8-2024

Leavers and Movers: Turnover of Music Teachers in Nebraska

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A THESIS

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Master of Music

Major: Music

Under the Supervision of Professor Robert H. Woody

Lincoln, Nebraska

August, 2024

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University of Nebraska, 2024

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The purpose of this study was to determine if the rates of music teachers leaving the teaching profession and changing schools were significantly different than those of teachers of other content areas in the state of Nebraska. This study used data from the previous nine years of the Nebraska Department of Education's Education Directory in order to find results for the entire population. Results indicated that music teachers leave the profession at similar rates as teachers of other content areas, but move schools at significantly higher rates.

Keywords: Education, music education, teacher retention

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CHAPTER ONE: INTRODUCTION

Problem

"A Nation at Risk," published in 1983, opens with a stark warning: "Our Nation is at risk." The report presented several reasons for this dire state, including issues related to the teaching profession:

> "The Commission found that not enough of the academically able students are being attracted to teaching; that teacher preparation programs need substantial improvement; that the professional working life of teachers is on the whole unacceptable; and that a serious shortage of teachers exists in key."

The Commission then laid out seven recommendations for improving teaching in the United States (National Commission on Excellence in Education, 1983).

Throughout the fallout of this report, many studies held that an aging workforce was to blame along with a smaller number of teachers coming from teacher training programs and increasing numbers of teacher retirements. (Darling-Hammond 1984, National Commission on Excellence in Education, 1983). Ingersoll (2001), however, found that the number of teachers leaving the profession due to retirement was "relatively minor" compared to those teachers leaving the profession for other reasons. Ingersoll also found that the teacher shortage was not a result of an insufficient supply of teachers from teacher preparation programs, but rather from "excessive demand resulting from a "revolving door"—where large numbers of teachers depart their jobs for reasons other than retirement." This finding turned the research on the teacher shortage on its head, and paved the way for much of the research on teacher attrition and movers

in the last two decades. Sutcher, Darling-Hammond, and Carver-Thomas (2016) confirmed this finding is not an anomaly of the early 2000s, but remains an issue in the teaching profession. While this issue has come to the forefront of many discussions regarding education both in the national press and in the research literature, few of these studies have focused on music teachers.

Purpose

This study aimed to determine if there is a significant difference in the rates of attrition and movers of music teachers in Nebraska compared to that of teachers of other content areas from the school years 2014-2015 to 2022-2023.

Research Questions

1. Is there a significant difference between the attrition rates of music teachers in Nebraska compared to that of teachers of other content areas?
2. Is there a significant difference between the migration rate of music teachers in Nebraska compared to that of teachers of other content areas?

Definitions of Terms

There are a number of different ways that researchers describe the different states of teachers as they move, leave, or stay in their jobs. The National Center for Education Statistics (NCES) classified teachers in three different ways for their Teacher Follow-up Survey (TFS), and these are the most commonly seen throughout the literature. The TFS only accounts for K-12 teachers.

1. The term “Movers” refers to teachers who move from one school to another. This is alternately referred to as “migration” in some studies.
2. The term “Leavers” refers to teachers who leave the teaching profession. This is alternately referred to as “attrition” in some studies.

3. The term “Stayers” refers to teachers who remain at the same school. This is alternately referred to as “retention” in some studies.

Together, moving and leaving are often referred to as “turnover”. These two are often combined because, as Ingersoll (2001) argued: a teacher *moving* is just as impactful on the school level as a teacher *leaving*. In other words, at a school level, it does not matter whether a teacher leaves the school or leaves the profession entirely, from the school’s (and more importantly, the student’s) perspective, the teacher is no longer teaching at that school.

Delimitations

This study was limited to teachers in Nebraska. While there are nationally representative data sets put together by the National Center for Education Statistics (NCES) that are made available to scholars, these data are sampled. Sampling biases in the data, along with low response rates from teachers, lead to a relatively small amount of data on music teachers.

By using the Nebraska Educational Directory, this study was able to encompass nearly the entire population of music teachers in Nebraska for the years listed. Unfortunately, data was unable to be collected prior to the 2014-2015 school year, meaning this study covers a relatively short time frame. Between the 2018-2019 and 2019-2020 school years, the Nebraska Educational Directory reassigned teacher identification numbers, so data from that year was inaccurate.

Basic Assumptions

This study was able to use an entire population set of data, but the Nebraska Educational Directory is limited by how school systems input and describe their teacher’s jobs. Some assumptions had to be made as to how the Educational Directory had teachers listed. Teachers who teach at multiple buildings, known as itinerant teachers, were listed in the directory multiple times, once for each school. For “ Leavers” calculations, these duplicates were eliminated, as it

was assumed that there was only one teacher. However, for "Movers" calculations, these duplicates were not eliminated, as a leave at one of those schools has the same impact for that school as another teacher leaving would have.

Another time that teachers were listed multiple times in the directory was for teaching multiple subjects, even at the same school. If each of these subjects was not music, leaving was counted as one leave for non-music teachers, and a move was counted as one move for non-music teachers. If these teachers had music listed as one of their subjects, they were counted as a music teacher for either leaver or mover, if applicable.

Theory

Teacher turnover has a great impact on student success (Ronfeldt, Loeb, Wyckoff, 2013). As music is often an elective class, participation suffers when there is high teacher turnover (Robinson, 2018). Because teacher turnover affects the quality and participation levels of the student's education, this is worthy of study.

While much of the teacher turnover literature focuses on two separate types of turnover, that of "Leavers" and "Movers", are rarely explored in the literature, especially with regards to music teachers. With experience in the music teaching field, I observed that music teachers tend to move schools often, but do not seem to leave the profession entirely. While I can speculate reasons, that is not the purview of this study.

Methodology

I gathered data from the Nebraska Department of Education's Education Directory, a publicly available dataset of all teachers in Nebraska, as reported by each district in the state. Data that I collected included a teacher ID number, school, and subject information. I then used R (a statistical programming language) to aggregate the data, filtering the data for music and non-

music teachers. I processed this data to determine the leaver and mover rate for each year. Finally, I ran a chi-square test to determine if there was a significant difference in the attrition and turnover rates between music and non-music teachers.

Significance of Study

Teacher turnover can have a large effect on educational outcomes (Ronfeldt, Loeb, Wyckoff, 2013). This particular point is the reason teacher turnover is such an important point for research: moving and leaving affect student educational outcomes. In addition to diminished educational outcomes, teacher turnover is costly to school systems (Barnes et al., 2007; Haynes, 2014; Defeo et al., 2017).

In a meta-analysis of the literature on teacher turnover, Nguyen et al. (2020) noted a wide variety of factors in a teacher's decision to leave. They noted that gender is not a significant factor in teacher turnover, and teachers who are non-White or Hispanic were less likely to turnover than White or Black. Part-time teachers and married teachers are both more likely to leave a school than their full time and not married counterparts. Regarding qualifications, teachers with higher scores on university entrance exams were more likely to turnover, and teachers with standard credentials were less likely to turnover than teachers with alternative certifications. They also found that teachers in charter schools were more likely to turnover than their public school counterparts, and that rural, suburban, and urban teachers showed little difference in the probability of turnover. Raising teacher salaries is one of the most talked about strategies for reducing teacher turnover. It was found to slightly lower the probability of turnover. Teachers with less than three years of experience were also more likely to turnover. Important to this study, teachers that teach special education and STEM were more likely to turnover than other content areas.

Regarding music teachers, few studies exist that compare the turnover rate of music teachers to those of other content areas. Hancock and Madsen (2002) found that music teachers leave the profession at a lower rate than other content areas. The study did not account for teachers who changed schools, only those who left. Hancock (2016) studied the reasons music teachers leave. The top reasons included pregnancy/childcare, retirement, and staffing actions by schools.

Nebraska is not exempt from this crisis. According to data from the Nebraska Department of Education (NDE), the number of vacant teaching positions has increased each year for the past four years (Nebraska Department of Education, 2022). Instrumental/Vocal Music Educators are listed as a shortage area for the 2023-2024 school year. According to NDE data, 3% of Instrumental/Vocal music positions are unfilled for the 2023-2024 school year. “Unfilled” in this context refers to positions that are not staffed by a fully licensed and qualified teacher.

As the teacher shortage becomes more pronounced each year, the profession must continue to consider ways in which to retain teachers. This study will help music teachers, administrators, and music education teacher training programs understand if there are changes in practice that could positively affect the retention of music teachers. Changes in practices that affect music teacher retention could be a model for other education training programs or administrators to have a positive impact on retention of teachers of other disciplines as well.

CHAPTER TWO: LITERATURE REVIEW

This quantitative study aimed to determine if there was a significant difference in leaving and moving rates between music teachers and teachers of other content areas. This literature review begins with a review of quantitative studies on teacher turnover. While this study aimed for a quantitative outcome, the theory for this study is firmly rooted in reasons that teachers leave or move schools, therefore a review of the literature regarding causes of teacher turnover was also relevant and included. Finally, the impact of teacher turnover was the primary driver of research in this area, so a review of literature regarding the impact of teacher turnover was also included.

Quantitative Studies

Sources of Data

When performing any study, the source of data is among the chief determinants of the reliability and validity of the study. There are a number of sources most quantitative researchers find their data.

Many organizations track information on teachers. Chief among these are the Human Resources departments at each school district throughout the country. While it is theoretically possible to call each HR department and collect direct information, this is a significant undertaking. With the number of teachers possibly changing with each board of education meeting, the data would fluctuate before this could be accomplished.

