domains of NCAS is a broadly understand the practices of music teachers, a closer examination of their instructional practices can provide a more in-depth perspective on the orchestra teacher profile. Since prior research has found that instructional practices can positively or negatively influence the motivations and performance of students (Austin & Vispoel, 1992; Butler, 2022; Cogdill, 2015; Hartley & Porter, 2009; Legette, 2002; O. Tucker, 2020; O. G. Tucker, 2018), this research focus might greatly benefit secondary string

education. The following section will highlight some broad themes of music teacher instructional practice from both practitioner and research journals.

Effective practice habits are modeled, discussed, and reinforced by music teachers to encourage their students to take ownership of their own learning (Austin & Berg, 2006; Hallam et al., 2012; Kennedy, 2016; Matesky, 1964; Regelski, 2023). Students who incorporate effective practice regularly have been found to have more positive attributions to success and greater retention rates in school music programs (Austin & Vispoel, 1992; Pitts et al., 2000). Additionally, research has consistently demonstrated that the quality of practice is more important to growth than the quantity of practice (Austin & Berg, 2006). Some specific methods of teaching student practice include an "order of operations" thinking process (Butler, 2022), modeling effective practice (Prichard, 2012), and co-creating a practice strategies list (Smeltz, 2012).

Music teachers may also encourage student agency by allowing students to have more control over both the musical and non-musical responsibilities within the orchestra program (Hendricks et al., 2012). Student motivation increases when students take on responsibilities that positively affect the quality of their learning (Deci et al., 2013; Hendricks et al., 2012). For instance, student conductors, music librarians, student officers, warm-up leaders, repertoire selection, and section leaders are some examples of how orchestra teachers may incorporate student leadership (Ammerman, 2021; Hendricks et al., 2012; Henton, 2022). These practices give students increased agency over the inner-workings of the orchestra program, encouraging greater engagement.

Prior research has also shown that incorporating Peer Assisted Learning (PAL) in an ensemble setting can positively influence student achievement (Herman, 2022; Johnson, 2011,

2015, 2017; Powell et al., 2024; Saccardi, 2023a; St. John, 2006). PAL refers to the instructional environment where students learn through helping or supporting their peers in some instructional goal (Johnson, 2017; Johnson & Herman, 2024; Topping, 2005). With clear structure and goals, peer learning can be incorporated by a variety of means, including peer assessment, modeling, monitoring, and tutoring (Herman, 2022; Johnson & Herman, 2024). PAL can be used to reinforce concepts such as rhythm reading (Duran et al., 2020), music theory (Johnson, 2017), or instrument-specific technique (Saccardi, 2023a). One of the more traditional ways to integrate PAL in an orchestra classroom is through student-led chamber ensembles (Feldman et al., 2020a; Leventhal, 2015; Romer, 1998; Saccardi, 2023b; Schranze & Castleman, 1993; Trapkus, 2018). By utilizing these collaborative strategies, music educators provide opportunities for students to both deepen their musical skills and develop collaborative strategies that can serve them beyond the orchestra classroom.

Extracurricular Activities

Public school orchestra teachers frequently engage in various supplemental activities with their students outside of the normal instructional hours of the school day). For instance, Gillespie and Hamann (1998) found that on average, elementary orchestra programs perform two concerts a year, middle school programs perform four to five concerts a year, and high school programs perform between five and six concerts a year. Additional activities frequently engaged in include include adjudication events (Chappell & Nussbaum, 2024; Gardner, 1993; McDow & Stiffler, 2020; Roberton, 1934), in- and out-of-state travel (Henry, 1985), fundraising (Bugos, 2020; Culp & Clauhs, 2020; Feldman et al., 2020b; Hoffman, 2013), recruitment (Elpus & Miller, 2023; Feldman et al., 2020c; Marra, 2022; Martin, 2018; Pendergast, 2020), as well as the promotion of orchestra-specific summer camps (Tunstall, 2020

Notably, one of the most common practices/requirements for public school orchestra directors is to engage in some form of adjudication performance. An ensemble travels to a location, most often a school of a participating director, performs approved repertoire, and receives a rating from a panel of esteemed judges, colloquially known as “large group” in Colorado. Adjudication events may provide unnecessary stress and pressure on the director and the program (Culp & Jones, 2020; Pope, 2019; Salvador, 2019). Performance ratings carry both implicit and explicit ties to perceptions of teacher effectiveness, meaning low ratings could contribute to feelings of shame and guilt in the orchestra teacher (Culp & Jones, 2020; Salvador, 2019). Valuable context could be provided on the effectiveness and impact of adjudication events through closer examination in future studies.

Expectancy-Value Theory

To better understand the motivations of orchestra teachers to engage in the practices and activities discussed in the previous section, I will draw upon the Expectancy-Value Theory (EVT) of motivation. The guiding principle of EVT is that an individual’s expectancies and subjective task values contribute to their motivations to engage and persist in certain tasks (Sin et al., 2022). In other words, knowing more about the expectancies and values of orchestra teachers can provide important insight into their motivations to engage in certain in-school or out-of-school activities. In the following section, I give a brief overview of EVT and its applications in educational research.

Expectancies

Expectancies are the self-beliefs of how well an individual can perform a task (J. Eccles et al., 1983; Sin et al., 2022; Wigfield & Eccles, 2000). If an individual believes they can be successful in a task, they are more likely to perform that behavior (J. Eccles & Wigfield, 1995).

Multiple researchers indicate that a positive relationship exists between the expectancies of an individual and their performance and achievement (J. Eccles, 1984a, 1984b; J. Eccles et al., 1983; Meece et al., 1990). In the case of orchestra teachers, this suggests that as a teacher experiences various forms of success in their careers, their ability perceptions will increase.

Expectancies can be further broken down into ability perceptions, expectancies for success, and perceived performance (J. Eccles & Wigfield, 1995). In the context of orchestra teachers, ability perceptions would refer generally to their self-image of their own teaching ability as well as their ability to positively impact their students' performance ability and knowledge of music. Expectancies for success might refer to orchestra teachers' predictions about how well they can guide their students towards a particular instructional objective (e.g., rhythm decoding, performance practice, chamber music). Finally, perceived performance refers to the teachers' reflection on how successful they believed they (or their students) performed on the task.

Subjective Task-Value

The values of a task are entirely subjective and unique to the individual (J. Eccles & Wigfield, 2023). Additionally, subjective task values may change according to personal and task characteristics. For example, a high school violin student may have a high subjective task-value for practicing their instrument if they have an upcoming performance in a week rather than the day after the performance. Studies suggest that a positive correlation exists between subjective task-values and someone's intention to engage, persist, and work to improve performance in a particular activity (J. Eccles, 1984a, 1984b; J. Eccles et al., 1983; Hirt et al., 2022; Meece et al., 1990). In other words, an orchestra teacher with a high subjective-task value for a particular

activity (e.g., chamber music) may include it in their curriculum and seek to improve its effectiveness each year.

Much like expectancies, subjective task-value is also divided into three domains: attainment value, intrinsic value, and utility value (J. Eccles, 1983; Sin et al., 2022). Attainment value refers to how important it is for an individual to do well on a task (Parkes & Jones, 2012). Intrinsic value is the level of enjoyment or interest from performing a task (J. Eccles & Wigfield, 1995). Utility value, also known as extrinsic motivation, refers to how useful a task is in relation to an individual's long-term and short-term goals (McCormick & McPherson, 2007; Parkes & Jones, 2012). In the context of orchestra teachers, high task-values would indicate that they believe it is important to be a good teacher, intrinsically enjoy teaching, and believe that teaching is useful for the achievement of their personal and professional goals.

Cost

While initially a more vague element under the umbrella of subjective task-value (J. S. Eccles & Wigfield, 2002; Wigfield & Eccles, 2000), the cost domain has recently become more clearly defined within the expectancy-value framework (Flake et al., 2015; Hirt et al., 2022; Jiang et al., 2018). Cost factors in the perceived effort or sacrifice that is required to engage in a task (J. Eccles et al., 1983; Sin et al., 2022). Cost is broken into three smaller categories: effort, opportunity, and emotional costs (Hirt et al., 2022). The anticipated effort is an individual's balance between how much energy they expect to spend on a task with how valuable it is to them. Opportunity cost is how much a task prevents an individual from completing other valued tasks. Emotional cost is the anticipated anxiety from engaging with the tasks and the emotional results of failing to complete the task (Hirt et al., 2022).

