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Socioeconomic Status and Instrument Provision Program Effects on Engagement in Instrumental Music Programs

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Socioeconomic Status and Instrument Provision Program Effects on Engagement in Instrumental Music Programs

A Quantitative Study

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By

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Contents

Abstract

This study focuses on the correlation between Minnesota schools' average socioeconomic status through the percentage enrolled in free/reduced lunch and instrumental music enrollment percentages. Additionally, it also looks to see whether providing different instrument provision opportunities to students in these schools correlates with the percentage of students enrolled in their instrumental music programs. Instrumental music enrollment and instrument provision program data were gathered through surveys completed by the directors of their respective programs. While the results of the study did not demonstrate statistical significance due to deviation and small sample size, correlations between instrumental music enrollment and socioeconomic status were found. Schools with higher free/reduced lunch percentages correlated with slightly higher enrollment. This study also found that schools that offer many instrument provision programs such as lease-to-purchase programs through business partnership, advertisement that students can purchase their own instruments, and school rentals average higher instrumental music enrollment percentages than schools that only offer school rentals.

Introduction

As an elective subject, instrumental music programs may be run by a single teacher for the district. This can make it difficult to gather large-scale data in order to make improvements to their own program, as these teachers may feel like they are on their own island (Sindberg, 2014). In order to collaborate and drive program improvement from context, it is not uncommon for instrumental music teachers to work with other directors across a larger geographical area. This action research project will focus on gathering data from many instrumental music programs in order to analyze relationships between socioeconomic status, instrumental provision programs, and student enrollment in instrumental music.

Brief Literature Review

Previous research has found correlations between low socioeconomic status and struggles in school created by multifaceted issues due to a lack of financial resources (Berger & Archer, 2018; Blanton, 2020; Dotson & Foley, 2017; Lam, 2014; Zhang et al., 2020). These issues can become apparent in all aspects of schooling, including electives and extracurricular activities (Bailey, 2018; Moyer, 2010; Stern, 2021). Students who live in low socioeconomic families tend to not be able to afford functional instruments, and may struggle to stay engaged with instrumental music (Albert, 2006; Albert, 2007; Kinney, 2019; Moyer 2010).

Statement of the Problem

Students who live in lower socioeconomic status situations have barriers to their education (Berger & Archer, 2018; Lam, 2014; Zhang et al., 2020). The lack of financial resources can create issues with attendance, engagement in the classroom, grades, and the ability to participate in curricular and extracurricular activities (Albert, 2007; Blanton, 2020; Dotson & Foley, 2017; Kinney, 2019). For potential students of instrumental music, a socioeconomic

barrier may stop them from participating in programs all together due to the inability to afford an instrument.

Purpose of the Study

The goal of this study is to determine the correlation between the average socioeconomic status of a school community and the percentage of students enrolled in instrumental music programs. Although correlations between lower socioeconomic status and a lesser chance of participation in instrumental music are apparent, there may be other factors that counteract this relationship when looking at school communities as a whole. For example, directors in low-income communities may be more likely to offer resources to families that results in higher percentage participation than a high-income school. Additionally, correlations between the type of instrumental provision programs offered by a school and the percentage of students enrolled in instrumental music will also be studied. This data will give feedback about what combination of instrumental provision programs should be offered in order to provide the most equitable access to instrumental music education.

Research Questions

The following questions have been developed in response to the problem with consideration of the purpose of this study:

1. How does the socioeconomic status of a community affect the enrollment in instrumental music programs in local schools?
2. What instrument provision program designs are the most effective in engaging students in instrumental music programs?

Definition of Variables

The following are the variables of study:

Independent Variable A: School average socioeconomic status

Independent Variable B: Type of instrument provision program

Dependent Variable: Percentage of students enrolled in instrumental music classes

Significance of the Study

This study provides a more detailed understanding of the relationship between the average socioeconomic status of the schools they teach in and student enrollment in instrumental music. Additionally, the data and results collected in this study give information that instrumental music teachers can take to their administration and school boards in order to fund and/or incorporate the most effective instrumental provision programs for their schools and districts.

Research Ethics

Permission and IRB Approval

In order to conduct this study, the researcher saught Minnesota State University Moorhead's Institutional Review Board (IRB) approval to ensure the ethical conduct of research involving human subjects.

Implied Consent

Protection of human subjects participating in research was assured. Participants were aware that this study is conducted as part of the researcher's Master Degree Program and that it could benefit their teaching practice. Implied consent means that participants have been fully informed of the purpose and procedures of the study for which consent is sought and that they understand and agree, in writing, to participate in the study (see Appendix A). Confidentiality was protected through the use of pseudonyms (e.g., School 1) without the utilization of any

identifying information. The choice to participate or withdraw at any time was outlined in writing.

Limitations

While the reasons that individual students may or may not participate in instrumental music programs may vary, this study will focus on patterns in larger school communities rather than individuals. Additionally, socioeconomic status and instrument provision program offerings will be the main variables studied, although the author recognizes that many factors may influence percentage enrollment in instrumental music programs. The goal of this study is to identify large-scale correlations, without necessarily identifying every factor behind them. Data collection was limited to instrumental music teachers who responded to the survey.