Many states, such as Nebraska, create a statewide education directory with lists of districts, schools, and teachers. While most states only update these lists only yearly, they offer significant data for researchers. Unfortunately, they rely on the coding of the state for things such as teacher position, full-time equivalent (FTE), and content area, which can vary from what a

district or school calls a teacher's position or content area. Due to these differences, the state databases often contain data that can have an impact on the accuracy of the research.. As these databases vary in scale and accuracy by state (if they exist at all), and each state's education system is run separately, it is often difficult to generalize results from one study to other states. The other difficulty state studies encounter is the inability to account for teachers who continue in the profession, but move out of state.

The National Center for Education Statistics (NCES) has tried to fill the gap. The Schools and Staffing Survey (SASS) has been conducted seven times since the 1987-1988 school year. This SASS evolved its sampling methods and questions throughout the administrations. Two of the major critiques of the SASS were its sampling methods and its response rate. While it is not relevant to dive deeply into the critiques of the SASS, it is relevant to say that despite its flaws, the SASS is considered a good source of national data.

In order to track teacher turnover, the NCES also administered the Teacher Follow-Up Survey (TFS) the year after completion of each SASS. This survey determined if a teacher had remained at the same school, moved schools, or left teaching. In conjunction with the SASS, the TFS has been the source of data for most national studies of teacher turnover.

State Level Studies

Education in the United States is localized, and as such, local teacher labor markets are worth studying to inform policy in a particular state. Levin, Berg-Jacobson, Atchison, Lee, and Vontolos (2015) used data from a combination of sources to project that Massachusetts would have a surplus of teachers for the 2023-2024 school year. This projection did not come to fruition, with Massachusetts reporting a teacher shortage as of the 2022-2023 school year (Hager, 2022).

Berg-Jacobsen and Levin (2015) found different results in Oklahoma. They found that the state would experience shortages in the areas of district wide staff, Language arts, arts and music, social studies, foreign language, mathematics, science, and vocational teachers. This prediction did come true (Oklahoma State Association of School Boards, 2023)

Carver-Thomas and Darling Hammond (2017) studied teacher supply and demand in California, and found that California's increasing teacher demand was not followed by an increasing supply of teachers. The primary shortage areas found in this study were math, science, special education, and dual language teachers. They also found that an increasing number of teachers were hired with substandard permits and/or credentials, and that these teachers were twice as likely to teach in schools with high populations of minority and low-income students.

According to data compiled by the Nebraska Department of Education, there were 768 teaching positions unfilled with qualified personnel in 2022-2023 versus just 482 the year before, and 238 during the 2020-2021 school year. This alarming trend shows that the teacher shortage in Nebraska was worsening. 8 Nebraska music teacher positions were unfilled in 2020-2021, compared to 20 in 2021-2022, and 32 in 2022-2023.

When accounting for geography, these positions were spread across the state, with 5 of them in the Central Region, 6.25 in the Metro, 6.25 in Northeast, 8.4 in Southeast, 6.4 in West Central, and 0.5 in the Western district.

National Level Studies

Grissmer and Kirby (1993) defined two different types of teacher attrition: Annual attrition and permanent attrition. Annual attrition refers to teachers who leave the profession and then come back. For example, a teacher who has a child and chooses to stay home, and then returns to the profession at a later time. Permanent attrition refers to teachers who leave and

never return to the profession. Grissmer and Kirby (1993) also found that teacher attrition follows a U-shaped curve, meaning that the highest rates of attrition are in the first years of teaching and in the ages eligible for retirement. Relevant to this study, they found that "dramatic differences in permanent cohort attrition exist among teaching specialties."

Ingersoll (2001) created the first organizational analysis of the teaching shortage. While many researchers before Ingersoll had predicted that the teaching profession would have a chronic shortage of teachers, Ingersoll was the first to note that retirement or the lack of new teachers moving into the profession were not the primary drivers of this chronic shortage, as others had previously posited (Darling-Hammond, 1984; Grissmer & Kirby, 1987; Murnane, Singer, & Willett, 1989; National Academy of Sciences, 1987)

Ingersoll, instead, noted that teachers leaving the profession for "personal reasons" was the primary driver of the chronic teacher shortage in the United States. Sutcher, Darling-Hammond, and Carver-Thomas (2016) have confirmed that this remains true. Ingersoll used data from the National Center for Education Statistics's School and Staffing Survey (SASS) and Teacher Followup Survey (TFS). The SASS and subsequent TFS Ingersoll used for this study were administered in 1987-1988, 1990-1991, and 1993-1994.

Ingersoll found that the average turnover rate was 13.2% each year, and that retirement was among the least prominent reasons for turnover. According to Ingersoll's data, retirement only accounted for 27% of all turnovers. Interestingly, Ingersoll found that staffing cutbacks due to lay-offs, school closings, and general reorganizations accounted for 41% of migration (moving schools) and 12% of attrition. Personal reasons accounted for 33% of migration and 45% of attrition. This finding shook much of the literature on teacher turnover, retention, and

recruitment. Following this revelation, much of the literature quickly started to focus on why so many teachers leave teaching before retirement (Borman and Dowling, 2008).

In addition, Ingersoll (2001) said this about the importance of teachers moving schools:

> "From an organizational-level perspective, employee migration[changing schools] is as relevant as employee attrition. The premise underlying this perspective is that, whether those departing are moving to a similar job in another organization or leaving the occupation altogether, their departures similarly impact and are impacted by the organization."

Because from the school-level perspective, leaving and moving act the same, I included both in this study's analysis. While attrition numbers are monitored with relative frequency, rates of moving are not. As Ingersoll points out, from the perspective of a principal (or colleague, or student), it does not matter whether a person quit teaching or went to another school. The impact on those individuals and the school community is the same.

In 2003, Ingersoll published a follow up to his 2001 study, this time with data from the 1999-2000 SASS and TFS. In a widely recognized and frequently cited statistic, both in research literature and national media, Ingersoll estimated that 40-50% of new teachers leave the profession within their first five years. In this study, Ingersoll estimates a total turnover rate of 14.3%. Within this percentage of teachers, retirement accounted for 13% of all turnover, and staffing action (firing, workforce reduction, etc.) accounted for 20% of all turnover. The other three categories, all preretirement turnover, were family/personal (40%), pursuing another job (27%), and dissatisfaction (29%). This demonstrated Ingersoll's coined phrase "the revolving door":

> …It is also important to note that teaching is a relatively large occupation—it

> represents 4% of the entire civilian workforce. There are, for example, over twice as many K-12 teachers as registered nurses and five times as many teachers as either lawyers or professors (U.S. Bureau of the Census, 2002). The sheer size of the teaching force combined with its relatively high annual turnover means that there are large flows in, through, and out of schools each year. The image that these data suggest is one of a "revolving door,"—which I have tried to capture in Figure 3. It shows that for the 1999-2000 school year, 534,861 teachers entered schools, while by the following school year, an even larger number—539,778—had moved from or left their schools. Hence, in a 12-month period over one million teachers—almost a third of this relatively large workforce—were in job transition into, between, or out of schools. This revolving door is a major factor behind school staffing problems.

While Ingersoll's finding that pre-retirement attrition was the most common reason teachers leave the profession is not in doubt, it is not without its issues. Specifically, Ingersoll and his co-authors took issue with the SASS's inability to track individual teachers over time, due to the method the SASS selects its participants. Acknowledging this shortcoming, the NCES launched the Beginning Teacher's Longitudinal Survey (BTLS) beginning in the 2007-2008 school year. This survey selected 1,990 teachers who began teaching in 2007 to do surveys each year for the first five years of their teaching career.

Gray and Taie (2015) analyzed the data from the BTLS, and their primary finding surprised many: "Among all beginning teachers in 2007–08, 10 percent did not teach in 2008–09, 12 percent did not teach in 2009–10, 15 percent did not teach in 2010–11, and 17 percent did not teach in 2011–12."

These percentages are not per year, but cumulative. This 17% finding varied greatly from Ingersoll's 40-50% attrition rate in the first five years. This led many to question early career educator turnover as a serious issue in teacher retention. However, The BTLS still only used sampled data.This led Papay et al. (2017) to offer a different analysis. They used district and state-level data from 16 different urban districts across seven states. While still limited in their ability to account for rural and suburban educators, using human resources data provided by districts and states, they were able to study the entire population of over 200,000 educators within those districts over 15 years.

Papay et al. found that across their sample, the yearly attrition rate was 13%, with 45% of teachers leaving within five years. Regarding "novice teachers" (defined in the study as teachers within their first five years) they found that 55% leave their district within 5 years and 70% leave their school within the same time frame. This was similar to Ingersoll's findings. One of the findings that Papay et al. noted is that there was a drastic difference in the success of school districts retaining teachers:

> To help interpret the magnitude of this cross-district variation in teacher retention, we note that these differences in retention rates imply that the hiring needs and financial costs associated with turnover vary substantially across school districts. Our back-of-the envelope calculations suggest that District C (with our lowest retention rate) would need to hire 2.24 teachers to fill a single teaching slot consistently over a five-year period. By contrast, in District B (with our highest retention rate), this figure was 1.61 teachers. That is, for each open teaching slot, one district's hiring needs were nearly 40% greater than the other's due to differences in retention.

This significant difference in retention led to other consequences, notably cost, as will be discussed later in this review, and general instability in the teaching force.