Application in Educational Settings

Researchers have used the expectancy-value model to examine teacher motivations in a variety of educational settings (Berry, 2021; Day, 2020; Drossel et al., 2019; Hirt et al., 2022; Huang, 2016; Wigfield & Gladstone, 2019) Much of the findings from general education psychology research has been found to also apply to music contexts (Austin et al., 2009; McCormick & McPherson, 2003; McPherson & McCormick, 2006; McPherson & O'Neill, 2010). By recognizing the parallels between general education and music-specific settings, music education researchers can apply findings from other fields to inform the unique challenges and opportunities present in music teaching

Instructional Decisions.

Some educational research has focused on the complex relationship between teacher's internal beliefs and external constraints on specific instructional decisions (Day, 2020; Hirt et al., 2022; Huang, 2016). In a qualitative study, Day (2020) examined the motivations of K-5 mathematics teachers in relation to how much they implemented reform-based instruction as opposed to more traditional, teacher-centered instruction. Day (2020) reported that time constraints emerged as the primary factor that teachers did not incorporate reform-based instruction in their classroom (Day, 2020). In other words, the cost of adjusting instruction from more traditional methods to a more student-centered, problem-solving approach was too great, even though the participants understood that it was a more effective model of instruction. This echoes the finding of Huang (2016), who found that increased teaching loading was the most influential factor preventing teachers from adjusting their instructional style.

Similar to reform-based instruction, a separate study focused on the motivations of teachers to incorporate self-regulated learning into their instructional practice (Hirt et al., 2022). The findings categorized participants into three broader categories: high cost profiles (low efficacy, low value, high cost), moderate profiles (expectancies & values slightly higher than costs), and high success expectations and task values profiles (high efficacy, high value, low cost). While Day (2020) cited cost as the most significant factor inhibiting the implementation of reform-based instruction, Hirt et al. (2022) found that expectancies were the primary differentiating factor between teachers that implemented self-regulated learning and those that did not, though costs were relatively high for all three profiles.

Efficacy Beliefs.

Teachers' efficacy beliefs are not only focused on their own self-beliefs, but also in their efficacy beliefs of their students. Researchers have also focused on how the student-efficacy beliefs of teachers affect their pedagogical decisions (Abrami et al., 2004; Cross Francis, 2015; Klehm, 2014; Rousseau, 2004; Thompson, 1984; Warfield et al., 2005). For example, a qualitative case study followed a team of high school mathematics teachers in Houston attempting to implement curricular reform to make their pre-algebra course more effective. Ultimately, the team abandoned their curricular reform for a number of reasons, but some participants cited the students as barriers to the reform, indicating that “different” students would be able to handle the reform better than their current students (Rousseau, 2004).

Furthermore, teacher beliefs of their students have been shown to potentially impact student performance and achievement (Brehm & Kassin, 1996; Brophy, 1982; Jussim & Eccles, 1992; Klehm, 2014). One specific study examined teacher beliefs of students with disabilities in

relation to high stakes testing performance (Klehm, 2014). It was found that teachers with more positive attitudes towards students with disabilities and more special education were more likely to engage in research-based practices; conversely, many general education teachers with less special education experience ultimately were found to provide inadequate instruction, and by extension, unintentionally passing negative expectations to their students (Cook et al., 2011; Darley & Fazio, 1980; Klehm, 2014). Examining the efficacy beliefs that orchestra teachers have about their students may provide valuable insight on the types of instructional practices they do or do not engage in.

EVT in Music Education

Much of the literature on expectancy-value theory in music education is focused more specifically on student motivations (Bernabé-Valero et al., 2019; Burak, 2014; Duncan, 2021; Juvonen, 2011; McCormick & McPherson, 2007; McPherson et al., 2015; McPherson & O'Neill, 2010; Parkes & Jones, 2012; Siegal, 2024; Sin et al., 2022; Uy, 2018) In the most recent literature review on expectancy-value theory in music contexts, Hui Xing Sin et al. (2022) methodically outlined existing themes in the literature after reviewing 1,120 records. Themes within the literature include motivations to study music compared to academic subjects, continued music participation and learning, music as an elective choice, music as a career choice, and parental influences (Sin et al., 2022). While expectancy-value has been used for student motivations, no specific studies have examined the expectancies and values of secondary music teachers.

Purpose Statement

Colorado has an active professional orchestra scene with a variety of ways to engage with the profession including community groups, symphonies, mariachi ensembles, and international festivals. Despite all this activity, little is known about the secondary public orchestra teachers of the state. Researchers have surveyed secondary orchestras at the national level (Delzell & Doerksen, 2000; Gillespie & Hamann, 1998; Hamann et al., 2002; C. M. Smith, 1997) and the state level (Chappell & Nussbaum, 2024; Ihas, 2019; Miller et al., 2021; Schmidt et al., 2006; Tast, 2014), but no Colorado-specific examination exists. Additionally, expectancy-value theory has often been used to examine the motivations of music students, but very few focus on teacher motivations. Therefore, the purpose of this study was to survey Colorado secondary orchestra teachers, identify the activities they engage in with their students both in and out of school, and examine their relationship with the variables of expectancy-value theory.

Research Questions

The research questions guiding this study are as follows:

1. What are the demographic and professional characteristics of secondary orchestra teachers in Colorado?
2. What instructional practices do Colorado orchestra teachers engage in with their students in the classroom?
3. What activities do Colorado orchestra teachers engage in with their students outside of the classroom?
4. What are the relationships between the expectancies, values, and perceived costs of teaching orchestra with the activities that Colorado secondary orchestra teachers engage in with their students?

Delimitations

Data collection is limited to secondary orchestra teachers employed in the state of Colorado. Only secondary orchestra teachers who self-report teaching string orchestra classes during the 2024-2025 school year provided data that were used to describe orchestra programs in this study.

CHAPTER 3 - METHODOLOGY

The purpose of this study was to describe the characteristics of Colorado orchestra teachers, catalogue their teaching practices and activities they engage in with their students, and examine the relationship between their expectancies, values, and costs of teaching secondary orchestra. Gathering descriptive information of orchestra teachers was intended to provide a broad overview of Colorado orchestra teachers and apply a motivational framework to identify any potential relationships. Quantitative data were collected via questionnaire to analyze the demographic characteristics of the teacher, school, and district. Expectancies, subjective-task values, and costs of participants were calculated through Likert-type response items.

Participants were selected using purposeful variation sampling to represent Colorado orchestra teachers as holistically as possible (Creswell, 2017). To ensure the highest return rate possible during the primary study, nonparticipants received a follow-up email two weeks after the initial invitation to participate. After an additional two weeks, nonparticipants received a final reminder to complete the questionnaire. Eligible participants will have a total of five weeks to complete the questionnaire.

Participant Selection

Participants for the study included music educators employed as public school orchestra teachers during the 2024-2025 school year in Colorado (n=60). Eligible participants were secondary music teachers who teach at least one traditional ensemble-based orchestra class. Participants were recruited via email, targeted social media advertising, and the leadership Colorado chapter of the American String Teacher Association (CASTA) with IRB-approved language (see Appendix A and Appendix B). Each mode of contact included a link to the

questionnaire (see Appendix C). Emails of orchestra teachers were solicited from professional teaching organizations, including the American String Teachers Association (ASTA), National Association for Music Educators (NAfME), and Colorado Music Educators Association (CMEA). Access to the questionnaire was also included in Colorado State University's (CSU) newsletter that is distributed to all CSU music education alumni in the state. The researcher was not provided direct access to these distribution lists, so the number of individuals reached through recruitment strategies was unknown. Of the 60 teachers who responded, only 30 fully completed questionnaires and taught at least one orchestra class. The remainder of the responses did not fulfill the criteria selection and were not used for data analysis.

Questionnaire Items

The 43-item questionnaire is divided into three sections. The first section contains items relating to teacher demographics (e.g., age, gender identity), characteristics of their professional profile (e.g., number of years teaching orchestra), as well as school and district demographics (e.g., rural, suburban, urban) based on prior surveys of orchestra programs discussed in Chapter 2. The second section asks for participants to select teaching practices and activities they engage in with their students from a provided list. The final section includes Likert-type response items to measure expectancies, subjective-task values, and costs of participants relating to teaching public school orchestras. While expectancies, values, and costs are further divided into sub-domains (e.g., perceived performance, utility value, emotional costs, etc.), the questionnaire only includes items that relate to a single sub-domain within each variable: ability perceptions, attainment value, and opportunity cost.