Conclusions

This study focuses on the correlations between a school's average socioeconomic status, instrument provision programs, and enrollment in instrumental music programs. While an individual's socioeconomic situation may affect their likelihood of starting to learn an instrument and continue with it throughout their secondary education, other factors may be in play that cause different effects on a larger level. The next chapter will review the research currently available on the topics of socioeconomic status and schools, as well as socioeconomic status and music education.

Literature Review

One common goal of any curricular organization should be to reduce and remove barriers to education (Oakes et al., 2021). By making education accessible, educators work to ensure that our students have the opportunity to participate in a variety of educational and enriching experiences. While some of these items may be more impactful for music teachers specifically, many of these are already factors that core and other elective teachers consider when working with students. For instrumental music teachers, the primary barrier that often exists for students is access to functional instruments.

While many instrumental music programs offer instrument provision programs through yearly rental, long-term loan, business partnerships offering lease-to-own programs, and donation-based models, the factors contributing to the effectiveness of these programs may be multifaceted. Socioeconomic factors, community norms, recruiting activities, proximity to music and instrument repair shops, and family expectations are just a few examples of factors that band directors experience in their jobs and student populations that can affect how a program works in their district. For the purposes of this study, the factors considered will be limited to the scope of socioeconomic status and instrument provision models to students' participation in instrumental music.

Body of the Review

Context

It would be ineffective to argue the importance of access to music education, without first understanding the importance of music education itself. Music education, and specifically instrumental music education has a strong correlation with academic success as well as positive social and mental health (Didin & Koksal Akyol, 2017; Fitzpatrick, 2006; Gouzouasis et al.,

2007; Guhn et al., 2020; Muthivhi & Kriger, 2019; Rickard et al., 2010; Varner, 2017). This is generally understood to be due to students developing transferable skills such as learning to care for and play an instrument (Gouzouasis et al., 2007), taking time to learn to read a new written language in the form of sheet music (Muthivhi & Kriger, 2019), dealing with failure and improvement, collaborating with other students in rehearsal (Didin & Koksal Akyol, 2017) and developing presentation skills.

Due to the push of the core curriculum and standardized testing in public schools, the importance of music is often measured by academic achievement and students' grades. This is no mystery to band and choir teachers, who are familiar with the concept of justifying their expenses to school boards and administrators in the form of correlations with academic success. Fitzpatrick (2006) found in a study of instrumental music students and Ohio state tests that "students who would eventually become high school instrumental music students outperformed noninstrumental students of like socioeconomic status in every subject and at every grade level" (p. 77). Additional studies found similar results, along with the differentiation that students taking an instrumental music course scored significantly higher on core subject exams than students solely taking vocal music courses (Guhn et al., 2020).

Of course, students also receive a variety of other benefits from participating in instrumental music. Due to the work students do collaboratively in an instrumental music setting, they also have the opportunity to improve their social and interpersonal skills. Didin and Koksal Akyol (2017) found that students who participate in music classes tend to have a higher level of self-confidence, interpersonal problem solving skills, and healthy humor styles. Qualitative studies also found that students participating in instrumental music felt that they were

part of a community, and received stress management and mental health benefits from their ensembles (Varner, 2017).

Socioeconomic Status and Education

Many teachers are already familiar with the effect that socioeconomic status of communities can have on schools and students. Teachers often work with students who may not have their basic needs met at home, resulting in other consequences that affect the students' education. If the students' family struggles to budget for food, the student may go through the school day hungry and have difficulty focusing or have troubles regulating their emotions. If the family doesn't have reliable transportation or medical care, the students may often miss school entirely as they have additional responsibilities at home to take care of their older relatives or siblings. A family's socioeconomic status is not an issue that stays isolated to their home life. As stated by Lam (2014), "it is no doubt that the diminution of family resources carries a heavy bearing toward the academic performance" (p. 328).

Due to these accumulating consequences associated with low socioeconomic status and poverty, students living in these households often struggle to be successful in school and correlate with lower academic achievement, particularly among the adolescent age in secondary school (Zhang et al., 2020). However, the physical and financial barriers created by low socioeconomic status are not the only considerations when considering student achievement and outcomes. The adolescent age is also a time where students begin to view themselves from others perspectives, and this can also have a mental and psychological effect. Social expectations and norms created in low socioeconomic environments can dramatically change how students view school in the first place, often creating additional barriers or poor study skills that can feedback into academic performance (Berger & Archer, 2018).

This academic performance is often measured by grades. Although there is a discussion of how effective the grade scale currently is at measuring academic achievement and population averages, students with low socioeconomic status correlate with lower grades (Blanton, 2020). Standardized testing is also used to measure academic achievement. Similar to grades, these tests of core subjects measures' of lower scores tend to be correlated with students and schools in low socioeconomic situations, with discussions already being made over the tests' reliability in terms of potential bias (Dotson & Foley, 2017).

Socioeconomic Status and Instrumental Music

While it is clear that socioeconomic status can have strong effects on students' academic success in required core classes and standardized tests, it can show differently in elective and extracurricular subjects and activities. Often, the same socioeconomic barriers that hinder students' academic success in core schooling can often block them completely from participating successfully or at all in subjects that may require expensive materials and equipment. In instrumental music, this may be due to the instruments themselves.