Redding and Henry (2019) used data from North Carolina and found that only 38% of early career educators remained in their first school after three years, which was consistent with Papay et al.'s finding. Redding and Henry took this a step further and analyzed the data month by month. They found that teacher turnover was not only an end-of-the-year phenomenon, but that teachers left throughout the school year. In a particularly striking finding, 8% of first-year teachers left their school before the end of their first year. They found that 4.8% of this turnover was moving schools, and 3.5% was leaving the teaching profession altogether.

Causes of Teacher Turnover

Much of the literature on teacher turnover has attempted to determine why teachers have a higher turnover rate than other professions (Carver-Thomas & Darling-Hammond, 2019). Borman and Dowling (2008) and Nguyen et al. (2020) provide the two largest meta-analyses of the literature relating to causes of teacher turnover. Nguyen et al. (2020) note some key differences in findings between Borman and Dowling's work in their updated meta-analysis. The researchers found that female teachers and teachers with graduate degrees were not more likely to turnover, as Borman and Dowling had previously found, and that STEM and special education teachers had significantly higher odds of turning over than teachers of other content areas.

Nguyen et al. give two hypothesized reasons for the differences in these findings:

> (1) the additional studies provide a more accurate picture of turnover than previously known; and (2) the influence of these factors may have changed over time (e.g., Barbieri, 2011).

To follow up on the second hypothesis, they offer an example of Science, Technology, Engineering, and Math (STEM) teachers. STEM expertise has become highly sought after in much more lucrative jobs than education, especially those in the tech industry, drawing many STEM teachers away from education and into other industries.

Nguyen et al. (2020) also provided a framework for further study in teacher turnover and retention. This framework was based on three broad categories of factors that can affect teacher turnover. First, personal factors that include teacher characteristics like demographic factors, marital status, children, and career satisfaction. Other personal characteristics are teacher qualifications such as advanced degrees, effectiveness, years of experience, and content area specialties. School factors make up the second broad category. These include school characteristics such as size, urbanity, public/charter/private, level (Elementary, Middle, High), administrative support, work environment, availability of professional development, school resources, student characteristics (socio-economic status, race, achievement), and relational demography. External and policy factors make up the third broad category. This includes teacher accountability policies, merit pay, employment rate, retention bonuses, salary, and union membership.

Personal Factors

Gender. Gender is often discussed in regard to teacher turnover. This issue is especially salient as teaching has historically been a female-dominated profession. The effect of gender on teacher attrition has changed in the last decade. In a notable change to Borman and Dowling's (2008) meta-analysis, Nguyen et al. (2020)'s meta-analysis concluded that gender did not play a significant role in teacher turnover. Corcoran et al. (2004) point out that employment opportunities for females outside of traditionally female-dominated professions have soared.

They found that the highest achieving female students were much less likely to join the teaching profession. This leads to a slight decline in average teacher quality, as the highest achieving students were not coming into the profession, which was one factor that could increase the risk of teacher turnover (Feng and Sass, 2017).

Hwang and Fitzpatrick (2021), discovered that in elementary schools, male students with disciplinary records, especially records of suspensions, were more likely to be assigned a male teacher. The same was not true for female students. The thinking from administrators, they found, was that male teachers are better disciplinarians, especially when disciplining male students, even with no research to back this claim. What research does tell us is that discipline issues in the classroom do contribute significantly to teacher turnover, especially with a lack of administrative support (Boyd, et al., 2011).

Husain et al. (2018) found that male teachers were more likely to leave schools when they work under female principals, while there was no such effect for female teachers. When these male teachers requested transfers, they were more likely to request transfers to schools with male principals.

Race. Race is another key avenue of research in teacher turnover. In their meta-analysis, Nyugen et al. (2020) found that non-White and Hispanic teachers were less likely to turnover than teachers who were Black or White.

Bristol (2020) found that Black male teachers who were “Loners”, or the only Black male teacher on faculty, were less likely to leave their school, even if they experienced racial microaggressions from other colleagues. While citing an overall positive culture at the schools, Bristol (2020) reported that these Black men set out to create mentoring groups for male students of color in their schools. These teachers do not stay because of their positioning as teacher, but

rather as a role model for students of color in their school. Relatedly, Brockenbrough (2012) found that Black male teachers were often put in a position that depicts them as father figures to students of color. This connection between black male teachers and their students parallels research findings regarding relational demography, discussed later in this chapter (Joshi, Doan, and Springer, 2018).

Teacher preparation and induction. Nguyen et al. (2020) found that teachers with alternative certification were more likely to turnover than teachers who completed traditional teacher preparation programs. Carver-Thomas and Darling-Hammond (2019) found that teachers who entered the profession through alternative means to certification, such as Teach for America, were more likely to leave their classroom than teachers who entered the profession through traditional certification pathways.

The type of instruction and preparation teachers receive pre-service affects the turnover rates of teachers. In an analysis of preparation pathways that may affect the turnover rates of teachers, Ingersoll et al. (2014), found that mathematics and science teachers' teacher preparation programs varied widely. Many mathematics and science teacher preparation programs had more subject matter classes, but fewer teaching methods classes. The researchers found that this lack of teaching methods classes, and the subsequent lack of pre-service teaching experience, was significantly related to the turnover rate of these teachers.

West and Frey-Clark (2019) studied the self-efficacy of alternatively certified music teachers compared to traditionally certified music teachers. They define self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3)

Through their sample of 143 teachers, West and Frey-Clark found that both groups felt similar levels of self-efficacy, especially when compared to experience level. They found that teachers who taught for less than 10 years experienced lower levels of self-efficacy than those who had been teaching for 11 or more years. Skaalvik and Skaalvik (2017) found that self-efficacy negatively correlates with teacher stress, which can also predict teacher turnover.

Teacher induction is the process that first year teachers go through at the beginning of their teaching career. Much of the literature in this area focuses on teacher mentoring and the professional development opportunities afforded to new teachers. Conway (2002) found that teacher induction and mentoring opportunities for new teachers were inconsistently offered, of inconsistent quality. As music teachers (and other 'specials' teachers) are often the only person teaching their subject matter, isolation is a frequent problem. Offering a mentor program can help ease this isolation, and help a new music teacher to be more successful in the classroom. Conway also found that music teachers need music specific professional development. Teaching techniques in the music classroom often vary from those used in other classrooms, rendering some general professional development not applicable to music teachers.

Conway (2012) followed up on these findings, and found that teacher induction and professional development for music teachers were still offered inconsistently. Many teachers reported frustration with the generalized induction programs. However, Conway did note that among teachers she interviewed as a follow-up on their induction processes, the participants were split on the need for music content in induction and professional development. Some music teachers appreciate having professional development outside of their content area. One music teacher put it this way: "I think I can sum it up by saying that I am not nearly as 'tunnel vision' on the product. There is a lot more to music than having a great performance." I think this point

is especially salient in the light of the 2014 National Music Standards taking a process-oriented approach. (National Association for Music Education, 2014)

Teacher Quality. Feng and Sass (2017) found that teachers prefer to work in schools with colleagues who were of similar effectiveness to themselves. Additionally, they discovered that the most and least effective teachers were the ones most likely to leave a particular school. Teachers who feel as if they were ineffective compared to their peers were more likely to move around to find a school with staff that have a similar level of effectiveness to themselves, and vice versa for teachers who feel as if they were more effective compared with their peers. With teacher effectiveness held constant, the rank of school quality plays a significant role in teachers decisions to move schools within a district.

Teacher attitudes and expectations. Hong (2010) studied pre-service and beginning teacher's perceptions of their professional identities. Through a mixed-methods design that employed interviews as well as a questionnaire, Hong described six measures of a teacher's professional identity: value, commitment, emotion, micropolitics, efficacy, and knowledge and beliefs. Hong defines value as "intrinsic value, which is the interest and enjoyment the individual gets from the activity, and attainment value, which refers to the importance of doing well on a given task". Hong's description of commitment revealed a difference between in-service and pre-service teacher's perceptions of commitment:

> In-service teachers thought that the commitment is to become a life-long learner who is always looking for a better way or better ideas to improve teaching, and to stay and continue teaching regardless of difficulties. This perception of commitment has also been reported in other international scholars' studies such as Hong Kong (Choi & Tang, 2009) and U.K. (Gu & Day, 2006).

> Unlike these in-service teachers, pre-service teachers perceived commitment in terms of successfully finishing the teacher education program. For them, "being committed to become a teacher" often means to follow through with the program and to complete it successfully. In addition, only the pre-service teachers described their commitment as a "calling." They expressed this idea in this way: "I feel like it's what I'm called to do" and "I feel like it's what I'm meant to do." As Serow and his colleagues pointed out, the basic idea of the "goodness of fit" between the field's work and one's own psychological aspiration seems substantially important for pre- service teachers (Serow, 1994; Serow, Eaker, & Ciechalski, 1992).

Hong defines self-efficacy as "people's judgments of their capabilities to work as successful teachers." Hong defines emotions as emotional burnout and stress. Hong defines micropolitics as such:

> As Ball (1987) and Blase (1987) claimed, school organization is not a rational, ordered, or unitary system, but a place where individual differences, goal diversity, conflict, different values, and informal power exist among teachers and administrators. Given this assumption, interview questions were asked to understand the participants' perceptions of the micropolitics, which include power relations and their connection to their teaching practice.