Pilot Test

A pilot study was performed with ten orchestra teachers prior to distributing the questionnaire. The participants of the pilot study were a mixture of Colorado and South Carolina orchestra teachers. Participants of the pilot study provided feedback on clarity and brevity of the questionnaire. Feedback from pilot study participants informed the clarification of language as well as an approximation of how long it took to complete. Following the pilot study, the researcher conducted a small-scale analysis similar to what is described during the data analysis section. The primary aim of the pilot study was for the researcher to establish the relevant statistical tools and skills prior to working with the final data.

Validity and Reliability

In order to ensure validity, the researcher-designed questionnaire (APPENDIX) included twenty demographic and descriptive items from a prior national survey of secondary orchestra programs (B. P. Smith et al., 2018). Some items were omitted or altered to increase relevance to the scope of this study. For example, to represent a wide array of possible activities that teachers may participate in, the enhancements section from the original questionnaire was altered to include jazz, popular music, adjudication events, field trips, summer camps, and social events. Strolling strings, and rock class were removed. Additionally, the program support and hiring practice sections from the questionnaire were not included as they were not relevant to the scope of this study. Items measuring expectancies (α = .90, .95) and costs (α = .89, .99) were adapted from a previous study of undergraduate biology students (Perez et al., 2019). Subjective task-value items (α = .85) were adapted from Conley (2012), which focused on 7th grade math

students. The language of the adapted expectancy, value, and cost items were kept consistent except to replace items relating to biology or math to relate to teaching orchestra.

Data Analysis and Reporting

Following data collection, I calculated descriptive statistics and measures of central tendency from the demographic information, professional characteristics, instructional practices, and extracurricular activities of the orchestra teachers included in the first two sections of the questionnaire. I then calculated descriptive statistics and measures of central tendency for the included expectancy-value domains. I used correlational analyses to explore potential relationships between expectancy-value domains and variables related to teacher characteristics and practices. Finally, I used independent-sample t-tests to determine the statistical significance of some of the more salient relationships.

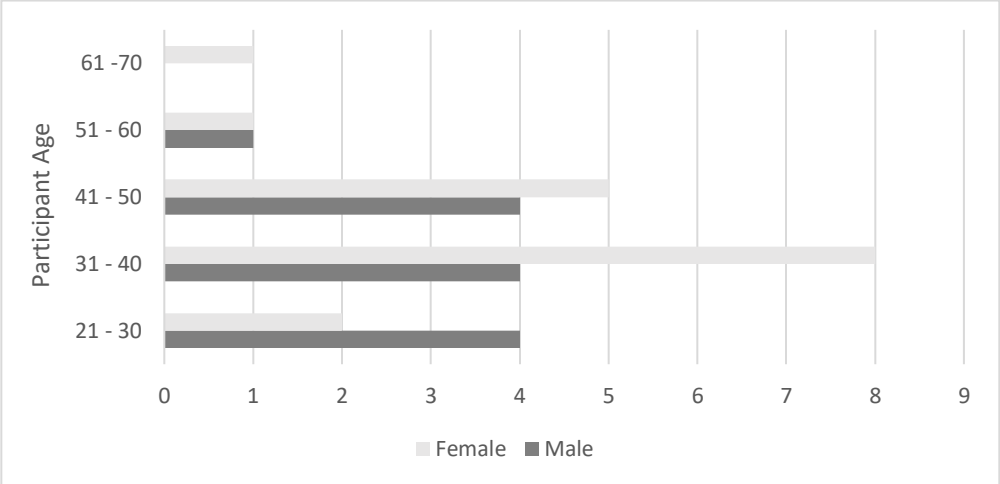
CHAPTER 4 - DATA ANALYSIS

Research Question 1

To address the first research question – "*What are the demographic and professional characteristics of secondary orchestra teachers in Colorado?"* – data were collected using a questionnaire. Participants were asked to report their gender identity, racial identity, and current age (see Figure 1). Of those who participated, 57%(*n*=17) identified as female and 43% (n=13) identified as male; although additional gender options were provided, no other identities were selected. In terms of race and ethnicity, 87% (*n*=26) of the participants identified as White/Caucasian, whereas 6.5% (*n*=2) identified as Asian/Pacific Islander and 6.5% (*n*=2) as Hispanic. The average age of participants were 38 years (SD=10.69), and 38 years was the most commonly reported age. Participant ages ranged from 23 to 70 years; the 25th, 50th, and 75th percentiles were 33.25, 38.38, and 45.25, respectively.

Figure 1

Participant Age and Gender



Note: Specific participant ages were grouped into categories of 10 by the researcher

Participants were also asked to report the number of years of experience they had worked as licensed teachers. The mean length of teaching experience was 13 years (which was also the most frequently reported), with a range from 0 to 48 years. The interquartile range of experience was between 7 and 17 years. On average, participants had served in their current teaching positions for 6 years (*SD*=5.50), with a range from 1 to 24 years. The most commonly reported value for years in the current position was 3.

Participants were also primarily teachers in school districts that served more than 10,000 students (70%, *n*=21) and were identified as suburban communities (77%, *n*=23). 17% of participants teach in urban communities (*n*=5), and 7% teach in rural communities (*n*=2). Seventy-three percent of participants teach in public school settings (*n*=22), with 17% (*n*=5) reporting to be at charter schools, and 10% (*n*=3) in a private school. Based on the Common Core of Data enrollment data, a small school serves less than 500 students, a medium-sized school serves between 500 and 1,199 students, and a large school serves at least 1,200 students. Most participants (60%, *n*=18) reported serving at a medium-sized school, while 27% (*n*=8) reported teaching teach at large school, and 13% (*n*=4) reported teaching in a small school.

Participants were asked to list all courses that they teach in the 2024-2025 academic school year. The researcher then coded those responses into broader categories, as shown in Table 1. Many participants (60%, *n*=18) reported teaching at least one middle school orchestra class, closely followed by at least one high school orchestra class (53%, *n*=16). It should also be noted that 17% (*n*=5) of those participants teach both middle school and high school orchestra, and 7% (*n*=2) teach at the elementary, middle, and high school level orchestra. The most frequent doubling between musical disciplines happened between orchestra and band (30%,

n=9), compared to choir (*n=2*) or piano (*n*=1). Additionally, it should also be noted that elementary general music was listed as a separate category from elementary orchestra.

Table 1

Classes Taught

Course	Count	Percent	Course	Count	Percent
MS Orchestra	18	60%	Jazz	3	10%
HS Orchestra	16	53%	Choir	2	7%
Band	9	30%	General Music	2	7%
Theory	7	23%	Non-Music	2	7%
Elementary Strings	5	17%	Symphony	2	7%
Guitar	5	17%	Piano	1	3%
Other Music	5	17%			

Note: Count indicates that a participant reported at least one class in their course load

Table 2 represents teaching reported by participants that happens outside of their typical teaching schedule. Participant responses were further grouped into broader categories for clarity. Almost half of participants (47%, *n*=14) teach lessons privately, nearly a quarter (27%, *n*=8) do some form of sectional or chamber music coaching, while 23% (*n*=8) indicated no extra teaching beyond their normal class load. Those that teach in extracurricular orchestra settings include youth orchestras, pit orchestra, or preparation for various school-sponsored events (e.g., solo & ensemble, all-state orchestra audition prep, etc.). All four participants that indicated they teach band outside of school reported it within the context of marching band (i.e., assistant director or field tech).

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Table 2

Teaching Outside of School

Additional Teaching	Count	Percent	Additional Teaching	Count	Percent
Private	14	47%	Conducting	3	10%
Coaching	8	27%	Jazz	2	7%
N/A	7	23%	Church	1	3%
Orchestra	6	20%	Mariachi	1	3%
Band	4	13%	Piano	1	3%

Note: Count indicates the number of participants who teach in each setting outside of the normal school day

Participants were also invited to indicate any additional musical activities they participated in outside of school (see Table 3). 63% (n=19) of participants indicated that they performed in some sort of large ensemble in their personal time (e.g., community band or orchestra, professional symphonies, etc.). 27% of participants (n=8) did not indicate any musical activities outside of work. Several additional unique responses were provided, such as *Mahlerfest*, serving as a board member for the Colorado chapter of ASTA, or completing doctoral coursework

Table 3

Personal Music Activities

Activity	Count	Percent	Course	Count	Percent
Large Ensemble	19	63%	Clinician/Adjudicator	2	7%
N/A	8	27%	Conductor	2	7%
Gigging	3	10%	CASTA	1	3%
Chamber Ensemble	2	7%	Church Music	1	3%
Summer Program	2	7%	Doctoral Program	1	3%

Note: This table refers to the activities that teachers participated in, not their students

Over half of participants (53%, n=16) indicated a stringed instrument (violin, viola, cello, or bass) as their primary instrument and 70% (n=21) as their secondary instrument. Twenty-

seven percent of participants (n=8) did not indicate any string instruments as their primary or secondary instruments (i.e., violin, viola, cello, bass) studied in college. Table 4 represents the responses from participants grouped into broader categories (e.g., brass, string, woodwind, etc.).