Beginning band instruments can be an investment for families, with new beginner instruments generally ranging from $500-$3000. Fortunately, many schools offer school-owned rental instruments to help students join who can't afford the instruments on their own. Some schools charge a fee for this service, while others offer school-owned instruments to students for free. Music businesses also offer lease-to-own plans where families can pay for the instruments in smaller increments over a period of time to reduce the financial burden.

However, not all schools can supply instruments for their students, and not all families can afford instruments even if they are used or through a payment plan. Correlations exist between low socioeconomic status and low home musical environments. Additionally, schools

in low socioeconomic communities tend to have equipment and instruments in poor condition (Albert, 2006). This lack of ability to purchase and maintain equipment likely feeds back into the lower music offerings. This barrier to working equipment also likely explains why students in low socioeconomic situations tend to drop out of music at a higher rate than their high socioeconomic peers (Albert, 2007).

However, there are situations in which students of different ages enrolled in band are affected differently by socioeconomic states than other ages. Possibly due to the initial investment of the instrument, Kinney (2019) found that in contrast to other studies, socioeconomic status is a better predictor of who participates and continues in band at younger ages than it does at the senior high level (p. 37). This may indicate that different schools' and communities' instrumental music programs are affected differently by socioeconomic status than others. Additionally, the way students receive instruments and enrollment numbers may play an important factor. Students who own their own instruments are more likely to continue with band throughout their secondary career than students who rent instruments from schools (Moyer, 2010). Especially when considering the parental musical involvement in securing an instrument for their student, family support with the instrument is also an important factor that impacts how long the student persists in music education (Holster, 2022). Finally, students attending schools in low socioeconomic communities may have a disadvantage even if they are able to perform with an instrumental ensemble, with studies showing that bands from high socioeconomic communities have a significantly better chance of both going to competitions and receiving higher scores (Bailey, 2018; Stern, 2021).

Theoretical Framework

From the current research available, it would appear that despite the benefits of instrumental music education, barriers still exist for students in low socioeconomic situations (Albert, 2006; Albert, 2007; Bailey, 2018; Stern, 2021; Kinney, 2019). However, socioeconomic status on its own may not be the only factor in securing an instrument and continuing band from younger ages into high school, and community values and different instrument provision models are also factors in determining recruitment and retention in instrumental music programs. This study focuses on the correlation between the socioeconomic status of school communities at large and overall enrollment in instrumental music programs, as well as how schools get instruments into students' hands through instrumental provision programs.

This study will base its framework in a similar fashion to Holster's (2022) study on motivators for middle school student ensemble participation. Holster focused on influences that kept middle school students participating in band, such as parent influence, peer influence, socioeconomic status, and adult support (p. 4). The study found that socioeconomic along with other variables such as value and experience played a significant role in music enrollment and therefore should be addressed by music educators (p. 11). In the lens of this framework, it would be reasonable to hypothesize that schools with lower socioeconomic populations will have a smaller percentage of students enrolled in instrumental music.

For data collection purposes, the percentage of the school population on free and reduced lunch reported to the state was the measure of the school's general socioeconomic status. For the measure of instrumental music enrollment, data was collected based on the percentage of students at the school who are enrolled in instrumental music in comparison to all students who have an instrumental music class available for their grade. Information on schools' available

instrumental provision programs were also collected. This study focuses on whether students have access to instrument lease-to-own programs, school-owned instrument rentals, and/or school-owned instrument loans.

Conclusions

In focusing on the recognition of and removal of barriers to students' educations, instrumental music education programs may be hindered by low socioeconomic status. Due to socioeconomic influences on education and academic achievement in general, this barrier is often visible through enrollment data. Finding solutions to this issue is commonly a focus of instrumental music teachers, who know that instruments are expensive and that barriers can stop students from receiving the multitude of benefits offered through participation in an ensemble. This study focuses on how the overall socioeconomic status of a community and how students' get their hands on an instrument affects enrollment in instrumental music programs. The next chapter will cover the methodology of this study and data collection focusing on enrollment percentages.

Methods

Research Design

The design of this study is quantitative and correlational. Instrumental enrollment data was collected and processed as a percentage of students enrolled at each individual school or district, in the case that one instrumental music teacher leads a program spanning multiple schools. Additionally, three options were available for participants to select regarding instrument provision programs offered by their school. One was the rental of a school-owned instrument, in which case they were able to identify how much they charge per rental, one was a business-run lease-to-purchase program, and one was the advertisement that students may purchase their own instruments. The average socioeconomic status of the enrolled students was determined by the amount of students enrolled in free/reduced lunch programs. These data were collected along with the total enrollment of each school from the Minnesota Department of Education via the Minnesota Report Card system.

Setting

The goal of this study was to collect as much data as possible from schools around the state of Minnesota. Surveys were sent to instrumental music teachers throughout the state, including rural, urban, and suburban areas in order to ensure responses from schools of differing average socioeconomic statuses.

Participants

Potential participants in this study were professional instrumental music teachers employed by a public school in Minnesota. This ensures access to school enrollment data through the Minnesota Report Card system.

Sampling

Potential participants were instrumental music teachers belonging to a cohort of school districts in Minnesota, as well as selected individuals from the music instructor list available from the Minnesota State High School League (MSHSL) website and district staff directories. This list is actively updated by each school's activities director or website manager, and provided contacts to a large variety of schools in different settings and socioeconomic situations around the state of Minnesota. Emails were sent to these teachers with a link to the survey as well as a copy of the informed consent letter (see appendix A).