Through these six measures, Hong found that pre-service teachers mentioned vague concerns about the teaching profession, whereas experienced teachers had much more concrete concerns. Hong found that in the group of teachers who dropped out (left the profession) due to discipline issues (including classroom management), emotional burnout was the primary factor. These teachers perceived their teaching selves as primarily emotionally burnt out. Emotional

burnout, interestingly, was not a common worry for pre-service teachers, who largely thought that their personalities were strong enough to withstand whatever their teaching career might throw at them.

Ballantyne and Retell (2020) found the “praxis shock”, or the difference between the reality of teaching and the teacher’s perception of what teaching would be like, leads to burnout and attrition. They found that “praxis shock” happens not only to new teachers, but in a similar “U” pattern as turnover, meaning that older teachers also experience this as students, schools, communities, expectations, and teaching as a profession change around them. Recall also the differences in perceptions of commitment found in Hong (2010). While many pre-service teachers in that study saw the “end” goal of finishing their teacher education studies (and presumably getting a job), in-service teachers saw a commitment of lifelong learning as a key part of commitment to the profession.

In addition to the praxis shock of the commitment to lifelong learning as a teacher, Hong (2010) also revealed another important shock that may be experienced by early career educators: the emotional toll teaching can take. Hong found that many early career educators experienced emotional burnout, especially in terms of classroom management struggles. In contrast, many pre-service educators thought that they would not experience emotional burnout when they entered the profession. This praxis shock could be a contributing factor to many teachers who leave the profession.

Another personal factor that affects turnover is that of philosophical differences. Wronski and Urick (2019) found that many teachers leave citing a difference in their personal teaching philosophies from that of the accountability measures taken during the assessment driven reform era. This values mismatch was exacerbated by No Child Left Behind. Napoles (2022) found that

this values mismatch was one of the leading causes of burnout, and subsequently turnover. Napoles (2022) also found that teacher disengagement and a skewed work/life balance to be deciding factors for teacher burnout.

Content Area. Nguyen et al. (2020) found that special education teachers and STEM teachers were more likely to turnover than teachers of other content areas. Carver-Thomas and Darling-Hammond (2019) reported similar findings. By analyzing data from the National Center for Education Statistics' School and Staffing Survey for 2011-2012 and the follow-up survey in 2012-2013, they discovered that special education teachers had the highest turnover rate of any subject area at 14.2%. Additionally, while math and science teachers did not have a significantly higher overall turnover rate, they did leave Title 1 schools at a notably higher rate compared to non-Title 1 schools. The study also highlighted that foreign language teachers faced a higher likelihood of turnover.

In Nebraska, Roberts et al. (2018) found that Early Childhood teachers were much more likely to turnover, with nearly a third of Early Childhood teachers leaving each year. They cite that the average Early Childhood teacher salary was $19000 a year, well below the federal poverty level. They also find that 62% of childcare centers have difficulty hiring because candidates lack appropriate certification and training.

Madsen and Hancock (2002), found that music teachers leave the profession at a lower rate than teachers of other content areas. However, Madsen and Hancock did not take into account whether those teachers who had stayed in the profession had changed schools. Many of the teachers who had left in Madsen and Hancock’s study cited administrative support as one of the primary reasons for leaving. A number of quotes from this study were quite concerning:

1. “I love my students…numbers are dropping…administration is not supportive and state this is how it is going to be…considering moving to another school.” (1995-teaching, 2001-no longer teaching)
2. “Administration told me that the only reason we have a general music program is give classroom teachers a prep period.” (no longer teaching)

Carl Hancock of the University of Alabama has published a series of studies analyzing the results of the National Center for Education Statistics's Schools and Staffing Survey (SASS). Hancock (2008) examined the effects of a number of personal, school, and external/policy factors that may affect music teacher’s risk for attrition or migration (moving). Among the factors studied, Hancock found that factors that increased the risk of attrition and migration included young age (younger than 39 years), working at a private school, working at a secondary school, large numbers of extracurricular hours, concerns regarding the school (including culture), low perceived administrative support, low parent support, and low salary. Hancock notes that some of these factors differ from the literature regarding teachers of other content areas, namely the increased attrition risk in secondary schools, which was the inverse of other content areas. As the study shows that support (administrative and parental) and compensation was not the cause for the differences in turnover rates, Hancock speculates that this inversion was tied to the large number of extracurricular hours that also points to a higher rate of attrition, as secondary music teachers often have large amounts of extracurricular activities.

Hancock (2009) found that the retention, migration, and attrition rates were similar for music teachers compared to teachers of other content areas. Hancock found that the year over year retention rate of music educators was 84%, the migration rate was around 10%, and the attrition rate was 6%. This study was conducted using national data for the years 1988-1989,

1991-1992, 1994-1995, and 2000-2001. This study also included follow-up surveys through the National Center for Education Statistics about career paths post-teaching for those teachers who had left the profession. Hancock found the largest percentage (31%) were still in education, but not as a teacher. The other areas that former music teachers went were retirement (28%), homemaker (15%), out of education (11%), and attending college (3%). 34% of these teachers planned to return to teaching "eventually", and 11% stated they planned to return within the next year. The percentage of former music teachers who planned on returning (50%) was much higher than that of teachers in other content areas (34%).

Hancock (2016) found that 10.8% of music teachers moved to a different school, and 9.1% of music teachers left the profession. "Leavers" left for a variety of reasons, the top reasons changing slightly from the 2006 study. Pregnancy/parenting accounted for 23%, the highest amount, while retirement (18.8%), school staffing actions (10.8%), further education (9.3%), family/personal reasons (9%), dissatisfaction with school or assignment (7.6%), other work (5.9%), and obtaining better salary/benefits (5.3%) made up the other reasons listed for teachers leaving the profession. Hancock found that among these teachers, most who had left for family/personal reasons (including pregnancy/parenting) and continuing education showed a willingness to go back to the classroom. Unsurprisingly, those who had left due to retirement or disability were not willing to come back to the classroom. Teachers who had left for work outside of education did not show a clear intention either way.

For Movers, the reasons varied, including being laid off/involuntary transfer (21.4%), dissatisfied with administration (20.8%), general dissatisfaction (14.0%), dissatisfaction with working conditions (10.4%), better assignment opportunity (9.8%), taking a teaching job closer to home (8.7%), salary/benefits (5.9%), and changes to job responsibilities (5.5%).

Hancock (2016) also compared Movers and Leavers in their working conditions a year from their change. Movers indicated that they experienced greater improvements in their work life than Leavers, although both groups indicated that overall they experienced substantial improvements in their work life because of their change.

Itinerant Teachers. Gardner (2010) found that music teachers were more likely to hold part-time or itinerant positions. He noted that this may result from the fact that music teachers were more likely to teach in secondary schools, where music is an elective class not mandated by many states, and therefore has smaller enrollment than other content areas. Many music teachers travel from building to building within the same school day, or throughout the course of a school week, which is referred to as an "itinerant" position. Gardner notes that this type of job can create many difficulties, such as having to attend double, triple, or more the amount of staff meetings than the average teacher and report to multiple administrators. Gardner does also say that this situation can be remedied by administrators working together with the itinerant teacher to create a schedule that is equitable in comparison to an average teacher. Gardner found the level of support from administrators exhibits the strongest influence on job satisfaction (also see Nguyen et al., 2020; Simon and Johnson, 2015 for more on administrator effect on job satisfaction). Gardner (2010) also found that music teachers have comparable rates of retention, turnover, and attrition of other teachers.

Burnout. Burnout, according to Maslach et al. (2001), is "a prolonged response to chronic emotional and interpersonal stressors on the job, and is defined by the three dimensions of exhaustion, cynicism, and inefficacy." The effects that burnout can have on an individual are far-reaching. While many people who experience burnout leave their jobs, those who do stay show a

decrease in effectiveness and productivity, psychological symptoms of consistent stress, leading some to substance abuse, and even issues in a person's personal life (Maslach, et al., 2001).

Hamann et al. (1987) was one of the first studies to apply burnout to music educators specifically. They found that many music educators were indeed experiencing burnout, as shown by surveys given using the Maslach Burnout Inventory (MBI), which is the foremost tool for measuring burnout. More recently, Napoles et al. (2023) applied the MBI to Texas choral educators. They examined teachers through the lens of the three dimensions of burnout, and found that there were particular markers which can predict each. Perception of teacher agency, working at a Title 1 school, years of experience, and the amount of hours spent on school work outside of school helped predict emotional exhaustion. Three of the same helped predict depersonalization (cynicism), the one exception was the number of hours spent outside of school. Perceptions of teacher agency and years of experience helped predict the third dimension, personal accomplishment. This study also found that the role of the teacher in the program (director, assistant, only teacher) did not affect burnout. This was salient to this study as many music teachers in Nebraska fill that role of only teacher (which was hypothesized to lead to burnout). Brown (2020) noted that the stress that teaching has on vocal health, particularly for music educators, can lead to burnout.

School Factors

In their meta-analysis, Nguyen et al. (2020) found that schools of all sizes had relatively similar rates of turnover. They did find that middle school teachers were more likely to turnover than elementary teachers, and charter school teachers were more likely to leave than their public school counterparts. Borman and Dowling (2008) found that teachers at urban and suburban schools were more likely to turnover. While urban schools were more often characterized as

high-poverty, Simon and Johnson (2015) found that this was not the reason that these schools have high turnover rates, instead citing working conditions, including administrative support, poor relationships, and elements of school culture. However, Nguyen et al. (2020), found that there was not a significant difference in turnover rates of urban, suburban, and rural areas.