Table 4

Primary and Secondary Instruments

Primary	Count	Percent	Secondary	Frequency	Percent
String	16	53%	String	21	70%
Woodwind	7	23%	N/A	9	30%
Brass	3	10%	Brass	5	17%
Percussion	3	10%	Woodwind	4	13%
Piano	2	7%	Percussion	2	7%
Guitar	1	3%	Piano	2	7%
			Voice	2	7%
			Guitar	1	3%

Note: Some participants indicated more than one primary or secondary instrument

Research Question 2

To address the second research question — "*What instructional practices do Colorado orchestra teachers engage in with their students in the classroom?* — participants were presented with a list of common teaching practices (see Table 5). The three most frequently reported teaching practices across all participants were the use of a method book (93%, n=28), incorporating composers from diverse backgrounds (87%, n=26), and explicit instruction on practice strategies (87%, n=26). In contrast, the practices reported least frequently included composition (40%, n=12), improvisation (47%, n=14), and the use of a curricular tools (e.g., ASTA string curriculum, district-created curricula, etc.) in their instructional design (50%, n=15).

Research Question 3

The third research question was the following: "*What activities do Colorado Orchestra teachers engage in with their students outside of the classroom?*" The top three shared activities across all participants were performance adjudication (90%, *n*=27), recruitment events (80%, *n*=24), and local travel (77%, *n*=20). The lowest three rated items were summer camps (30%, *n*=9), out-of-state travel (37%, *n*=11), and statewide travel (53%, *n*=16).

Table 5

What instructional practices do Colorado orchestra teachers engage in with their students?

Teaching Practice	Frequency	Percent	Teaching Practice	Frequency	Percent
Method book	28	93%	Guest clinicians	23	77%
Diverse composers	26	87%	Student leadership	21	70%
Practice strategies	26	87%	Singing/aural skills	19	63%
Non-classical styles	24	80%	Students in private lessons	19	63%
Formal assessments	24	80%	Student-led chamber music	16	53%
Historical/contextual discussion	23	77%	Curriculum	15	50%
Music theory	23	77%	Improvisation	14	47%
Modeling on string instrument	23	77%	Composition	12	40%

Note: Participants were given these as options for instructional practices, meaning no open-ended items were included.

Additionally, about half of participants indicated they rarely scheduled after-school rehearsals with their students (i.e., only rehearsals directly before a performance) (53%, *n*=16), and 20% (*n*=6) of participants reported that they never engage in after-school rehearsals. 10% (*n*=3) indicated after-school rehearsals scheduled for once a week throughout the semester, 10% (*n*=3) hold multiple after-school rehearsals each week, and only 7% (*n*=2) only have rehearsals occasionally (i.e., several times a month). 60% (*n*=18) of participants have 5 or more performances in a school year, 27% (*n*=8) have 4 performances per year, and 13% (*n*=4) have 3

performances per year. None of the participants indicated they had fewer than 3 performances per year.

Research Question 4

The fourth research question was the following: "*What relationships, if any, exist between orchestra teachers' expectancies, values, and perceived costs of teaching with the activities they engage in with their students?*

The expectancies (teaching ability beliefs), attainment values (importance of being an orchestra teacher), and opportunity costs (the degree to which teaching takes away from more desirable activities) of participants were evaluated using a Likert-type scale (1 to 6) adapted from prior studies for each variable to be relevant to teaching orchestra. The original instruments were designed for undergraduate biology (Perez et al., 2019) and math (Conley, 2012) students. Each EVT variable had four items in the questionnaire, which were then averaged together to create an overall composite score for each domain. Expectancy and attainment values were rated from strongly disagree to strongly agree (lowest to highest values). While high expectancy and attainment scores represent positive perceptions of teaching orchestra, high opportunity costs were reversed coded, as they relate to a negative perception of the time required to teach orchestra.

Descriptive statistics were calculated on the composite EVT scores of participants. Composite expectancies of all participants ranged from 1.75 to 6. The average expectancy value of participants equated to 4.52, a median of 4.38, a mode of 4.25, and a standard deviation value of 0.99. The composite attainment values of all participants ranged from 3.8 to 6. The average attainment values of participants was 5.2, median of 5.2, and mode of 5.6. Attainment values had

less variation than expectancies with a standard deviation value of 0.58. The composite opportunity costs of participants ranged from 1.5 to 6. The average opportunity cost was 3.29, median of 3, and mode of 4. Opportunity cost had the largest variance of the EVT values with a standard deviation value of 1.45.

Table 6

Correlations between EVT values and other characteristics

	M	*SD*	*Expectancy*	*Attainment*	*Cost*	*Age*	*# Licensed*	*Practices*	*Activities*
Expectancy	4.517	0.999	1						
Attainment	4.700	1.055	0.442*	1					
Cost	3.292	1.447	0.329	0.144	1				
Age	38.767	10.686	0.213	-0.128	0.193	1			
Yrs Licensed	13.067	10.302	0.227	0.072	0.261	0.818	1		
Practices	9.200	2.905	0.031	0.435*	0.082	-0.122	-0.109	1	
Activities	4.333	1.626	0.177	0.206	0.074	-0.365	-0.148	0.197	1

*Note: *p<0.05. M and SD are used to represent mean and standard deviation, respectively.*

Correlation analyses were performed on the expectancy, attainment, and cost scores of participants with a number of other variables (see Table 6). A moderately positive correlation was found between expectancy and attainment scores, $r(28) = .44$, $p = 0.015$. Participants who had high expectancy scores also tended to have high attainment scores. No significant relationships were found between the other EVT values (i.e., attainment/cost, expectancy/cost). Additionally, a moderate positive correlation was found between the number of teaching practices participants selected and their attainment scores, $r(28) = .44$, $p = 0.016$. Participants that had a higher attainment score tended to engage in a wider variety of teaching practices with their students, but no relationship was found between teaching practices and expectancies or perceived cost. No significant correlation was found between the number of reported out-of-

school activities and any of the EVT variables. Additionally, no significant relationship was found between participants' age and any of the EVT values.

Table 7

Independent Sample T-Tests Between String & Non-String EVT values

	String Players		*Non-String Players*		*t*(28)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Expectancy	4.917	0.994	4.117	0.860	2.357	0.026*	0.861
Attainment	5.383	0.626	4.983	0.477	1.969	0.058	0.719
Cost	3.500	1.306	3.083	1.594	0.783	0.440	0.286

*Note: *p<0.05. M and SD are used to represent mean and standard deviation, respectively.*

Inferential statistics were also performed between the expectancy, attainment, and perceived cost scores and several different groupings of participants. A significant difference was found between string players' (i.e., violin, viola, cello, bass) (M = 4.92) and non-string players' (M = 4.12) expectancy values, $t(28) = 2.357$, $p = 0.026$ (see Table 7). On average, participants who reported violin, viola, cello, or bass as a primary instrument had higher expectancy values than participants who were primarily non-string instrumentalists. No significant difference was found between participants' age, years of teaching, or length of time in their current position with any of the EVT variables.

Table 8

Independent Sample T-Tests Between # of Performances & EVT values

	5+ Performances		*<5 Performances*		*t*(28)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Expectancy	4.653	1.189	4.313	0.614	0.911	0.370	0.359
Attainment	5.361	0.464	4.917	0.660	2.172	0.039*	0.778
Cost	3.306	1.371	3.271	1.618	0.063	0.950	0.023

*Note: *p<0.05. M and SD are used to represent mean and standard deviation, respectively.*

A significant difference was found between the attainment values (importance of being a good teacher) of participants who have five or more performances per year ($M = 5.36$) than those who have less than five ($M = 4.92$), $t(28) = 2.17$, $p = 0.039$ (see Table 8). Participants who had higher attainment scores tended to hold more performances within the academic year. No significant differences were found between the expectancy or perceived cost values with the number of performances reported by participants.