Instrumentation

Data Collection

Individual school instrument enrollment and instrument provision data for this study were collected through digital surveys. The survey design had two pages, with the first displaying a copy of the informed consent information, and the second containing the response questions (see appendix B). The name of the school in the survey was used to pull two types of data from the Minnesota Department of Education through the Minnesota Report Card website. One was the total enrollment in the school, and the other was the percentage of students enrolled in the free/reduced lunch program.

Data Analysis

The total school enrollment data from the Minnesota Department of Education was used along with the instrumental music enrollment data reported on the survey to calculate the percentage of students at the school enrolled in instrumental music. This percentage was a measure of the dependent variable, instrumental music enrollment. The free/reduced lunch

percentage data from the Minnesota Department of Education was used as independent variable A, average socioeconomic status of the student population. Data for independent variable B, instrument provision programs, was pulled from the survey. These data allowed for the correlational analysis between the type(s) of program offered and enrollment in instrumental music.

Procedures

Researchers received Minnesota State University Moorhead's IRB approval on January 17th, 2023. The research timeline spanned approximately one month for a data collection period. Invitations for participants through email with the informed consent letter and survey link were sent out as soon as the researchers received IRB approval. As surveys were completed, their data was entered into a spreadsheet. Immediately before entry, school names were used to locate enrollment and free/reduced lunch data so the schools' names can be separated from the spreadsheet entirely and replaced by a pseudonym in the order of entry (School 1, School 2, etc.). Near the end of the data collection period, a second and final email will be sent out to potential participants who did not complete the survey as a reminder. Data collection was finalized by late-February, allowing for approximately two months for data analysis and the composition of the final study report before the end of Minnesota State University Moorhead's 2023 spring semester.

Ethical Considerations

Multiple steps were taken to ensure the privacy of participants. Firstly, participant names were not collected after the initial invitation to participate in the study. School names were the only location identifier collected by the survey itself, and those names were immediately replaced by their respective pseudonyms in order of reception after the corresponding data had

been pulled from the Minnesota Report Card system. The final data spreadsheet and research report will neither contain any real school names, nor instrumental music program types (band, orchestra, jazz, percussion, etc.) that could be traced back to any particular school. Geographically and logistically, all schools will be referred to as "Minnesota public schools."

Conclusions

This quantitative correlational study examines the relationship between average school socioeconomic status, instrument provision programs, and enrollment in instrumental music. Participants were instrumental music teachers selected from the MSHSL website, limited to those working in public schools in Minnesota. Data from these professionals was gathered through surveys with questions about their program enrollment numbers as well as instrument provision programs offered or advertised through the school. Data was also pulled from the Minnesota Department of Education in order to calculate enrollment percentages and free/reduced lunch percentages. This data-collection period of this study lasted approximately one month. Pseudonyms and data in the form of percentages will protect the privacy of participants. The next chapter will discuss the results from the study.

Results

Data Collection

The data collection period for this study lasted approximately one month. During that time, 65 potential participants were contacted and sent the survey, with 32 choosing to participate. Participants responded from a variety of public schools across the state of Minnesota, with 8 participants teaching in urban schools, 11 participants teaching in suburban schools or schools in isolated cities, and 13 participants teaching in rural schools. Of the schools reported, 14 had a student population less than 650, 10 had a student population between 650 and 1500, and 8 had over 1500 students.

All participants who chose to participate sent complete surveys with no questions skipped. Additionally, all schools reported by participants had enrollment and free/reduced lunch data available from the Minnesota Report Card system, completing data sets for all variables for all participants.

Results

All participant data was entered into a spreadsheet after collection (see Table 1), removing the school names along with enrollment counts to protect participants. Each school reported has a percentage of students enrolled in instrumental music, the percentage of students on free/reduced lunch, what kind of instrument provision programs are offered or advertised, and how much the school charges for instrument rentals per year. The type of instrument provision programs are represented in binary, where a "1" indicates the school offers or advertises that program and a "0" means it does not. All reported schools offered to rent students instruments through the school, so the following table only displays how much they charged for an instrument rental for the period of one school year. The free/reduced lunch percentage was used

as a measure of the school's socioeconomic status with an inverted relationship, meaning the higher the percentage, the lower the school's average socioeconomic status.

Table 1

Individual Schools' Instrumental Music Enrollment and Instrument Provision Programs

School ID	Instrumental Music Enrollment Percentage	Free/Reduced Lunch Percentage	Advertise Purchase of Instruments	Business Partnership	Annual School Instrument Charge
School 1	20.6%	57.6%	1	1	$25
School 2	15.3%	22.8%	1	0	$100
School 3	10.1%	30.7%	1	1	$100
School 4	45.8%	44.8%	1	1	$40
School 5	7.8%	17.5%	1	0	$50
School 6	18.1%	11.1%	1	1	$62
School 7	8.2%	28.5%	1	0	$40
School 8	10.9%	30.9%	1	1	$100
School 9	6.1%	22.4%	1	0	$50
School 10	42.9%	71.2%	1	0	$40
School 11	22%	39.4%	1	1	$50
School 12	6.4%	80.4%	0	0	$35
School 13	5.6%	76.2%	0	0	$35
School 14	2.6%	62.1%	1	0	$35
School 15	20.2%	54.6%	1	0	$15
School 16	17.8%	39.7%	1	1	$0
School 17	39.4%	17.9%	1	1	$50
School 18	17.3%	54.9%	0	1	$0
School 19	10.4%	45.3%	0	1	$0
School 20	6.8%	31.3%	1	1	$0
School 21	2.7%	21.3%	1	1	$0
School 22	28.4%	21.7%	1	0	$0
School 23	14.5%	55.2%	0	0	$25