Working conditions were also pointed to as important in teacher retention. Nguyen et al. (2020) noted that schools with fewer disciplinary problems were less likely to experience turnover. Kukla-Acevedo (2009) found that novice teacher's decision to leave the field of teaching was larger due to the behavioral climate of a school. Feng (2010) found that younger, less experienced teachers were more often assigned to classes that have more low performing and unruly students. Both of these class attributes, Feng found, lead to teacher turnover. Feng, in the conclusion of his paper, quotes Wendy Patterson, a full-time mentor in the Peer Assistance and Review program for the Mt. Diablo Unified School District:

> "Asking our beginning teachers to confront unreasonable challenges promotes an endless cycle of teachers who cannot succeed and students who cannot learn. We must collectively commit to find workable answers because the price, for all of us, is too high."

Räsänen et al. (2020) found that the working environment was a primary cause of teacher turnover. They suggested that this environment needs active monitoring and development through collaboration of teachers and administration. Nguyen et al. (2020), in contrast, found that leadership and collaboration opportunities were not an influence on teacher turnover.

Administrative support. Administrative support has been listed in a number of studies as vital to retaining teachers. Boyd et al. (2011), found that teacher perception of administrative support had a significant impact on teacher turnover decisions. However, their study does not provide enough background information as to how the administration was being supportive: for

example, whether the administration was supportive financially, responded promptly to questions, or supportive with student behavior.

Grissom and Bartanen (2019) took administrative support a step further. They found that highly effective teachers were less likely to leave a school with highly effective administration, while less effective teachers were more likely to leave a school with highly effective administration. This changes the composition of the workforce at a school over the course of time, creating an environment that fosters collective teacher efficacy.

Teacher efficacy is the extent to which a teacher believes they make an impact on student learning (Ware and Kitsantis, 2007). Collective teacher efficacy describes the extent to which a teaching force (mostly thought of at the school level) believes they impact student learning. High levels of collective teacher efficacy have been shown to have a significant impact on student learning, as well as stymieing teacher turnover (Goddard, 2001). Relatedly, teacher voice is the level of perceived influence a teacher has on the school and classroom environments. In a recent study, Garcia et. al(2022) found that teacher voice plays an important role in teacher retention.

Kukla-Acevedo (2009) found that administrative support was a factor in early career educator's turnover decisions. Effective principal leadership in terms of communication and maintaining expectations within the school was found to be a deterrent to turnover, however, it was also found that increased principal support increased the likelihood of a teacher to turnover. Kukla-Acevedo hypothesizes that this effect was due to a supportive principal perhaps not giving adequate classroom autonomy to younger teachers. She gives an example of a principal contradicting a first year teacher in order to retain order at the school. Interestingly and relatedly, Kim (2019) found that while low administrative support, especially in student behavior management, caused turnover in older teachers, it did not have a significant effect on the

turnover of early career educators. This backs up Kukla-Acevedo's finding, and begs further questions as to what types of support administrators should be giving early career educators, and how they should deliver those supports.

In terms of music education, Shaw and Mayo (2022), found that administrative policies and the perceived relatively low priority of music during the COVID-19 pandemic led to many music teacher turnovers. Across their participants, Shaw and Mayo found that there were a wide variety of policies implemented and confusing guidance given to music teachers. In terms of modalities of learning, around half indicated online asynchronous, and most participants indicated that music lessons were infrequent, with over half indicating lessons were only once a week. Many, including 15.2% of elementary music teachers, indicated that they were not required to provide any lessons. Nearly two-thirds of respondents indicated that music lessons were not required to be finished by students. While teachers were asked to use online tools, only 53.4% of respondents indicated they were trained on the technology. Only a third of respondents indicated that district instruments or music supplies were made available to students.

Gardner (2010), found that perceived lack of support from administrators and parents was only a significantly negative factor for male music teachers. However, their study did not indicate if male teachers that left had male or female principals, which Husain et al. (2018) found could be a cause of teacher turnover.

Teacher cohesion. Fuller et al. (2016) found that views of organizational leadership, trust among colleagues, and a shared commitment to raising achievement were better predictors of the willingness of teachers to stay than intrinsic motivators. Nguyen (2021) found that teacher cooperation was a significant factor in predicting teacher turnover. This term generally refers to

positive relationships between colleagues. This includes shared values, teamwork, and other factors that make for building a positive culture in a school.

Nguyen et al. (2020) found that reducing class sizes and availability of classroom assistants seemed to have little effect on turnover, but availability of teaching resources slightly decreased the odds of turnover. Student body characteristics, including race, free and reduced lunch status, and the ratio of students with enhanced support had little effect on turnover.

Relational Demography. Joshi, Doan, and Springer (2018) found a positive correlation between students being placed with a mid-performing teacher of their same race. They posit that this effect was not prevalent in higher-performing teachers, as higher-performing teachers may be better equipped to work with students of all races. This effect was especially prevalent in elementary schools.

Redding (2019) found that Black and Latino/a students assigned to teachers of their same race reduced incidents of student fighting, arguing, and disruptiveness by up to 20%. While Redding (2019)'s review of the literature on this found that there was not a consistent effect on student achievement, he did note that in certain contexts, there does seem to be a significant effect, especially noting Black students in the Southern United States.

In contrast, Nguyen (2021), found that racial congruence between teachers and principals was weakly and inconsistently related to teacher turnover. Overall, the research was still vague on the relationship between racial congruence and teacher turnover.

External/Policy Factors

Beyond the teacher and school, external and policy factors affect teacher turnover. Nyugen et al. (2020) found that the odds of teachers turnover were less in schools with a teacher evaluation system, and note Feng (2010)'s finding that teachers who receive a "positive shock"

accountability score were less likely to turnover than those who receive a “negative shock” accountability score. In other words, districts and school systems that have a positive accountability system for teacher performance find more success in retaining teachers than those that have a negative accountability systems. Merit pay is perhaps one of the most popular forms of positive performance accountability systems.

To this end, Pham et al. (2021) found that merit pay has a significant and positive effect on teacher turnover. Merit pay systems base teacher’s pay (or often bonuses) on some sort of teacher accountability measure. One of the difficulties that have plagued merit pay systems is the mistrust of many teacher accountability metrics. Often, student standardized test scores are used as at least part of the accountability score, especially when these scores do not directly relate to the subject a teacher teaches, such as an English-Language Arts test being used as a metric to evaluate music teachers. Teachers also mistrust value-added metrics. Pham et al. found that merit pay systems based on more sophisticated teacher accountability and effectiveness metrics were more trusted by teachers, and therefore had more of an effect on teacher turnover and retention. The question of how accurate even these more sophisticated teacher effectiveness measures is still up for debate, and Pham et al. noted that more research should be done in this area in order to make a sound judgment as to whether merit pay systems are a long term solution to teacher turnover.

Fulbeck (2014) studied the Professional Compensation (ProComp) system used in the Denver Public Schools (DPS) as a predictor of turnover. The ProComp system in DPS allows for financial incentives to be earned based on student improvement on standardized tests, working in high-poverty schools, and earning higher education degrees, among other incentives. Fulbeck

found that receiving incentives through the ProComp system decreased the odds of turnover by 30%.

One of the most commonly studied factors in teacher turnover was salary. Most of the literature measures salary in two different ways: in one, salary was reported in $1000 increments, in the other, teachers salaries were compared as high/low. Feng (2010), used the former method when studying teacher salary based on the 1999-2000 National Center for Education Statistics's School and Staffing Survey. Feng found that there was a relative tradeoff between working conditions and salary, namely that of working in schools with high poverty levels:

> "The predicted probability of retaining teachers decreased by approximately 2 percentage points when a school's poverty rate increased from the average poverty level to one standard deviation above average. A rough calculation will provide an idea about the salary premium needed to neutralize the impact of teaching in a poor school. To ensure that the school level teacher retention rate is the same across a school with an average poverty level versus a school with one standard deviation above the average poverty level (from 46% to 70%, or 24% increase), salaries for teachers in those schools need to improve by $2,521 (20% of $10,085). Similarly, a one-standard deviation increase or a 21% increase in the black student population commands a 1/8 standard deviation or $1,356 increase in salary to maintain the same teacher retention rate."

This observation was in line with Feng (2010)'s finding that the ProComp system used in CPS described above helps retain teachers in high-poverty schools by providing specific financial incentives to those teachers working in high-poverty schools.

Nyugen et al. (2020) found that while an increase in salary was a statistically significant way to lower turnover, the effect was close to being insignificant, so focus on other possible teacher retention techniques may be warranted.

Union Membership. A relatively small number of studies have studied the impact of union membership on teacher retention. The National Education Association is the largest labor union in the United States by membership. Kelly and Northop (2015), found that union membership does decrease the likelihood of turnover in early career educators (in the first five years of teaching).

Nyugen et al. (2020) find that the results of their meta-analysis stay true when only accounting for teachers who left the profession. They note that there were a few exceptions when only examining teachers who turnover, but not leave the profession ("switchers"). They found older teachers and married teachers were less likely to switch, as were White teachers. Teachers with advanced degrees were more likely to switch, as were those who were National Board certified. Teachers in urban schools were more likely to switch, and teachers seeking more autonomy were more likely to switch.