Participants were also asked to select a statement that most closely aligned to their initial interest in teaching orchestra. 43% of participants (n=13) indicated, "I have always wanted to be an orchestra teacher, even before beginning college." 27% (n=8) selected, "I became interested in teaching orchestra during college," whereas 17% (n=5) indicated, "I wouldn't teach orchestra if it were not an expectation of my current job." These same participants also did not indicate strings as their primary or secondary instrument of study. Only 13% (n=4) became interested in teaching orchestra after becoming a licensed teacher.

Table 9

Independent Sample T-Tests Between Gender & EVT values

	Male		*Female*		*t*(28)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Expectancy	4.058	1.133	4.868	0.740	2.367	0.025*	0.846
Attainment	4.942	0.579	5.368	0.531	2.091	0.046*	0.767
Cost	3.385	1.364	3.221	1.546	0.164	0.764	0.112

*Note: *p<0.05. M and SD are used to represent mean and standard deviation, respectively.*

A significant difference was also found between the reported gender of participants and their expectancy and attainment values. Those who identified as female ($M = 4.87$) tended to report higher expectancies on their teaching than those who identified as male ($M = 4.06$),

$t(28) = 2.37$, $p = 0.03$ (see Table 9). Additionally, the attainment values of females ($M = 5.37$) tended to be higher than males ($M = 4.94$), $t(28) = 2.09$, $p = 0.046$. On average, females tended to have higher expectancy and attainment values than males, though no significant differences were found between the means of male and female cost values.

Table 10

Independent Sample T-Tests Between Curriculum-Use & EVT values

	Curriculum		*No Curriculum*		*t*(28)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Expectancy	4.733	1.001	4.300	0.978	1.196	0.242	0.438
Attainment	5.200	0.607	5.167	0.579	0.154	0.879	0.056
Cost	3.833	1.442	2.700	1.229	2.419	0.022*	0.846

*Note: *p<0.05. M and SD are used to represent mean and standard deviation, respectively.*

A significant difference was found in the perceived cost values of participants who reported using a curriculum to design their instruction ($M = 3.88$) than those who did not ($M = 2.70$), $t(28) = 2.42$, $p = 0.022$. On average, those who used a curriculum in their instructional design had higher cost values than those who do not use a curriculum. No significant differences were found between curriculum use and expectancy or attainment values.

CHAPTER 5 - DISCUSSION

The purpose of this study was to survey Colorado secondary orchestra teachers, identify the activities they engage in with their students, and examine any relationships between their activities and motivations as described by the expectancy-value framework. Participants completed an anonymous questionnaire that collected quantitative data on their demographic information and professional profiles. Additionally, EVT values were calculated by using modified Likert-type items from prior studies (Conley, 2012; Perez et al., 2019). Research questions for this study included:

1. What are the characteristics (e.g., age, years of experience, primary instrument of study) of secondary Colorado orchestra teachers?
2. What curricular practices do Colorado orchestra teachers engage in with their students in school?
3. What types of extracurricular activities do orchestra teachers engage in with their students?
4. What are the relationships between the expectancies, values, and perceived costs of teaching music with the curricular and extracurricular activities that Colorado orchestra teachers engage in with their students?

Demographic and Professional Profiles

Most participants in this study were Caucasian and female-identifying, which is consistent with other state and national surveys of orchestra programs (Gillespie et al., 2014; Gillespie & Hamann, 1998; Hamann et al., 2002; B. P. Smith et al., 2018; Tast, 2014). Participants were primarily in their thirties with an average of 13 years of teaching experience,

which is lower than the national average (Smith et al., 2018). Additionally, the representation of middle and high school teachers was relatively even (60% and 53% respectively), though it was very common in this study for a high school teacher to also teach at the middle school level as well.

While the Colorado Department of Education reports that the state is home to 147 rural school districts, only two rural districts were represented in this survey (Colorado Department of Education, 2024). It is unclear why rural schools did not have a high response-rate. It could be due to some working conditions that rural music teachers often find themselves in, such as feeling overwhelmed from teaching different subjects simultaneously, as shown in the data represented in this study. Indeed, many participants in this study reported not only teaching a variety of different courses in addition to orchestra (band being the most frequent doubling), but also travelled between multiple schools or school levels (e.g., teaching at elementary, middle, and high school).

Another reason for the lack of representation could be due to the fact that there may not be as many orchestra programs in rural areas in Colorado (Bergonzi, 1998; Delzell & Doerksen, 2000; Gillespie et al., 2014; Gillespie & Hamann, 1998; Hamann et al., 2002; Tast, 2014). Additionally, prior research has shown that there is a relatively even spread of orchestra programs across small, medium, and large district sizes, though this study mostly represents teachers in large districts. Regardless, it is important to keep in mind that this population is representative of predominantly White, female orchestra teachers in suburban communities.

The professional profiles of participants highlighted some interesting elements of Colorado orchestra teachers. Nearly two-thirds of participants reported participating in active

music-making outside of school. This aligns with the finding that K-12 orchestra teachers have historically reported higher job satisfaction when making music outside of the classroom than those that do not (Russel, 2009). Prior research has further supported this finding, demonstrating that music-making is an important element to the orchestra teacher identity (Gillespie & Hamann, 1998; Pellegrino & Russell, 2015; Russell, 2009; Smith et al., 2018). Just under half of participants (47%) did not report violin, viola, cello, or bass as their primary instrument. This is a greater percentage than the 20-30% found in prior studies (Gillespie & Hamann, 1998; Pellegrino & Russell, 2015; Russell, 2009; Smith et al., 2018). However, a large majority of participants (70%) reported playing a stringed instrument as a secondary instrument of study, though their level of comfort on these instruments is not clear from this data. The data also does not represent if their abilities on stringed instruments were acquired prior to teaching orchestra or as a necessity of the job.

The course offerings for orchestra across school levels in Colorado seem to be consistent with previous findings as well (Doerksen, 2000; Gillespie & Hamann, 1998; Hamann et al., 2002; Horvath, 1993; Schmidt et al., 2006; B. P. Smith et al., 2018). Those who reported teaching beginning orchestra classes were reported to be at either the 4th, 5th, or 6th grade level. Moreover, advanced orchestra courses occurred mostly in the high school setting. Additionally, the data does seem to suggest that "program enhancements" such as chamber music and symphony orchestras are not a common practice of Colorado orchestra teachers. This finding is not surprising when considering a decline of these activities over the past decade has been observed (Smith et al., 2018).

Teaching Practices

The data represented a lot of commonalities between the teaching practices of orchestra teachers across the state. Nearly all participants reported using a method book. Method books have been found to be a common practice among instrumental music teachers (Musco, 2011; Sanders, 2023; Wall, 2018), and teachers often use it as the curriculum to guide instruction. Half of participants reported using a curriculum for instructional design, which is less than the 62% reported by Hamann and colleagues (2002) and the 66% reported by the National String Project Consortium (2010). However, this rate is similar to the 53% that reported using curricula in instructional design Smith and colleauges (2018) reported in their study. This suggests that formal curriculum use may have experienced a decline since 2010.

Nearly all participants reported studying repertoire from composers of diverse backgrounds (historically underrepresented, non-Western musical styles, etc). This suggests there has been a positive response of orchestra teachers to move towards increased representation in music classes per the recommendation of various authors and practitioners (e.g., Davis & Dean, 2023; Pope, 2019; Zabanal, 2022). The only two practices that were not reported by at least half of the participants were improvisation (47%) and composition (40%). This is not a surprising result considering that previous researchers who have studied music teachers found these to be the least represented elements of music instruction in most large ensemble classes (Hopkins, 2013; Menard, 2015; S. E. Schopp, 2006; Strand, 2006). While these prior studies were conducted over ten years ago, there seems to be a pervasive trend in large ensemble classes being biased towards performance activities rather than intentionally creative pursuits like improvisation and composition.

Extracurricular Activities

Nearly all participants (90%) surveyed reported engaging in some form of performance adjudication event (receiving a performance rating and feedback from a panel of judges). While prior research (Culp & Jones, 2020; Salvador, 2019) has discussed the impact adjudication events have on teacher ability-beliefs, no significant relationship was found between the expectancies of participants and their participation in these events. This may be due to the fact that most participants were fairly experienced educators (averaging 13 years of experience), and may not need to rely on external validation for positive ability perceptions. Expanding this inquiry to examine a larger and more diverse multi-state population could provide important insight as to whether a connection exists between teacher ability beliefs and the ratings they receive at adjudication events.