Table 1 (continued)

School 24	16.1%	42.6%	1	1	$60
School 25	68.8%	61%	1	0	$0
School 26	31.2%	19.9%	1	1	$0
School 27	11.4%	23.7%	1	1	$110
School 28	24.5%	22.2%	1	1	$50
School 29	14.4%	29.6%	1	0	$30
School 30	13.2%	51.2%	1	1	$50
School 31	48.4%	56.2%	1	1	$50
School 32	66.7%	37.7%	1	1	$50

Analysis

How does the socioeconomic status of a community affect the enrollment in instrumental music programs in local schools?

In order to address the first research question, the average socioeconomic status of each school (independent variable A) was compared to the enrollment in instrumental music (dependent variable). When these variables are graphed (see figure 1), a trendline can be applied through a linear regression analysis with the equation y=0.113x+16.6 with an R^2 value of 1.5%. This indicates that although there is a general positive correlation between the values, the deviation makes the trendline a relatively poor predictor of instrumental music enrollment, which is verified through the P value of 50.6%.

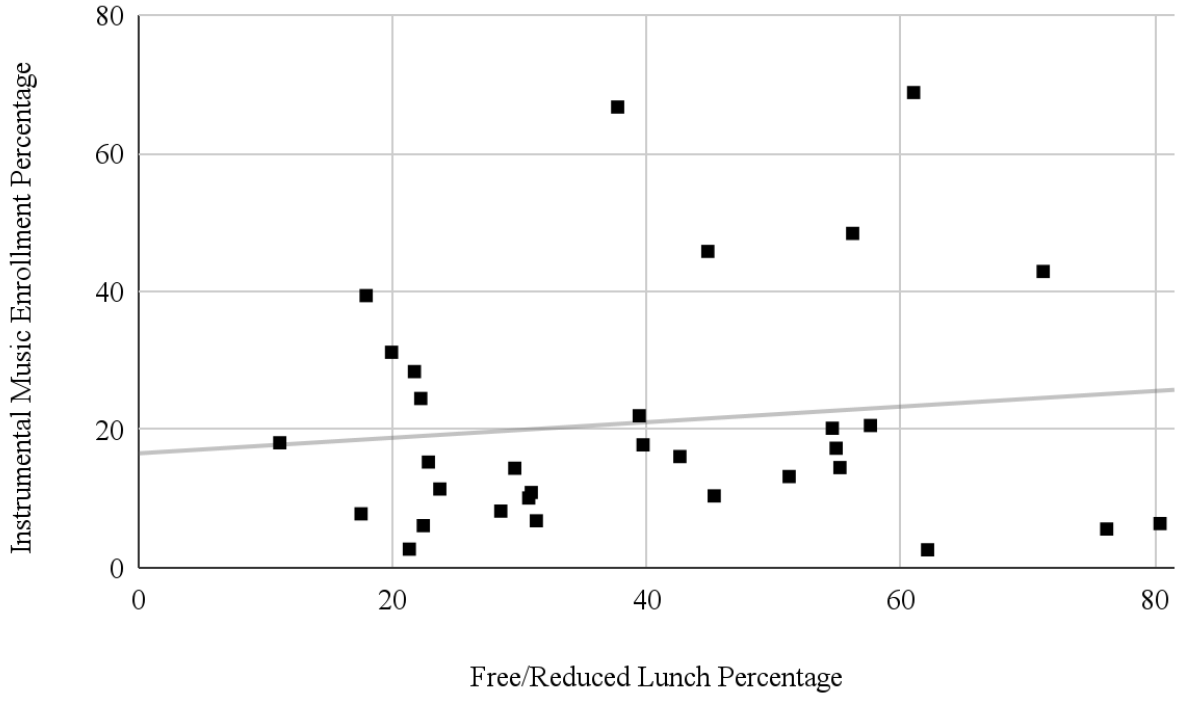
While the correlation of the mass data collected through this study does not hold statistical significance, it does hold value for the purpose of the original hypothesis. Studies indicate that students in lower socioeconomic situations tend to have a higher dropout rate (Albert, 2006; Albert, 2007) and that socioeconomic barriers may keep students from joining instrumental music programs in the first place (Holster, 2022; Kinney, 2019). Therefore, the

original hypothesis of this study expected that schools with lower average socioeconomic statuses would correlate with lower instrumental music enrollment. However, the lack of a strong R^2 value formed from the linear regression analysis indicates the hypothesis was incorrect.