Impact of Teacher Attrition and Turnover

One of the reasons Ingersoll (2001) indicated that turnover is just as disruptive as attrition at an organizational (or school-based) level, is explained by himself:

> "Schools have traditionally been identified as a key example of organizations characterized by an uncertain and nonroutine technology and by dependence on commitment and cohesion among members (Bidwell, 1965; Ingersoll, 1993; Lortie, 1975). Indeed, the presence of a positive sense of community among families, teachers, and students has long been held by education researchers to be one of the most important

indicators and aspects of successful schools (e.g., Dorkheim, 1961; Waller, 1932; Parsons, 1959; Grant, 1988; Coleman and Hoffer, 1987; Kirst, 1989; Rosenholtz, 1989).

Ingersoll's "uncertain and nonroutine technology" refers to teaching as a different challenge each day. Unlike many jobs, education relies on teachers' ability to adapt to changing needs of students, colleagues, administrators, parents, and the community. This manifests itself in experienced teachers as the ability to foresee and plan for these needs, and the ability to be flexible throughout the day in order to achieve the end goal, learning, through not ideal means and situations. When experienced teachers leave, this takes away this valuable institutional knowledge from schools.

Guin (2004) expanded on this, writing of a teacher who works in a high turnover school:

> "She went on to say that the constant stream of new teachers impaired her ability to do her job effectively. Time normally spent with her students was spent helping new colleagues acclimate to their new school environment. Such help included aiding in the organization of classrooms and the control of disruptive students. One teacher recalled taking a particularly difficult student from a lower grade into her class for the first half of the school year, in order to allow the new teacher to gain control of his classroom."
>
> While she was unable to quantify the impact on that student's learning, she acknowledged that spending half a year in a classroom two grade levels above was not an ideal learning situation for that student, nor for the regular students in her class."

More recent research quantified these anecdotal findings. Ronfeldt, Loeb, and Wycoff (2013) found that student math scores were six to seven percent of a standard deviation lower in a situation with 100% turnover versus no turnover. They also found that ELA scores were three to six percent of a standard deviation lower in the turnover situation. These effects were

negative, but smaller, in newer and smaller schools, but much larger in older and larger schools. They also noted that the effects increased in already low-performing schools.

In relation to music programs, especially those that are elective classes, turnover can have effects on the enrollment. Robinson (2018) studied the effect of turnover on secondary band and choral classes in a large urban district over a ten year period. She found that of 124 schools, 15 had chronic turnover (8 or more turnovers in a 10 year span), 29 had high turnover (6-7 turnovers), 47 had moderate turnover (4-5), and 33 had low (2-3). She noted one school that had 100% turnover, meaning there was a different music teacher each year for ten years. Choral programs experienced more chronic and high levels of turnover, but band programs had low and moderate turnover.

These turnovers were negatively correlated with school enrollment, total number of minority students, and the total number of suspension incidents. Robinson succinctly points out that "When massive teacher turnover occurs in music programs, students must constantly adapt to less credentialed, less experienced, and less educated music teachers."

Kloss (2012) studied 96 high schools in Arizona throughout a four year period, comparing the turnover rates of teachers to the enrollment size of those high school's marching band programs. From 2004 to 2005, the turnover rate of these educators was 11.46%, from 2005 to 2006 was 14.48%, and from 2006 to 2007 19.79%. This steady rise brought the turnover rate of band teachers from below the national average to above. Schools with higher levels of turnover found that student participation level dropped, especially in the year after a band teacher left.

In addition to the impact of teacher turnover on students, districts incur monetary costs related to recruitment for each turnover. Barnes et al. (2007) found that the estimated cost of

turnover varies widely. In a small rural district, the cost was estimated at just below $5000 per turnover. However, in a larger district such as Chicago Public Schools (CPS), each turnover was estimated to cost the district nearly $18000. CPS estimated that they spent over $86 million a year in costs related to teacher turnover. Defeo et al. (2017) found that the average cost of a single turnover in Alaska was over $20000. The estimate given by Ingersoll's analysis for Haynes (2014) gave an estimated cost of teacher turnover for the state of Nebraska of $6 million to $13 million for the 2007-2008 school year.

Beyond test scores and financial impacts, there were a few studies following the impact of teacher turnover on students well-being. Some of the closest studies to modeling this impact come from the field of collegiate student-athletes. Rankin et al. (2016) analyzed data from Student-Athlete Climate Survey, a national study of collegiate student-athletes. They found that interactions with faculty members had the largest impact on student-athletes indicating a positive academic culture. While this context is quite different from K-12 schools, more research should be done on the impact of teacher turnover on school culture, especially with a lean to the impact on student well-being.

Braun et al. (2020), studied the impact of teacher well-being on student well-being. They found that teachers who scored high in well-being had "kinder, but not happier" students. While not a direct result of attrition, many of the factors discussed above impact teacher well-being, indicating that teacher attrition may have an impact on students before attrition occurs.

Summary

This review of the literature confirms that there is a possibility that music teachers both leave and move schools at different rates than other teachers. Comparing some of the most recent and complete numbers, Sutcher et al. (2019) found that the average rate of attrition over the

previous decade was around 8%. Hancock (2016) found the rate of music teacher attrition to be 10.8%, along with a rate of turnover of 9.1%.

Because education labor markets are localized, there is a precedent for state-level reports on teacher labor markets. Many of these studies find different results than that of other states, and different results than that of national-level studies, as well. With this in mind, it is important to look at state-level data in order to inform policy at the state-level, and in turn, at the local-level of districts and schools.

These reports often give a more accurate depiction of the level of effectiveness of state and local policies regarding teacher turnover. This is due to having more accurate and complete information, such as this study will access. Due to Nebraska's unique geography and population density, Nebraska's education policy must balance high numbers of rural districts with few urban and suburban school districts.

Teacher turnover affects students in many ways, from lowering test scores, to loss of teacher cohesion and school culture, and lower enrollment in music classes, as well as the monetary cost to districts, many of whom already struggle for resources. With these issues in mind, it is important for the music education profession in Nebraska to monitor not only it's attrition rate, as music is listed as a shortage area (Nebraska Department of Education, 2023), but also to monitor the moving rate of its teachers, to ensure that particular schools are not impacted strongly by a "revolving door" of music teachers.

CHAPTER THREE: METHODOLOGY

Data Gathering

I obtained data from the Nebraska Department of Education Teacher Directory. For each data year, I customized a search using the Department's website. This dataset is publicly available, so did not require IRB approval to use. All districts, systems, schools, and educational service units in the state of Nebraska were included. All positions categorized as "Teacher Positions" were included. These job titles included head teacher, special education (SPED) teacher collaborating/co-teaching, SPED teacher teaching core subjects/alternate standards, SPED teacher teaching core subjects/grading, SPED teacher-facilitator, teacher, teacher-collaborator, and teacher-facilitator. For each teacher, I collected the name, position and subject area. Each record also included a directory ID unique to each teacher. For teachers at multiple buildings, this directory ID matches for each school, however their name is listed multiple times in the directory, once for each school. The data was downloaded as .txt files. I repeated this process for each school year starting in the 2014-2015 school year, and ending with the 2022-2023 school year.

Data Handling

I processed the data using R, with RStudio with tidyverse plugins. The data was imported from the .txt files. Once the data was imported, I created lists with a vector for years added. For ease of use, I assigned each year a 'year' variable, listed as y1-y9. Year 5 (2018-2019) saw a change in teacher ID numbers from the Nebraska Department of Education. The NDE did not provide any means to accurately transform this data, so data from y5 to y6 is not included.

I created a variable for 'position' by combining teacher ID and school variable. This was added to each dataset. I then combined the datasets to form one dataset for all nine years.

I created lists for music teacher IDs and multiple subject IDs. This included creating lists for teacher IDs for all teachers who had taught music across all years, a list of teacher positions (ID/School combos), a list of teacher IDs who had taught multiple subjects, and a list of music teachers who had taught other subjects. For the purposes of this study, music teachers who had taught other subjects were counted as music teachers. Using these lists, a 'music' variable was created and bound to the full dataset.

Data Analysis

With music teacher IDs identified, I compared IDs across years. In order to do this, I created lists for teacher IDs in y1 and teacher IDs in y2. I combined these to create a list of all teachers across y1 and y2. This allowed for finding the teacher IDs which disappeared from y1 to y2, or the teachers who left the profession between y1 and y2. This also revealed the IDs of new teachers in y2, and the teacher IDs in common from y1 to y2, or those teachers who were retained between the two years.

While I found attrition directly from the list of teacher IDs which disappeared from y1 to y2, movers were found using the teacher/school combo variable. I created a list of teacher IDs in common between y1 and y2, but whose teacher/school combo disappeared between y1 and y2. This list was then split based on the music variable. This entire process was then looped for each year.

After creating these lists for each year, I ran Pearson's chi-square tests for each year to determine if there was a significant difference between the moving and leaving rates of music teachers compared to teachers of other content areas for each year. Yate's correction for continuity was used to lower the possibility of type II errors.

CHAPTER FOUR: RESULTS

Leavers

Research Question #1: Is there a significant difference between the attrition rates of music teachers in Nebraska compared to that of teachers of other content areas?

As indicated in Table 1, less than 8% of teachers left teaching in Nebraska for each year with three exceptions: 2014-2015, at 8.09%, 2020-2021 to 2021-2022, at 8.58%, and 2021-2022 to 2022-2023 at 9.75%. The last two years studied had the highest overall rates of attrition among teachers in Nebraska. In raw numbers, the number of music leavers spiked in the last year studied, with 139 leaving. This corresponded to a sharp rise in the overall number of leavers, with 2652 teachers leaving teaching in Nebraska between the 2021-2022 and 2022-2023 school years.