Recruitment events were the second-most reported activity from participants (80%). Anecdotally, music programs at the secondary level (especially large ensemble classes) are not compulsory for students in most cases. Additionally, students may find it difficult to enroll in orchestra any time after elementary or early middle school due to the lack of beginner courses offered beyond those early years. It seems logical that orchestra teachers put in the extra effort to travel to other schools and promote their programs as much as they are able to. Unfortunately, the number of students in each participants' orchestra was unknown, so additional research is needed to determine the effectiveness of recruitment events.

Another common practice of ensemble programs is to engage in rehearsals and performances outside of normal school hours. Over half of participants (60%, n=18) reported having five or more performances each academic year, while all other participants indicated

either three or four performances. No participant indicated having less than three performances per year with their students as a curricular requirement of being enrolled in orchestra. Despite the reported frequency of performances, over half of participants indicated that they rarely or never hold rehearsals before or after school. This suggests that the majority of Colorado teachers' instruction and rehearsal happens during class time, with the exception of a single rehearsal directly before a performance.

Only a quarter of participants reported having regular after school rehearsals, suggesting that most teachers rely on scheduled class time for the bulk of their ensemble preparation. This discrepancy may stem from factors such as district policies restricting extracurricular activities, competing student obligations, or teacher philosophies that prioritize in-school rehearsal. While some programs focus on in-class rehearsal and fewer outside commitments, others opt for extra rehearsal obligations to meet their specific performance goals.

Two of the least reported activities from the participants were both in-state (53%, n=16) and out-of-state travel (37%, n=11). While travel has been a typical hallmark of music programs, approximately half of the programs surveyed reported doing so. Many participants reported teaching multiple disciplines beyond orchestra (e.g., band, theory, guitar, marching band), meaning they are needing to invest in multiple music programs simultaneously. Multiple factors could impede a program's ability to travel, such as budgetary restraints, competing responsibilities from other music programs, or teachers may prioritize local performances instead. Without specific data on participant geographic distribution, funding, or specific performing activities, it is difficult to identify what leads some orchestra programs to travel while others elect to not do so.

Expectancies, Values, and Perceived Costs

On average, the participants in this study tended to report high attainment values, moderate ability perceptions, and conflicting cost perceptions on teaching. The Likert-type items regarding attainment value were primarily focused on how important being a good orchestra teacher was to participants (e.g., *being good at teaching orchestra is an important part of who I am*). The high values indicate that on average, these participants intrinsically value being a "good" orchestra teacher. Considering that most participants indicated that they initially reported to be an orchestra teacher before college, the high intrinsic value of participants is not surprising. Participants who had higher expectancy values and reported a higher variety of teaching practices were also found to have higher attainment values.

Furthermore, there did not seem to be any significant difference between participants' age, years of experience, or length of time in their position with attainment scores. This may suggest that intrinsic interest in the profession is not something that will develop naturally over the course of a career. Given the lack of research of orchestra teachers' expectancies, values, and cost-perceptions, further exploration of how intrinsic enjoyment of teaching orchestra is warranted.

Interestingly, significant differences emerged between participant gender and attainment scores., with female-identifying participants reporting higher attainment values than their male-identifying counterparts. Because orchestra teaching has historically been a female-dominated field (Gillespie et al., 2014; Gillespie & Hamann, 1998; Hamann et al., 2002; B. P. Smith et al., 2018; Tast, 2014), the higher attainment values among female-identifying teachers may refelct the influence of greater representation on their perceptions of professional identity. Females also

tended to have higher ability perceptions than males. However, no in-depth qualitative data were gathered on the nature of participants' views of the profession through this study, so future research may provide additional insight into whether these differences occurred through personal experiences, broader societal norms, or the typical gender distribution within the orchestra teaching profession.

A significant difference also emerged between the number of reported performances per academic year with attainment values. Those who scheduled five or more concerts tended to report higher attainment values than those scheduling fewer than five. This suggests that teachers who place greater importance on orchestra teaching may be more motivated to organize additional performances throughout the school year. However, various contextual factors like scheduling constraints, budgetary limitations, and administrative support were not factored into this study, so further investigation is needed to draw any definitive conclusions.

While participants had moderately high ability perceptions, there were significant difference between those who reported studying a violin, viola, cello, or bass as their primary instrument (n=16) than those who did not (n=14). This suggests that direct performance experience on stringed instruments may contribute to an orchestra teachers' overall belief in their effectiveness as a teacher. Additionally, this finding raises questions about how teacher education programs and professional development opportunities might better support teachers who do not come from a string performance background, potentially narrowing any gaps in their perceived or actual effectiveness as orchestra instructors.

Additionally, those that did not report a string instrument as either their primary or secondary instrument also reported that they would not be teaching orchestra if it was not a

current responsibility of their current position. This suggests that limited experience on a stringed instrument (violin, viola, cello, or bass) may negatively affect the quality of a teachers' experience in the orchestra classroom. It seems possible that low ability beliefs could contribute to attrition in the profession, perpetuating the cycle of attrition described by Ammerman when someone enters the profession without proper training (2017). Solutions to this phenomenon could include targeted professional development, mentorship, and training geared towards non-string specialists.

The perceived cost values of participants varied more than any of the other EVT variables. The cost items were designed to measure the opportunity cost of participants. In other words, participants rated how much they believed teaching orchestra affected their relationships with others and time to do other enjoyable activities. While there was no significant difference between many different factors (e.g., age, experience, string or non-string player, gender, activities, teaching practices), those that reported using a curriculum in instructional design tended to report higher perceived costs of teaching than those that did not. The exact reason for this difference is not immediately clear. The difference in cost could be due to participants designing their own curriculum. Alternatively, if the teachers who do not use a curriculum have a natural understanding of their desired scope and sequence, they may not feel the need to spend much time on curriculum design. Additional research on the effects of curricula on teaching practice may provide additional insight on the difference of perceived costs.

Summary

The quantitative data gathered from this study represents a predominantly female, White, and suburban population of Colorado orchestra teachers. Many participants teach more than one

discipline in the 2024-2025 school year (e.g., guitar, band), and participants that teach high school orchestra also taught at the middle school level. Nearly half of participants did not report playing violin, viola, cello, or bass as their primary instrument of study. The most frequently reported teaching practices of participants were the use of a method book and representation of composers from diverse backgrounds. Improvisation and composition were the least represented teaching practice. Almost all participants engaged in performance adjudication and recruitment, but in-state and out-of-state travel were some of the least reported. Participants on average had high attainment values, moderate ability perceptions, and conflicting cost perceptions on teaching. Significant differences were found between participant attainment values and their gender and reported performances per year. Participants who reported playing a string instrument as their primary tended to have higher ability-perceptions than those who did not. Participants who use a curriculum in instructional design tended to report higher perceived costs than those who do not.

Practical Implications

The low response rate from rural orchestra directors suggests a need for targeted strategies for recruiting and supporting orchestra teachers in rural communities. While the literature suggests that most orchestra programs reside in suburban communities, it is also possible that recruitment strategies for descriptive surveys do not accurately represent the reality of rural music education. Additionally, with most participants identifying as White females, there is a clear need to broaden recruitment and retention of a greater diversity of orchestra teachers. Adding more diversity to the orchestra teaching workforce may promote more inclusive music programs and serve a wider range of student communities.

Nearly half of participants of this study reported that their primary instrument of study was not violin, viola, cello, or bass—a finding that underscores the unique challenges faced by educators who enter the field without a traditional Eurocentric orchestral background. These teachers showed lower ability perceptions and were more likely to state that they would not teach orchestra if it were not a job requirement. Increased support of these teachers may help increase confidence, reduce attrition, and ultimately improve teaching effectiveness. In response, teacher preparation programs and in-service professional development should place greater emphasis on foundational string pedagogy and skill-building for educators without orchestral backgrounds.

Additionally, participants' conflicting cost perceptions reveals that orchestra teachers often struggle to balance professional responsibilities with personal and family life. In particular, those who use curricula in instructional design reported higher perceived costs, suggesting that there is a need for guidance on efficient curriculum use or development. Professional development for these teachers might include coaching, curriculum templates, or collaborative planning time to alleviate teachers' workload and promote a healthier work-life for orchestra teachers of all backgrounds.

Theoretical Implications

The expectancy-value framework has been applied in a number of educational settings but have been mostly student-centered. This study was intended to be an entry-point into future researchers to dive further into the expectancies, values, and perceived costs of music teachers. While representative of a small sample, this study is the first step in gaining a deeper understanding of the context of Colorado public school orchestras. There is still much unknown about rural orchestra programs in the state.