In fact, the slight positive correlation between schools' free/reduced lunch percentage and instrumental music enrollment implies that the opposite relationship may exist due to the complexity of factors involving enrollment (Holster, 2022). In this case, Minnesota instrumental music teachers may already be aware of the inequity issues that come with the field, and are effectively working against barriers that would otherwise hinder students from participating.

Figure 1

Free/Reduced Lunch Percentage vs Instrumental Music Enrollment



Note: The trendline equation is y=0.113x+16.6 with an R^2 value of 1.5%.

What instrument provision program designs are the most effective in engaging students in instrumental music programs?

When reviewing the data from table 1, 4 different types of instrument provision combinations existed. All schools offered to rent instruments to students, but some also offered a lease-to-purchase program through a business partnership, some advertised that students could bring in or buy their own instruments, and some offered all three. When the enrollment percentages are separated by the combination of instrument provision programs, table 2 is formed.

Initially, it is clear that a majority of schools utilize all 3 of the instrument provision programs. The second largest category contains schools that both rent students instruments and advertise that students may use their own. Very few schools choose to just rent all participating students an instrument or only add a business partnership.

Analyzing the groups through their mean instrumental music enrollment percentage shows that out of the schools reported by participants, the ones that offered and advertised all three programs averaged the highest enrollment. Meanwhile, schools that only rented instruments to students had the lowest. There are a variety of factors that could cause this correlation, one simply being the amount of instruments the schools that choose to only rent have on hand. Additionally, according to Moyer (2010), students who have ownership and investment in their own instruments tend to continue with instrumental music past their beginning years, increasing program retention into secondary schools.

However, a single-factor ANOVA test on the groups indicates that the average differences are not statistically significant with a P value of 53.4%, likely due to both the deviation of

percentages in each group and the small amount of data. A larger sample size and further study are necessary to verify this relationship.

Table 2

Instrument Enrollment Percentages by Instrument Provision Program Combination

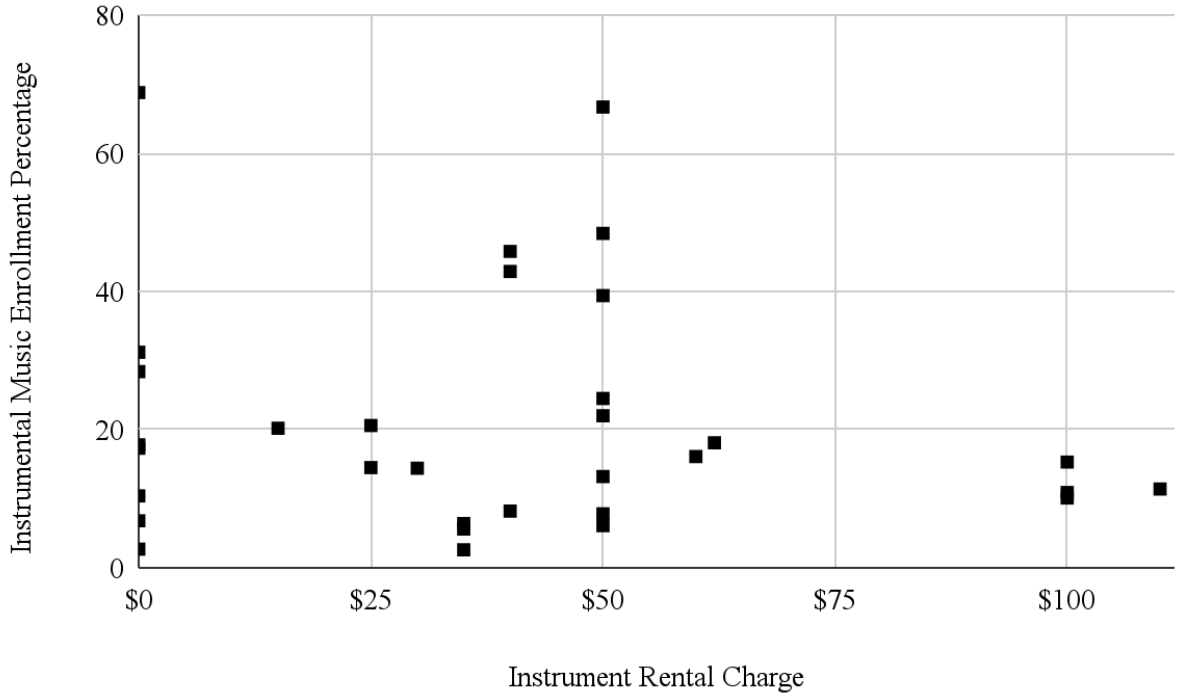
	S	S/B	S/O	S/B/O
Average	8.9%	13.9%	21.5%	23.9%
	6.4%	17.3%	15.3%	20.6%
	5.6%	10.4%	7.8%	10.1%
	14.5%		8.2%	45.8%
			6.1%	18.1%
			42.9%	10.9%
			2.6%	22.0%
			20.2%	17.8%
			28.4%	39.4%
			68.8%	6.8%
			14.4%	2.7%
				16.1%
				31.2%
				11.4%
				24.5%
				13.2%
				48.4%
				66.7%

Note: S=school-rented, B=business partnership, O=students own their own instruments

Looking further into independent variable B, the amount each reported school charges to rent out instruments for one academic year was also of interest to the research question. Plotting the charge data compared to the instrumental enrollment percentage produces the scatterplot seen in figure 2.