Table 1

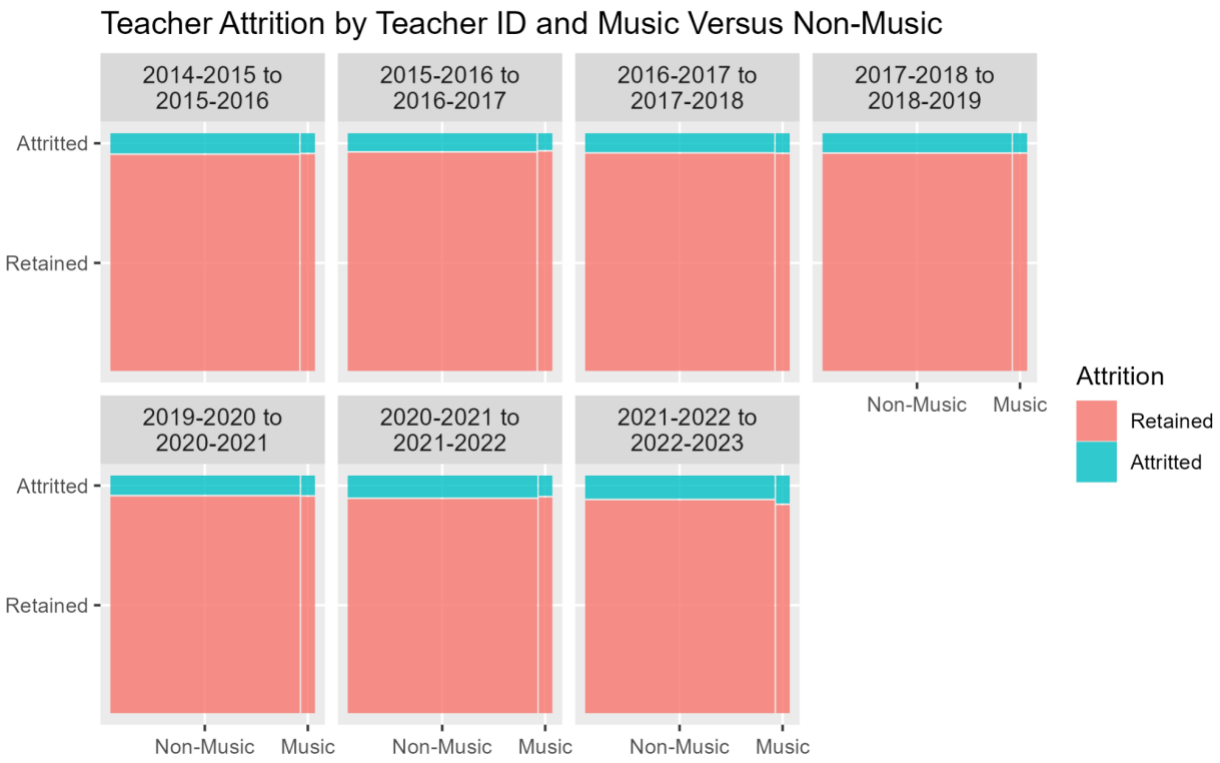
Number and Rates of Leavers

Year	Total Teachers	Number of Leavers	Music Leavers	Overall Rate
2014-2015 to 2015-2016	26185	2119	94	8.09%
2015-2016 to 2016-2017	26438	1959	91	7.41%
2016-2017 to 2017-2018	26790	2065	92	7.71%
2017-2018 to 2018-2019	26888	2069	89	7.69%
2019-2020 to 2020-2021	27222	2096	106	7.70%
2020-2021 to 2021-2022	27284	2340	92	8.58%
2021-2022 to 2022-2023	27207	2652	139	9.75%

Note: 2018-2019 to 2019-2020 is not included, as NDE changed teacher IDs for all teachers between those years.

Figure 1

Leavers by Content Area



As seen in Table 2, from the 2014-2015 school year to the 2018-2019 school year, music and non-music teachers left the profession at similar rates. Notably, between 2017-2018 and 2018-2019, the rates were so similar as to achieve a p-value of 1 ($df = 1$, $N = 26888$), a result not often seen in real-world scenarios, and therefore a slightly unexpected finding. There are two exceptions to these similar rates; 2019-2020 to 2020-2021 saw a notable shift, with music teachers leaving at a higher rate than teachers of other content areas, although significant only at the $p < 0.1$ level. While this may not be significant at this time, it suggests a trend towards statistical significance. That trend is confirmed in the 2021-2022 to 2022-2023 school years,

when music teachers left at a significantly higher rate than teachers of other content areas ($df = 1$, $N = 27207$, $p < .05$). Figure 1 provides a visual representation of the proportion of music to non-music teacher attritions. Each panel represents a specific academic year transition, with the proportion of teachers retained (in red) and attrited (in teal) displayed for both music and non-music teachers.

Table 2

Chi-Square Test for Leavers

Year	*df*	*N*	X^2	*p-value*
2014-2015 to 2015-2016	1	26185	0.0329	0.856
2015-2016 to 2016-2017	1	26438	0.411	0.521
2016-2017 to 2017-2018	1	26790	0.118	0.731
2017-2018 to 2018-2019	1	26888	1.78e-26	1
2019-2020 to 2020-2021	1	27222	3.03	0.0817*
2020-2021 to 2021-2022	1	27284	0.324	0.569
2021-2022 to 2022 to 2023	1	27207	5.78	0.0162**

Note: 2018-2019 to 2019-2020 is not included, as NDE changed teacher IDs for all teachers between those years.

*Significant at $p < 0.1$

**Significant at $p < 0.05$

Movers

Research Question #2: Is there a significant difference between the migration rate of music teachers in Nebraska compared to that of teachers of other content areas?

The results, indicated in Table 3, show that the rate of teachers moving between schools in Nebraska was relatively stable during the years included in this study, remaining between 7% and 9%, with the exception of the final year studied. Between the 2021-2022 and 2022-2023 school years, 14.88% of Nebraska's teachers changed schools. This result was surprising, especially considering the relative stability of the previous years.

Table 3

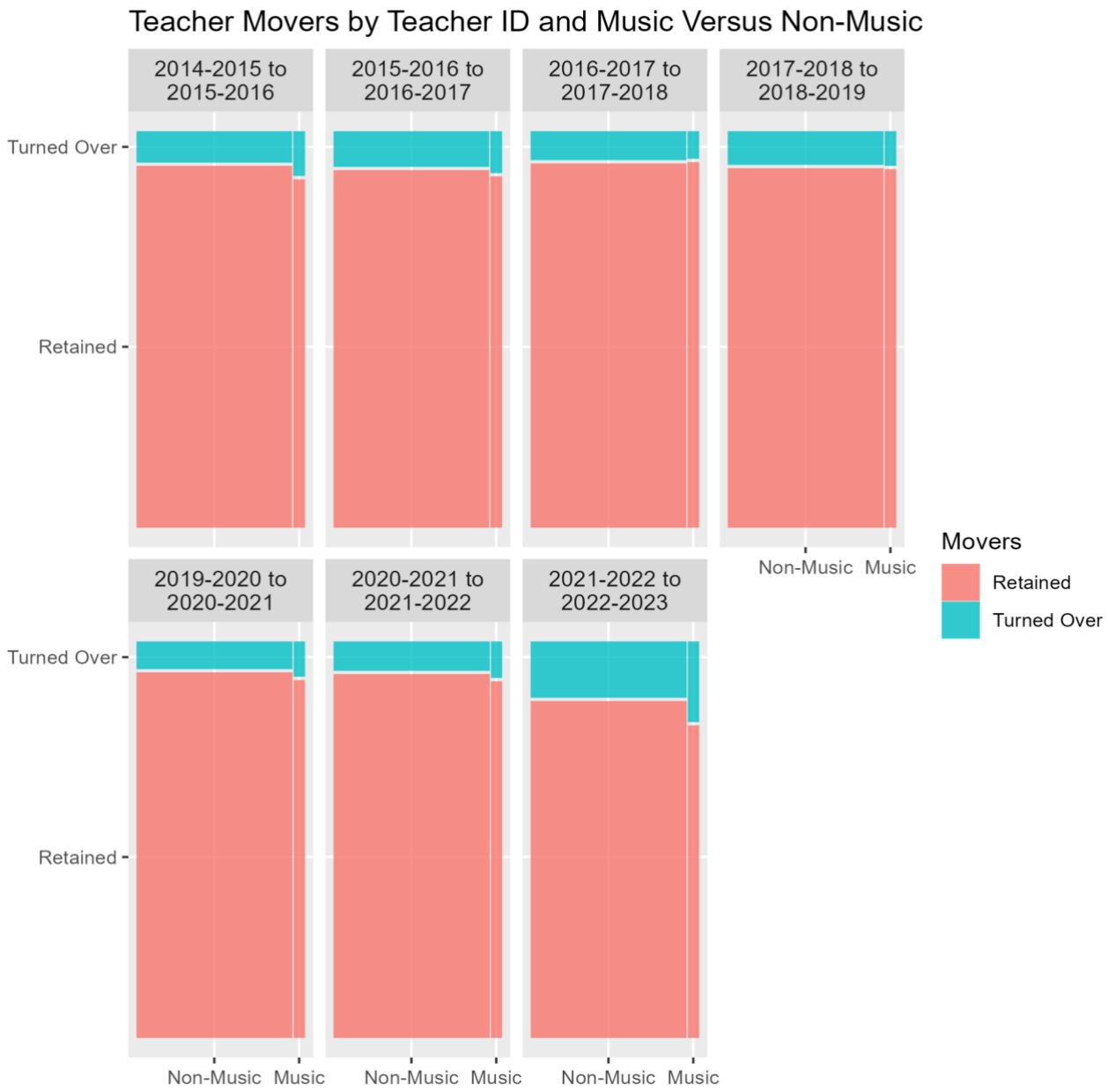
Number and Rates of Movers

Year	Total Teachers	Number of Movers	Music Movers	Overall Rate of Moving
2014-2015 to 2015-2016	29553	2402	233	8.13%
2015-2016 to 2016-2017	29664	2690	219	9.07%
2016-2017 to 2017-2018	30008	2160	142	7.20%
2017-2018 to 2018-2019	30078	2547	179	8.47%
2019-2020 to 2020-2021	30557	2158	182	7.06%
2020-2021 to 2021-2022	30815	2323	187	7.54%
2021-2022 to 2022- 2023	30394	4524	417	14.88%

Note: 2018-2019 to 2019-2020 is not included, as NDE changed teacher IDs for all teachers between those years.

