

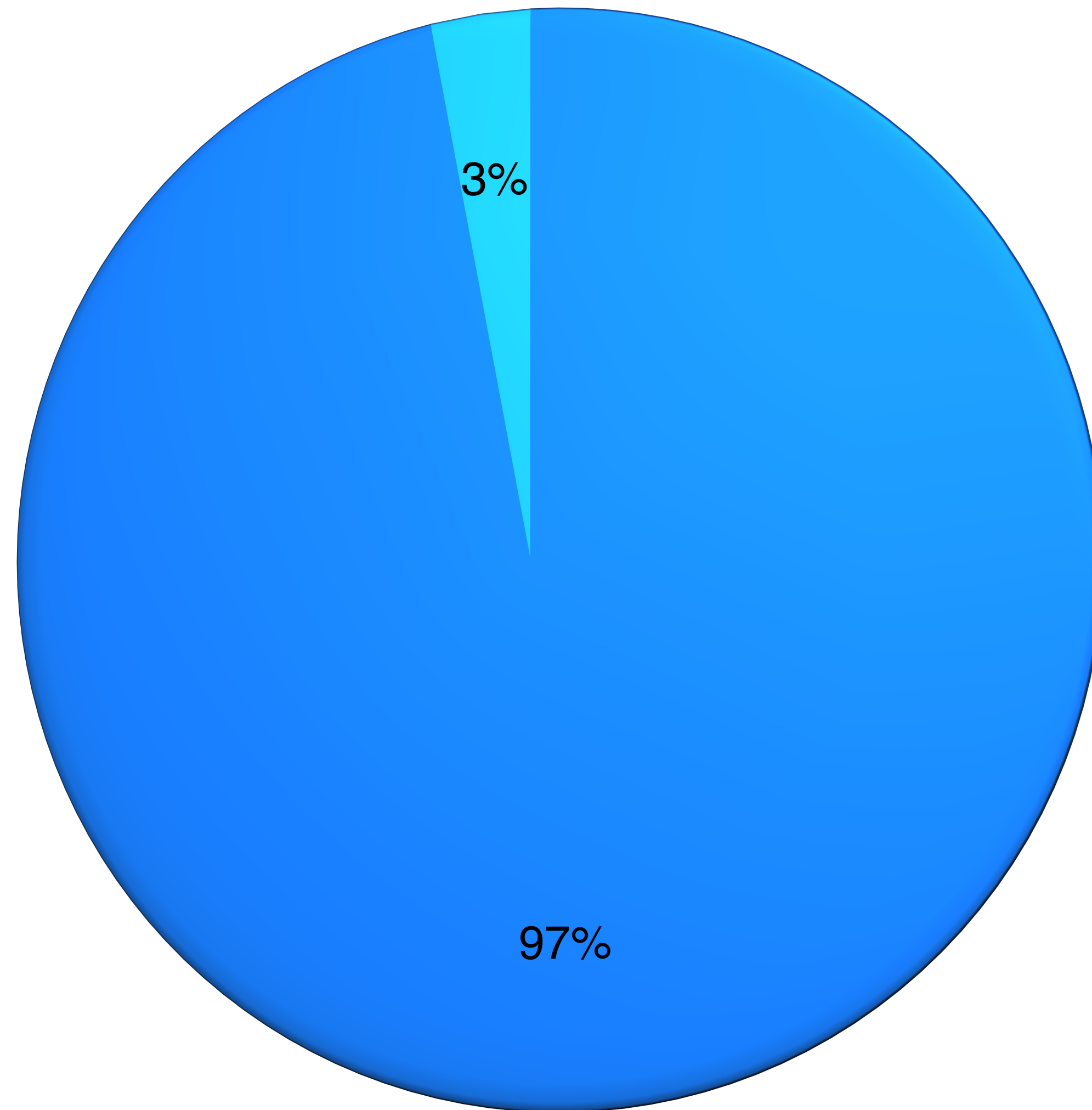
Music Education Technology Use in a Hispanic American Community

Benjamin Guerrero
PhD Student
Eastman School of Music

Introduction

97% of K-12 teachers reported having a computer in their classroom

(U.S. Department of Education National Center for Education Statistics, 2010)



National Association for Music Education

2014 Music Standards

CREATING

PERFORMING

RESPONDING

CONNECTING

“Students need to have experience in creating, to be successful musicians and to be successful **21st century citizens.**”

PK-8 General Music

Composition/Theory

Music Technology

Guitar/Keyboard/Harmonizing Instruments

Ensemble



National Association
for Music Education

(National Association for Music Education, 2018)



Purpose

To examine the use of technology among music educators in two school districts within the same urban county in the Southwestern United States.