Figure 2

Annual School Instrument Rental Charge vs Instrumental Music Enrollment



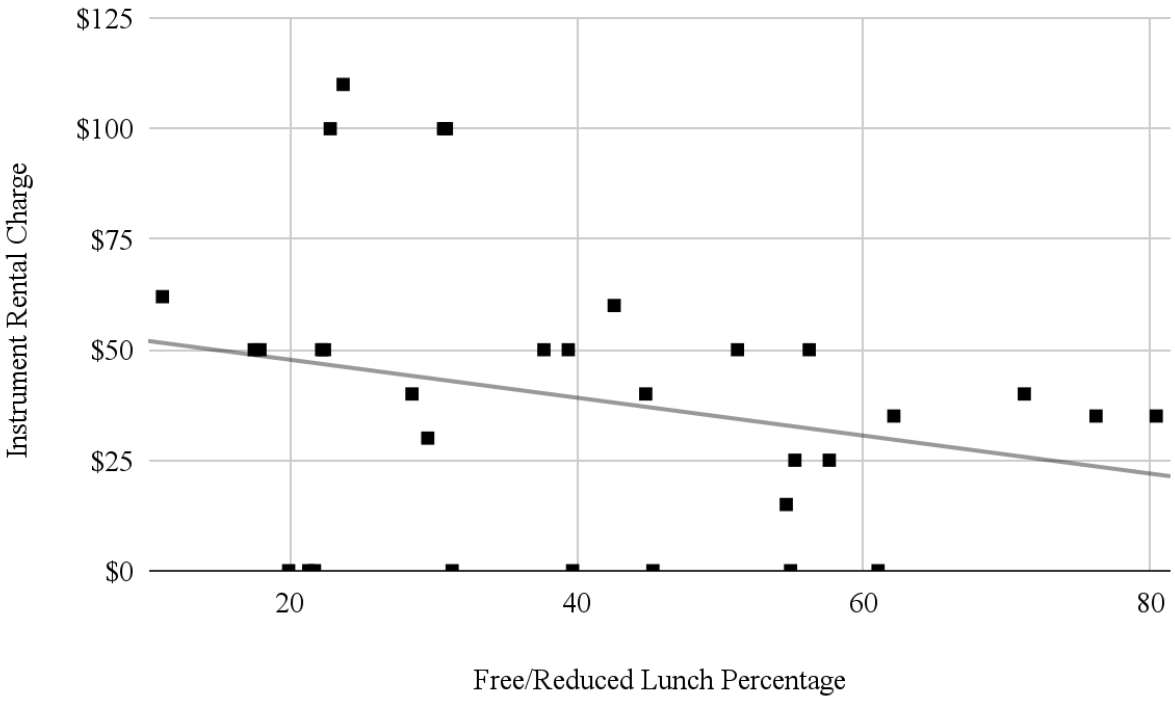
In comparing these data, there does not appear to be a strong correlation. What this does show however is that out of the schools reported, most charge either nothing or $50 per school year to rent instruments to students. The mean charge is $39. Additionally, although it did not require this response in the survey, 12 out of the 24 participants that reported charging for instrument rentals indicated that they did not charge students who were either on free/reduced lunch, or simply reported an inability to pay the fee.

Other Patterns

After addressing the two research questions of this study, other patterns from the data emerged that were of interest to the researcher. The first was the relationship between the school's instrument rental charge and socioeconomic status. When comparing the two factors (see figure 3), a weak correlation (R^2=6.4%) is formed through a linear regression analysis.

Figure 3

Free/Reduced Lunch Percentage vs Annual School Instrument Rental Charge



Note: The trendline equation is y=-0.429x + 56.3 with an R^2 value of 6.4%.

Generally, the lower the school's average socioeconomic status, the lower the school charges students to rent instruments. Although this relationship is not statistically significant, it may show one of the ways that school's attempt to counteract the original hypothesis of this study to make their instrumental music program equitable.

Another point of interest to the researcher came when accounting for factors that may have created outliers in table 1. At the high end of the free/reduced lunch percentage, Schools 12, 13, and 14 had relatively low instrumental music enrollment rates and large deviation below the trendline. Meanwhile, the high outliers did not appear to share any consistent variables. After referring back to the original surveys, Schools 12, 13, and 14 were reported from the same district, and two of the three were schools that only gave students school-rented instruments and did not participate in business partnerships or advertise that students could own their own instruments.

If the same linear regression analysis is used with the exclusion of those particular schools, a new trendline is produced with the equation y=0.415x+7.5 with an R^2 value of 14.6%. Additionally, the new rise of 0.415 has a P value of 4.1%, indicating a level of significance that is not supported by the small sample size. A study of the various factors not included in this study that affect the instrumental enrollment of Schools 12, 13, and 14 could bring valuable findings, and would be of interest to the researcher.

Conclusions

While the correlations in this study did not hold statistical significance due to a relatively small sample size and large deviation, there were interesting patterns that held importance to the researcher and the original hypothesis of this study. Despite studies showing that individual students of lower socioeconomic status have more barriers to instrumental music (Albert, 2006; Albert, 2007; Holster, 2022; Kinney, 2019; Moyer, 2010), Minnesota schools averaging lower socioeconomic status do not have a statistically significant correlation with lower instrumental music enrollment. In opposition, there is potential evidence that schools of lower socioeconomic status actually correlate with higher instrumental music enrollment percentages and engage more

students in their programs. This may be due to instrumental music teachers already being aware of equity barriers to their programs, and actively working to remove them.