Figure 2

Movers by Content Area



Results indicate that for most of the years studied, music teachers move schools at a significantly higher rate than teachers of other content areas. As shown in Table 4, this result is significant at $p < 0.01$ or lower in most years, the exceptions being 2016-2017 to 2017-2018 and 2017-2018 to 2018-2019. In these years, music teachers moved schools at a similar rate as

teachers of other content areas. Figure 2 offers a visual comparison of the rates of moving between music teachers and non-music teachers. Within each panel, the number of non-music and music teachers who were retained are displayed in red, while the number who moved schools are displayed in teal.

Table 4

Chi-Square Values for Movers

Year	*df*	*N*	X^2	*p-value*
2014-2015 to 2015-2016	1	29553	25.2	5.08e-7***
2015-2016 to 2016-2017	1	29664	5.12	0.0237**
2016-2017 to 2017-2018	1	30008	0.213	0.645
2017-2018 to 2018-2019	1	30078	0.154	0.695
2019-2020 to 2020-2021	1	30557	9.4	0.00217***
2020-2021 to 2021-2022	1	30815	7.2	0.00728***
2021-2022 to 2022-2023	1	30394	38.7	5.03e-10***

Note: 2018-2019 to 2019-2020 is not included, as NDE changed teacher IDs for all teachers between those years.

*Significant at $p < 0.1$ **Significant at $p < 0.05$ ***Significant at $p > 0.01$

CHAPTER FIVE: DISCUSSION

Research Question One

The first results of this study determined that music teachers leave the profession at a similar rate to teachers of other content areas. This result contrasts with Madsen and Hancock (2002), who found that music teachers leave at a lower rate than teachers of other content areas. However, more recently, Hancock (2016), found that music teachers leave the profession at a similar rate to teachers of other content areas, something supported by this data. It is worth noting that while those studies were based on national data, this study focused on one particular state, Nebraska. However, in the past two years of available data, and notably after the COVID-19 pandemic, music teachers have left the profession at a higher rate, with the rate being statistically significant in the final year of study data (2021-2022 to 2022-2023). This result is particularly disturbing and begs further study and monitoring in future years. COVID-19's impact on music was particularly harsh, and band and choir were specifically targets of significant media attention. As COVID-19 was an airborne virus, band and choir musicians, who breath more and push more air than the average person, and are in close proximity to each other, became quite a threat. Many schools told music teachers that students could not participate in these activities, as they were not safe. However, if music teachers leaving at a higher rate is a longer term trend, and not just a direct effect of the COVID-19 pandemic, the reasons for this could be numerous.

Administrative support (or lack thereof) is one of the primary drivers of turnover and attrition. With all education workers stretched ever thinner, it could be easy for administrators to lessen their support on less valued subjects (such as music and the arts, typically), especially in terms of impact they make on standardized test scores, time allotments for academic recovery,

and budgets. Shaw and Mayo (2022) found that music teachers perceived throughout the pandemic that music was low on administrator's priorities.

One of the difficulties of studying Nebraska in particular is the unique geography, specifically in terms of population density. Most of the state's population is in the eastern part of the state, with nearly half of the state's population concentrated in its two largest counties, each with one primary city as a driver of the population (United States Census Bureau, 2023) These two cities house the only school districts classified as "urban", with other cities around the state housing school districts classified as "suburban" or "rural" (NCES, 2023)

One of the interesting findings in the literature is that rural, suburban, and urban teachers have similar attrition rates (Nguyen et al., 2020) However, I posit that this might be different for music. Teaching music in rural areas differs significantly from teaching music in suburban or urban environments. Many music teachers in rural areas are the sole music teacher for a school or district. This means that they are itinerant teachers, which is one factor that has shown to increase the chances of attrition. Another difficulty of rural music teachers is the isolation from other teachers of their subject matter. This isolation could lead to that music teacher feeling left out in terms of teacher cohesion, induction, and professional development, all three of which have been shown to increase the chance of attrition.

Research Question Two

The second part of this study aimed to determine if Nebraska music teachers changed schools at a higher rate than teachers of other content areas. The analysis showed that music teachers change schools at a statistically significantly higher rate than teachers of other content areas. This result is important, as for many years, with an attrition rate similar to teachers of other content areas, music teachers were not suspect as causing disruptions in student learning at

any higher rate than teachers of other content areas, however, as Ingersoll (2001) pointed out, at the school level, it does not matter what a teacher does after leaving a school, it only matters that they left. While this does not cause a disruption in the total number of teachers available overall, it does have a number of ramifications for the schools involved in this high level of turnover. If we follow from Robinson (2018), music programs that experience teacher turnover will have smaller participation, something that can severely impair the number, type, and quality of music opportunities, especially in smaller schools that make up the majority of school systems in Nebraska.

The other question that this result begs is why music teachers turnover at such higher rates. Perhaps one of the most important future areas of research is if there is a certain type of school that this turnover affects more commonly than others. With the unique geography of Nebraska, it could point to an issue with the way that music has traditionally been handled in smaller schools and school districts, especially in rural schools.

Another possibility is a more prevalent desire to change school level (elementary, middle, high school) among music teachers compared to other content areas. According to Napoles et al. (2023), work hours outside of school can have a significant impact on teacher retention, and as most music teachers can attest, high school music teachers put in significantly more hours outside of teaching hours than music teachers of middle or elementary schools. On the flip side of this, many pre-service music teachers go into the profession hoping to teach high school, as those are perceived as the most “musically fulfilling” teaching positions, creating a sort of hierarchy within the profession. This is backed up by the list of teachers who have won the Nebraska Music Education Association’s Teacher of the Year award, whose past winners list heavily features high school teachers (Nebraska Music Education Association, 2023).

Further research should determine which personal, school, and policy factors increase the chances of music teachers leaving the profession, so that suggestions can be made to policy makers in order to mitigate music teacher attrition and turnover.

Limitations

This study is limited by its inability to capture teacher migration. A longstanding concern in turnover research, this issue has been addressed in some studies through collaboration with the National Center for Educational Statistics (NCES) and its School and Staffing Survey (SASS) with follow-up surveys. However, the focus here on Nebraska's teacher labor market necessitated use of state data, which suffers from coding inconsistencies in areas like position and content compared to district/school designations. These discrepancies introduce potential inaccuracies. Furthermore, the inherent variability in state databases (availability, scale, accuracy) and the decentralized nature of U.S. education systems limit the generalizability of findings to other states. Finally, the annual nature of the data precludes tracking teachers who leave the state but remain in the profession.

Recommendations for Future Research

This quantitative study determined that music teachers in Nebraska leave the profession at a similar rate as that of teachers of other content areas, and that this seems to be in flux following the COVID-19 pandemic. The first recommendation is one of follow-up quantitative studies on music teachers in Nebraska, in order to establish this as a trend, or as an artifact of the few years following the COVID-19 pandemic.

Regarding the second research question, this study determined that music teachers in Nebraska move schools at a higher rate than teachers of other content areas. As this has been a

consistent trend for a decade, this phenomenon begs a few questions that should be researched in the future:

1. Why do music teachers move schools at a higher rate than teachers of other content areas?
2. Are certain types of schools (either level or demographically) affected by this phenomenon more than others?

Conclusion

The study investigates music teacher attrition and turnover in Nebraska, revealing similar attrition rates to other teachers, aligning with Hancock (2016). Post-COVID-19 data shows a significant increase in attrition, suggesting a need for further investigation.

A key factor is administrative support, which is perceived as lacking, especially during the pandemic (Shaw & Mayo, 2022). This, along with budget constraints and a focus on subjects affecting standardized test scores, contributes to higher attrition rates.

Nebraska's unique geography, with a population concentration in two large counties and mostly rural and suburban districts, adds complexity to this particular situation. While Nguyen et al. (2020) found similar attrition rates among teachers in different settings, this might not hold for music teachers who often face isolation and lack professional support in rural areas.

The second research question shows that music teachers change schools more frequently than other teachers, disrupting music programs and reducing participation, especially in smaller schools. Contributing factors include the demanding nature of high school music teaching and a perceived professional hierarchy within music education.

With such a broad swatch of potential explanations, the phenomenon of music teachers in Nebraska changing schools at higher rates than non-music teachers must be studied in more

depth to ensure the health of the music teaching profession in Nebraska, and in turn, the highest quality music education for all Nebraska's students.

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