Limitations

Researchers should exercise caution when generalizing results from this study into other contexts. As discussed earlier, the sample size is relatively small for this study and only represents a very specific demographic. Additionally, the researcher was not able to gain access from any organization to an official list of Colorado orchestra teachers, so the exact number of teachers across the state is unknown. Additionally, the data represented is self-reported by participants, so some of the quantitative data may not reflect accurate numbers. The extent to which participants engaged in each activity was also not represented. For example, whether a teacher spent one day on composition, or if they created an entire unit around composition.

Despite the findings of prior studies, attainment value and expectancies were the only two domains that were statistically connected in this study. Since I adapted the language from prior studies for the EVT instrument to be relevant to teaching orchestra, it is possible that there may be some threats to the validity of the instrument. Further testing of the instrument used in this study may be necessary to determine the validity and reliability of the data gathered here.

Suggestions for Further Research

1. Given that the participants of this study did not exhibit any significant differences of attainment values based on age or experience level, further research is needed on the nature of how orchestra teachers develop an intrinsic interest in teaching orchestra.
2. Data from this study suggests that those who use a curriculum in instructional design also have higher perceived opportunity costs of teaching. Further research could explore any relationships that may exist between curricula and the perceived costs.

3. 82% of Colorado's school districts are considered rural, but this population primarily represented suburban communities and large school districts. Future researchers could repeat this study while intentionally recruiting a diverse representation of urban, suburban, and rural communities in their data collection.

Conclusion

Public school orchestra programs face the challenge of growing enrollment while the number of teachers have remained constant (Gillespie & Hamann, 1998; Hamann et al., 2002; Leonhard, 1991; B. P. Smith et al., 2018). The increasing demand for teachers has led to the hiring of orchestra teachers from a wide variety of backgrounds, including those without knowledge of string pedagogy or orchestral experience. Data represented in this study suggests that teachers' ability beliefs may be negatively affected by this lack of experience. Since ability beliefs and attainment values have been shown to lead to greater persistence and improved performance (J. Eccles, 1984a, 1984b; J. Eccles et al., 1983; Meece et al., 1990), a greater effort needs to be made to help support the teachers who find themselves in positions for which they don't feel qualified. Much is still unknown about the nature of the expectancies, values, and perceived costs of orchestra teachers and how it relates to their quality of experience in the classroom. If support is provided to orchestra teachers to help enhance their expectancies, support their values, and lower their perceived costs, the quality of their students' education will improve as a result.

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APPENDIX A

Participant Informed Consent

Through this study, I am hoping to collect data that will provide valuable information about Colorado orchestra teachers, their activities, and their motivations. Your participation in this brief questionnaire will help us understand more about how to better serve orchestra teachers and students across the state.

If you agree to participate in this study, you will be asked to complete a short questionnaire (5-10 minutes). For more detailed information, please see the notes below and feel free to contact me at paul.haarala@colostate.edu.

Eligibility: You must meet the following requirements to participate in this research study:

Employed as a teacher in the state of Colorado
Teach at least one string orchestra class in the 2024-2025 school year

Risks: I will use Qualtrics to collect your responses. They may have Terms of Service and Privacy policies outside of the control of CSU that allow them to use your data for other purposes. I will make every effort to safeguard your data. However, I cannot guarantee the security of data obtained via the Internet.

Benefits: You may not benefit personally from being in this study, but your answers could help us understand more about how teacher motivations relate to the activities they do or do not do with their orchestra programs.

Privacy and Future Use: Your responses to the questionnaire are anonymous. That means we won't know which responses are yours. We won't collect names, internet addresses, email addresses, or any other identifiable information.

We may use your responses in future research or share them with other researchers.

Complaints or Concerns: If you have questions about the study, please contact the researcher using the contact information provided above.

If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at CSU_IRB@colostate.edu

Thank you for taking the time to consider our study. You do not have to participate in our study, but we hope you will. Please also consider sharing this study with other Colorado orchestra teachers that you know. To ensure your responses will be included in our study, please complete the questionnaire by December 1st, 2024.

If you have read this information and consent to participate in this study, please select "yes" below to access the questionnaire.

APPENDIX B

IRB Approval Documentation

The protocol listed below has been approved by the CSU IRB Determinations Fort Collins on Tuesday, October 15th 2024.

PI: Johnson, Erik

Submission Type and ID: Initial 6269

Title: A Survey of Colorado Orchestra Teachers' Curricular and Extracurricular Activities Approval Date: Tuesday, October 15th 2024

The CSU IRB (FWA0000647) has completed its review of protocol 6269 A Survey of Colorado Orchestra Teachers' Curricular and Extracurricular Activities. In accordance with federal and state requirements, and policies established by the CSU IRB, the committee has approved this protocol under Exempt review.

The IRB determined that this protocol meets the criteria for exemption from IRB review under exempt category 2.

In conducting this protocol, you are required to follow the requirements listed in HRP-103 - INVESTIGATOR MANUAL.

Ongoing IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a new request to the IRB for a determination.

If no expiration date is listed above, continuing review is not required for this study.

The Investigator Manual defines the standards expected of Principal Investigators overseeing the conduct of Human Subjects Research at CSU. Any modifications to the approved study must be submitted for review through Kuali Protocols. All approval letters and study documents are located within the Activity Log in Kuali Protocols.

What are your responsibilities now, as you move forward with your research?

Document Retention: The PI is responsible for keeping all regulated documents, including IRB correspondence such as this letter, approved study documents, and signed consent forms for at least three (3) years following protocol closure for audit purposes. Documents regulated by HIPAA, such as Release Authorizations, must be maintained for six (6) years.

Site Permission: If your research is conducted at locations outside of Colorado State University (such as schools, hospitals, or businesses), you must obtain written permission from all sites to recruit, consent, study, or observe participants. Generally, such permission comes in the form of a letter from the school superintendent, director, or manager. You must maintain a copy of this permission with study records.

Training: All researchers collecting or analyzing data from this study must renew training in human subjects research via the CITI Program (www.citiprogram.org) every 3 years. New personnel must complete training and be added to the protocol before beginning research with human participants or their data.

Modifications: Change to any aspect of this protocol or research personnel must be approved by the IRB before implementation, except when necessary to eliminate apparent immediate hazards to subjects or others. In such situations, the IRB should still be notified immediately.

Unanticipated Problems/Adverse Events: Unanticipated problems involving risks to subjects or others, serious adverse events, and noncompliance with the approved protocol must be reported to the IRB immediately through a reportable event in Kuali Protocols in accordance with the Reportable New Information CSU IRB procedures. When in doubt, consult with the HRPP/IRB.

Monitoring: The HRPP reminds researchers that this study is subject to monitoring at any time by Colorado State University's HRPP staff, Institutional Review Board, Post Approval Monitoring team, or authorized external entities. Timely cooperation with monitoring procedures is an expectation of IRB approval.

Change of Institutions: If the PI leaves Colorado State, the study must be closed or the PI must be replaced on the study or transferred to a new IRB. Studies without a Colorado State University PI will be closed.

Other Approvals: This Colorado State IRB approval covers only regulations related to human subjects research protections (e.g. 45 CFR 46). This determination does not constitute approval from any other Colorado State campus departments, research sites, or outside agencies. The Principal Investigator and all researchers are required to affirm that the research meets all applicable local/state/ federal laws and university policies that may apply.

If you have questions about this determination or your responsibilities when conducting human subjects research on this project or any other, please do not hesitate to contact Colorado State's HRPP at CSU_IRB@colostate.edu or 970-491-1553. We are here to help!

Sincerely,

Colorado State University Human Research Protection Program/ Institutional Review Boards

APPENDIX C

Quantitative Questionnaire

COLORADO ORCHESTRA TEACHER QUESTIONNAIRE

Through this study, I am hoping to collect data that will provide valuable information about Colorado orchestra teachers, their activities, and their motivations. Your participation in this brief questionnaire will help us understand more about how to better serve orchestra teachers and students across the state.

If you agree to participate in this study, you will be asked to complete a short questionnaire (5-10 minutes). For more detailed information, please see the notes below and feel free to contact me at paul.haarala@colostate.edu.

Eligibility: You must meet the following requirements to participate in this research study:

- Employed as a teacher in the state of Colorado
- Teach at least one string orchestra class in the 2024-2025 school year

Risks: I will use Qualtrics to collect your responses. They may have Terms of Service and Privacy policies outside of the control of CSU that allow them to use your data for other purposes. I will make every effort to safeguard your data. However, I cannot guarantee the security of data obtained via the Internet.

Benefits: You may not benefit personally from being in this study, but your answers could help us understand more about how teacher motivations relate to the activities they do or do not do with their orchestra programs.