Additionally, there is some evidence that utilizing all three instrument provision programs (student-owned, business partnership, and school rental) correlates with higher enrollment in programs. Especially where student ownership and investment are involved, this relationship is supported by other research (Moyer, 2010).

Implications for Practice

The goal of this study was to find correlations between schools' average socioeconomic status and enrollment in instrumental music programs as well as find what instrument provision programs are the most effective at engaging students. Though the correlations were not considered statistically significant, there was a weak positive correlation between the percentage of students on free/reduced lunch and instrumental music enrollment, implying that other factors such as instrumental music teachers working to reduce barriers may be an important variable. Concerning instrument provision programs, the schools that offered the most options to obtain an instrument averaged higher percentages than those that just offered 1 or 2, with the ownership of instruments appearing to play an important role in increasing engagement in those music programs.

Action Plan

The results of this study show a relatively optimistic view of the state of instrumental music programs in Minnesota. Despite individual students of lower socioeconomic status generally having a lower chance of joining or sticking with instrumental music through their school career, many factors are at play and Minnesota instrumental music teachers are doing a good job of countering this effect on a larger, school-size scale.

With the collected data resulting in low R^2 values in correlations that were found, it is clear that there is no one model to fit any situation. When designing instrumental music programs, teachers must consider a variety of factors to offer students as many possibilities to participate as they can and how much to charge for instruments to upkeep and maintain their instrument inventories. This way, they can engage more students and expose them to all the educational, emotional, and developmental benefits of instrumental music.

Plan for Sharing

The results of this study will be shared with my music colleagues in my district and district cohort. Additionally, due to the focus on equity and socioeconomic status, I plan to share this research with my administration as well as non-music colleagues. An email will be sent to participants to request a copy.

In viewing the results and conclusions of this study, I hope that those reading find the results of this study reassuring as I do. While socioeconomic factors can clearly be a barrier to students engaging in instrumental music, the data collected demonstrate that they are not the only, or even the most important factor. Throughout the state of Minnesota, instrumental music teachers are able to engage their students using a variety of instrumen provision programs despite their school's socioeconomic status.

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Appendix A

Informed Consent Example

Socioeconomic Status and Instrument Provision Program Effects on Engagement in Instrumental Music Programs

Implied Consent

You are invited to participate in a research study about the correlations between the average socioeconomic status of a school, instrument provision programs, and enrollment in instrumental music programs. The goal of this study is to examine the relationship between these variables in order to determine how to best engage the most students possible in instrumental music.

This study is being conducted as part of an action research project in partial fulfillment of the researcher's Masters Degree Program for Minnesota State University Moorhead.

Participation in this study is voluntary. You have been selected as a potential participant due to your status as an instrumental music educator. The only requirement to participate in this study is the completion of the survey. If you agree to participate in this study by completing the following survey, you will be asked about:

1. The name of the school you work at
2. The total number of students enrolled in your instrumental music programs
3. The types of instrument provision programs you provide or advertise to your students (school rental, business lease-to-own program, etc.)

Participation in this study involves minimal risk. The name of the school you work at will not be included in the study. This information will only be used to pull enrollment and free/reduced lunch data from the Minnesota Department of Education. Individual schools in the study will be referred to as "School 1, School 2, etc."

Benefits of this study include the increased understanding of the relationship between the average socioeconomic status of a school, instrument provision programs, and student enrollment to help instrumental music teachers find ways to engage students in their programs. Additionally, it may offer instrumental music teachers findings to bring to their administration to support the funding of local school instrument inventories and equitable rental programs.

If you have any questions about this study, you may contact me at zachary.truong@go.mnstate.edu. You may also contact my advisors Dr. Kathy Enger at kathy.enger@mnstate.edu or Dr. Michael Coquyt at michael.coquyt@mnstate.edu, or the Institutional Review Board chair Dr. Robert Nava at robert.nava@mnstate.edu.

By checking the box below, you are agreeing to participate in this study. You may withdraw at any point after you have submitted this survey without prejudice if you decide not to participate.

☐ By checking this box, you agree to participate in this study

Appendix B

Digital Survey Questions

1. What is the name of the school you work at? If you work at multiple schools in the same district, name all of them separated by a comma (ex. Town High School, Town Middle School). If you work in multiple districts, please choose one for the purposes of this survey. School names will be used by researchers to retrieve enrollment data from the Minnesota Department of Education, and will not be visible in the study report.
2. How many total students do you currently have enrolled in your instrumental music program? If reporting multiple schools in the same district, list enrollment numbers in the same order as the name of the schools above separated by a comma (ex. 63, 85)
3. Check below the instrument provision programs the school(s) you work at have available for your students (how do the students get their instruments)? More than one option may be selected.
    a. Students retrieve instruments on their own
    b. Business partnership offering lease-to-purchase programs
    c. School-rented/owned instruments
4. If your school rents/loans instruments to students so they can participate in your program, how much is charged for the school year?