Privacy and Future Use: Your responses to the questionnaire are anonymous. That means we won't know which responses are yours. We won't collect names, internet addresses, email addresses, or any other identifiable information. We may use your responses in future research or share them with other researchers.

Complaints or Concerns: If you have questions about the study, please contact the researcher using the contact information provided above. If you have any questions about your rights as a volunteer in this research, contact the CSU IRB at CSU_IRB@colostate.edu Thank you for taking the time to consider our study. You do not have to participate in our study, but we hope you will. Please also consider sharing this study with other Colorado orchestra teachers that you know. To ensure your responses will be included in our study, please complete the questionnaire by December 1st, 2024.

If you have read this information and consent to participate in this study, please select "yes" below to access the questionnaire.

○ I consent to participate in this study (continue)

○ I do not consent to participate in this study (exit survey)

Do you teach at least one orchestra class this academic year (2024-2025)?

- ○ Yes
- ○ No

Age

_____

What best describes your gender identity?

- ○ Female
- ○ Male
- ○ Transgender
- ○ Non-binary
- ○ Gender not listed here _____
- ○ Prefer not to say

What racial or ethnic groups describe you?

- ☐ American Indian or Alaskan Native
- ☐ Asian/Pacific Islander
- ☐ Black or African American
- ☐ Hispanic
- ☐ White/Caucasian

☐ Multiple ethnicity/other (please specify)

_____

☐ Prefer not to say

Number of years teaching music as a licensed teacher

_____

Number of years teaching music as a non-licensed teacher (e.g., private lessons, Suzuki instructor, music coach)

_____

Number of years you have been in your current position

_____

Number of schools in which you have served as a licensed teacher during your career

_____

Number of schools in which you have served as an unlicensed teacher during your career (section coach, private lessons)

_____

Primary Instrument

_____

Secondary Instrument(s): (N/A if no secondary)

_____

Please indicate ALL of the degrees you have completed. List the name of each degree in the text box provided.

☐ Bachelor's degree in music

_____

☐ Master's degree in music

_____

☐ Doctorate in music

_____

☐ Other _____

Please indicate all other music activities you currently participate in outside of school (ex. teaching private lessons, ensemble member, church choir, etc)

_____

_____

_____

_____

_____

Are you an active member of a professional music education organization? (e.g., ASTA, NAfME, etc.)

○ Yes

○ No

On average, how many professional development conferences do you attend each year?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

How many professional development conferences specific to music have you attended in the past 3 years?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

How many professional development conferences have you attended not related to music in the past 3 years?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

Please specify what non-music conferences you attended

_____

_____

_____

_____

_____

Beyond the coursework that led to you earning a teaching license, are any additional endorsements that you've earned? Please put N/A if no additional endorsements. (e.g., Suzuki)

_____

What led you to become interested in teaching orchestra?

- ○ I wouldn't teach orchestra if it were not an expectation of my current job
- ○ I became interested in teaching orchestra after becoming a licensed teacher
- ○ I became interested in teaching orchestra during college
- ○ I have always wanted to be an orchestra teacher, even before beginning college

School size

- ○ Small (500 or less students)
- ○ Medium (500 - 1,199 students)
- ○ Large (1,200 or more students)

Pick the one that best describes the community in which you teach:

- ○ Rural
- ○ Suburban
- ○ Urban
- ○ Other _____

District size

- ○ Under 4,000 students
- ○ 4,000 - 10,000 students
- ○ More than 10,000 students

Most secondary schools in my district have an orchestra program:

- ○ 1 - Strongly disagree
- ○ 2 - Disagree
- ○ 3 - Somewhat disagree
- ○ 4 - Somewhat agree
- ○ 5 - Agree

○ 6 - Strongly agree

Type of School (charter/private/public, etc.)

_____

Please list all courses you will teach in the 2024-2025 academic year. Indicate whether each course is semester- or year-long. (e.g., HS Symphony Orchestra, year long; General music, semester long)

_____

_____

_____

_____

_____

Please list what you will teach in the 2024-2025 academic year outside of your normal teaching load. (e.g., before/after school ensembles, youth symphonies, section coaching)

_____

_____

_____

_____

_____

If you have any additional information about your teaching load that you would like to share, please include it here:

_____

_____

_____

_____

_____

Please select all of the following elements from the list below that you incorporate regularly into your instruction:

- ☐ Use of a curriculum in designing instruction (e.g., ASTA curriculum)
- ☐ Use of a method book (e.g., Strictly Strings)
- ☐ Historical/contextual discussion of repertoire
- ☐ Composers of diverse backgrounds (e.g., BIPOC, LGTBQ+, contemporary, traditional, etc.)
- ☐ Improvisation
- ☐ Composition
- ☐ Written music theory (e.g., key signatures, intervals, functional harmony, etc.)
- ☐ Modeling on a string instrument for students
- ☐ Singing/aural skills (e.g., solfege, ear training, etc.)
- ☐ Performance styles other than "Classical" music (e.g., mariachi, fiddle, jazz, pop, etc.)
- ☐ Practice strategies for students (breaking difficult passages down, structuring practice time, etc.)
- ☐ Students enrolled in private lessons (during or outside of school)
- ☐ Guest clinicians (conductors, section coaches, performers, etc.)
- ☐ Formal assessments (e.g., playing tests, theory tests, fingerboard mapping, etc.)
- ☐ Student-led chamber music (e.g., duets, trios, quartets, etc.)

☐ Student leadership roles (e.g., librarian, inventory manager, student conductor, section leaders, etc.)

Please select all of the activities from the list below that you engage in with your students:

☐ Adjudication events (e.g., Concert festival, National Orchestra Festival, etc.)

☐ Local travel (e.g., local concerts, visits to other schools, etc.)

☐ Statewide travel (Outside of local community)

☐ Out-of-state travel (e.g, Disney, New York, etc.)

☐ Fundraising (e.g., car wash, selling items, SnapRaise, etc.)

☐ Recruitment events (e.g., performance at feeder schools, instrument petting zoo, etc.)

☐ Orchestra-specific summer camps

On average, how frequent do you have before/after school rehearsals with your students? This can include sectionals, full ensemble rehearsals, chamber music coachings, etc.

○ Never

○ Rarely (e.g., only directly before a performance)

○ Occasionally (e.g., several times a month)

○ Frequently (e.g., once a week)

○ Very frequently (e.g., multiple times a week)

On average, how many performances does your program have each year?

- ○ None
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

Compared to other orchestra teachers in your district, how effectively do you think you will teach orchestra this year?

- ○ 1- Not effective at all
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6 - Very effective

How effective do you think your teaching will be this semester?

- ○ 1- Not effective at all
- ○ 2
- ○ 3
- ○ 4

○ 5

○ 6 - Very effective

How good are you at teaching orchestra?

○ 1- Not good at all

○ 2

○ 3

○ 4

○ 5

○ 6 - Very good

If you were to order all of the orchestra teachers in your district from the worst to best in teaching ability, where would you put yourself?

○ 1- The worst

○ 2

○ 3

○ 4

○ 5

○ 6 - The best

Being someone who is good at teaching orchestra is important to me

- ○ 1- Not important at all
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6 - Very important

To me, being good at solving problems which involve teaching orchestra is...

- ○ 1- Not important at all
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6 - Very important

Being good at teaching orchestra is an important part of who I am.

- ○ 1- Not important at all
- ○ 2
- ○ 3
- ○ 4

○ 5

○ 6 - Very important

It is important for me to be someone who is good at solving problems involving teaching orchestra.

○ 1- Not important at all

○ 2

○ 3

○ 4

○ 5

○ 6 - Very important

Thinking pedagogically is an important part of who I am.

○ 1- Not important at all

○ 2

○ 3

○ 4

○ 5

○ 6 - Very important

Teaching orchestra takes a lot of time away from other activities that I want to pursue.

○ 1- Strongly disagree

○ 2

○ 3

○ 4

○ 5

○ 6 - Strongly agree

I'm concerned about losing track of some valuable relationships because of the work required to teach orchestra.

○ 1- Strongly disagree

○ 2

○ 3

○ 4

○ 5

○ 6 - Strongly agree

I'm concerned that I have to give up a lot to teach public school orchestra well.

○ 1- Strongly disagree

○ 2

○ 3

○ 4

○ 5

○ 6 - Strongly agree

I'm concerned success in teaching orchestra requires that I give up a lot of other activities I enjoy.

○ 1- Strongly disagree

○ 2

○ 3

○ 4

○ 5

○ 6 - Strongly agree