Research Questions

1. To what extent do music teachers use technology in their classrooms?
2. How comfortable are these teachers with technology integration?
3. Where do these teachers learn about technology integration, and do they feel adequately prepared to teach with technology as a result of that resource?
4. What major obstacles do these teachers perceive with technology integration in their music programs?



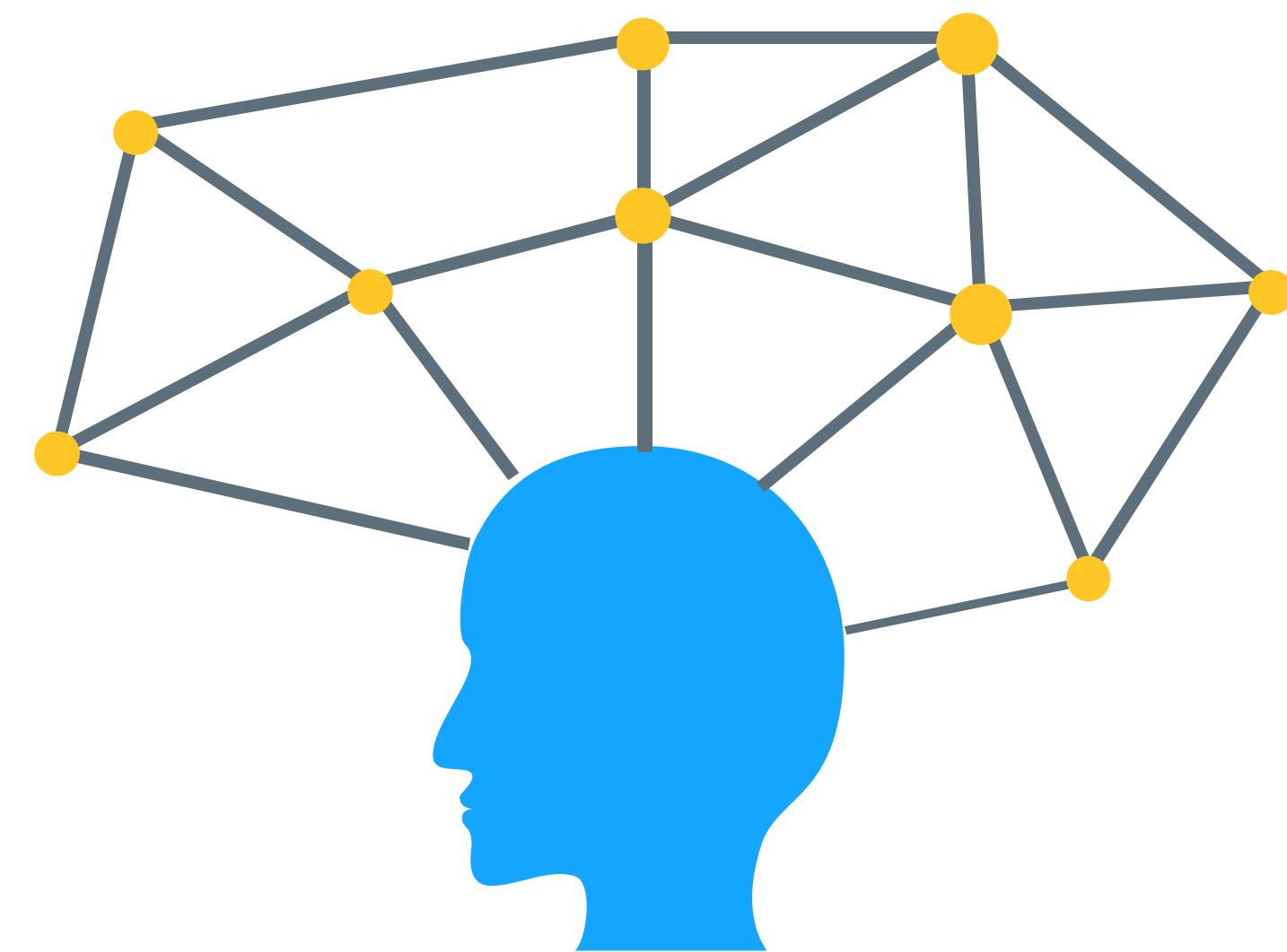
Literature Review

Themes

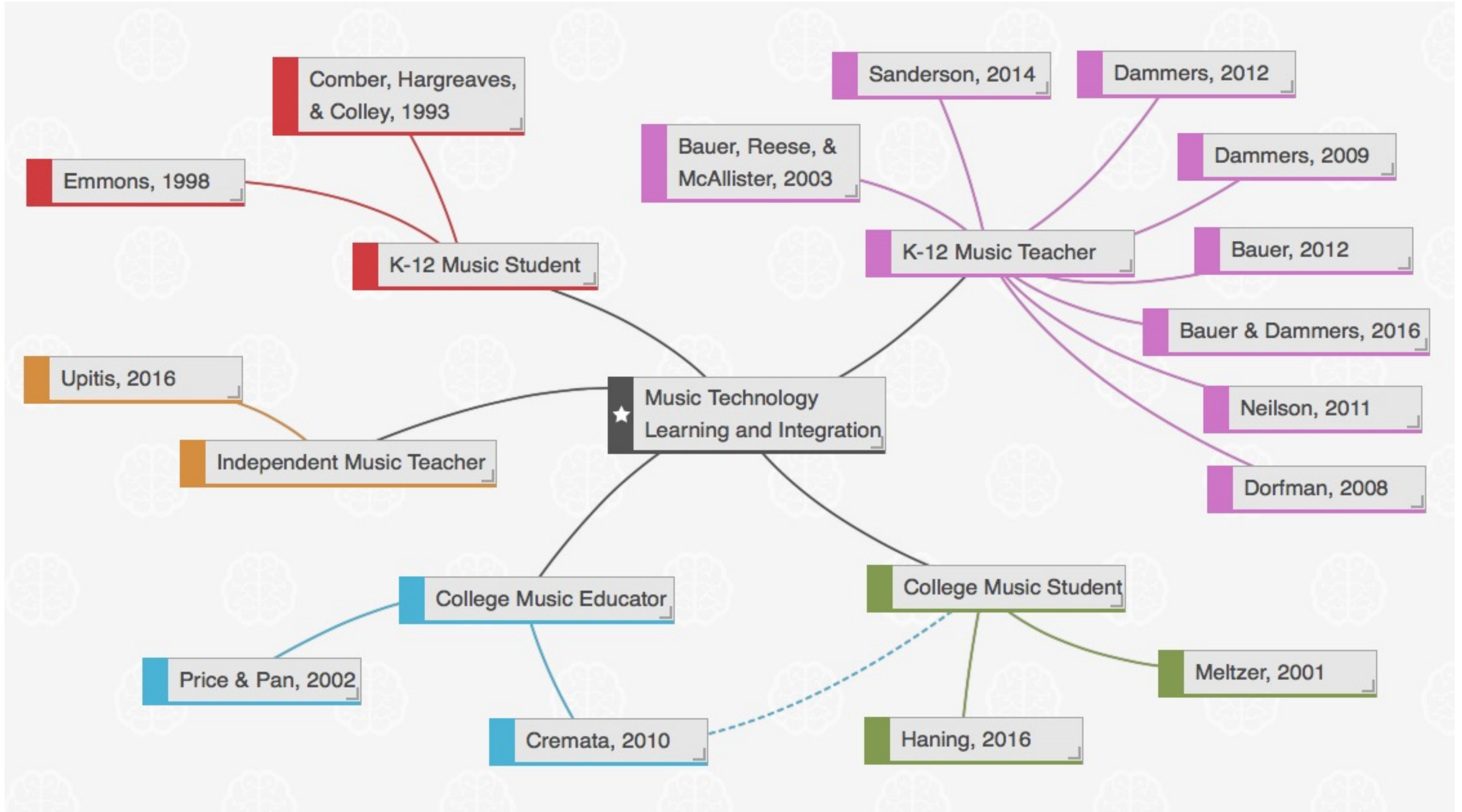
- Learning technology
 - Where someone learned how to use music technology
 - Integrating technology
 - Teachers using technology for planning and preparation of students' learning experiences
 - Activities in which students engage in using technology as a tool for enhancing those learning experiences
- (Cremata, 2010; Dammers, 2008)

People

- K-12 music students
- K-12 music teachers
- Undergraduate music students
- Undergraduate music educators
- Independent music teachers



Literature Review - Mind Map



Perceived Challenges

Integrating technology in music classrooms faces many perceived challenges including:

- budget limitations
- curricular issues
- lack of time
- need for professional development
- adapting technology use to state or national standards
- perceptions that technology is unnecessary in traditional music instruction

(Bauer & Dammers, 2016; Cremata, 2010; Dorfman, 2008; Upitis, Abrami, & Boese, 2016)

Prior Research

Professional development (Bauer, 2012; Bauer, Reese, & McAllister, 2003)

Undergraduate curriculum (Bauer & Dammers, 2016)

High school technology-based music class (Dammers, 2012)

Gender & technology confidence (Comber, Hargreaves, & Colley, 1993)

Administrative vs. pedagogical uses (Dorfman, 2008)

Methodology

Quantitative study used an online survey tool

Non-experimental descriptive research

Participants were K-12 music teachers from two school districts in a predominantly Hispanic community in the Southwestern United States with the median household income below the national average

Survey used primarily 5-point Likert-type questions

Additional correlative analysis

Discussion

Study is limited with a small sample size and low response rate

School Districts

	District A	District B
Campuses	48	63
High Schools	6	8
Student Enrollment	46,500+	43,500+
Hispanic Students	92.6%	92.7%
Teachers	2,590	3,075

Participants

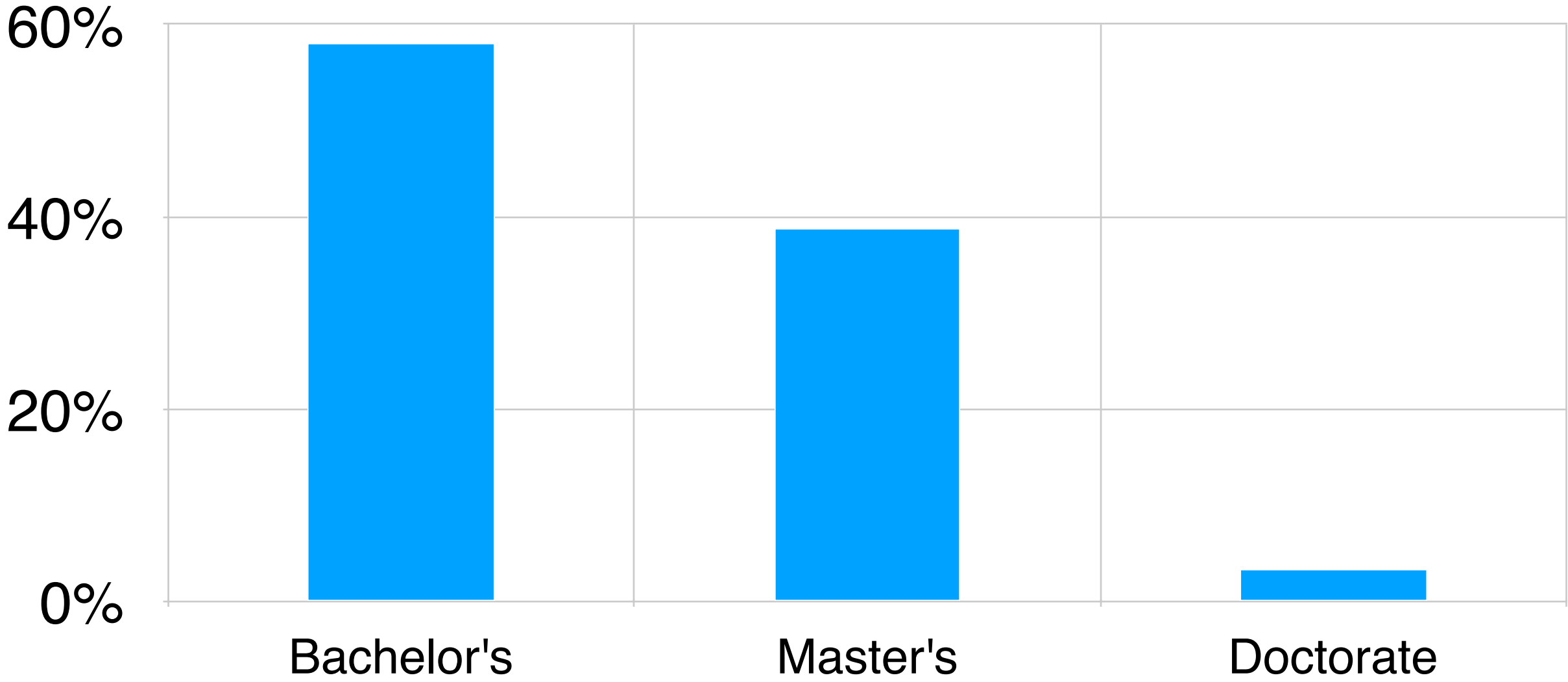
Response

Teachers Reached	# of Responses	Response Rate
200	31	15.5%

Gender of Participants

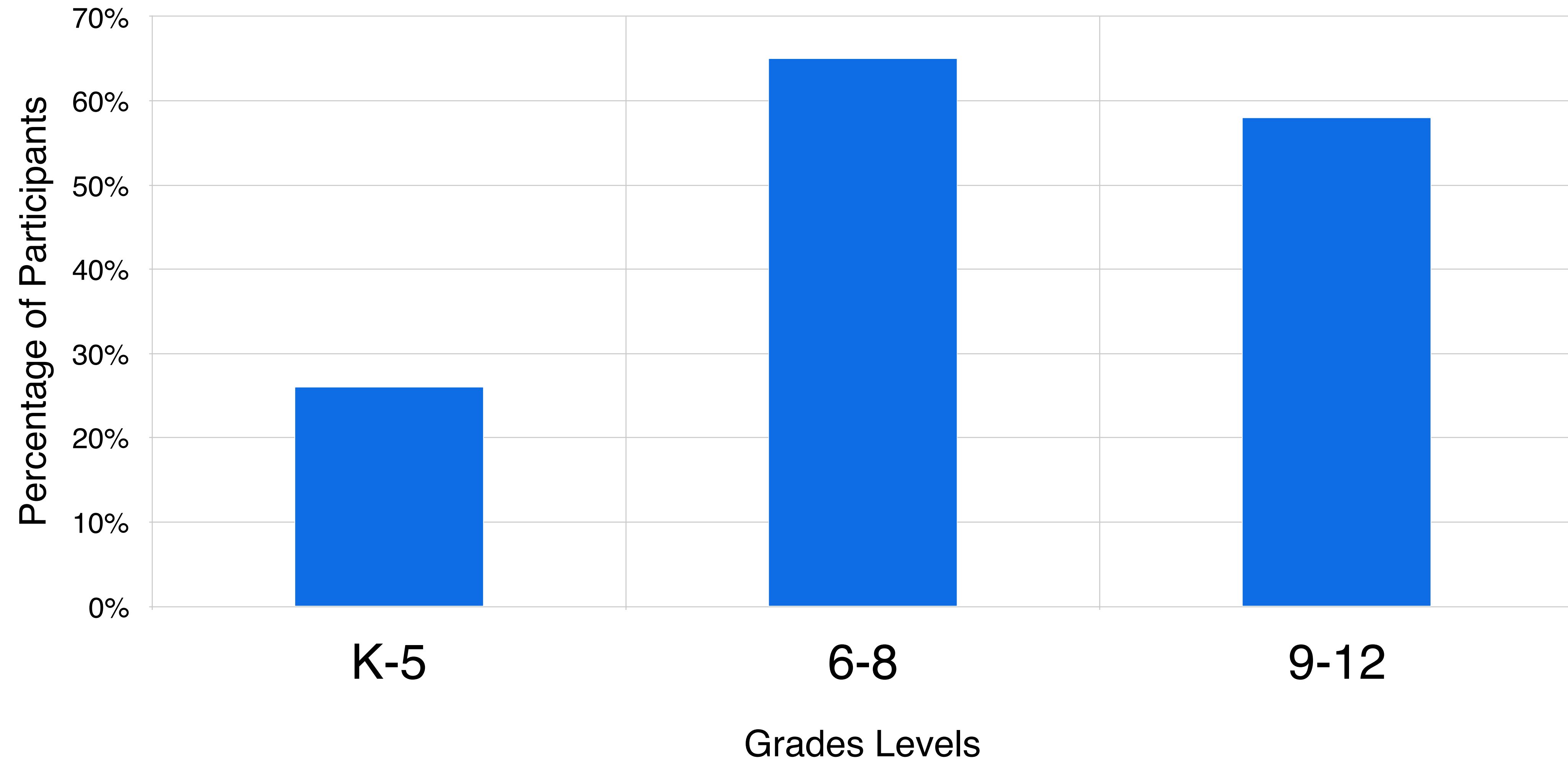
Male	Female
45%	55%

Highest Degree Earned



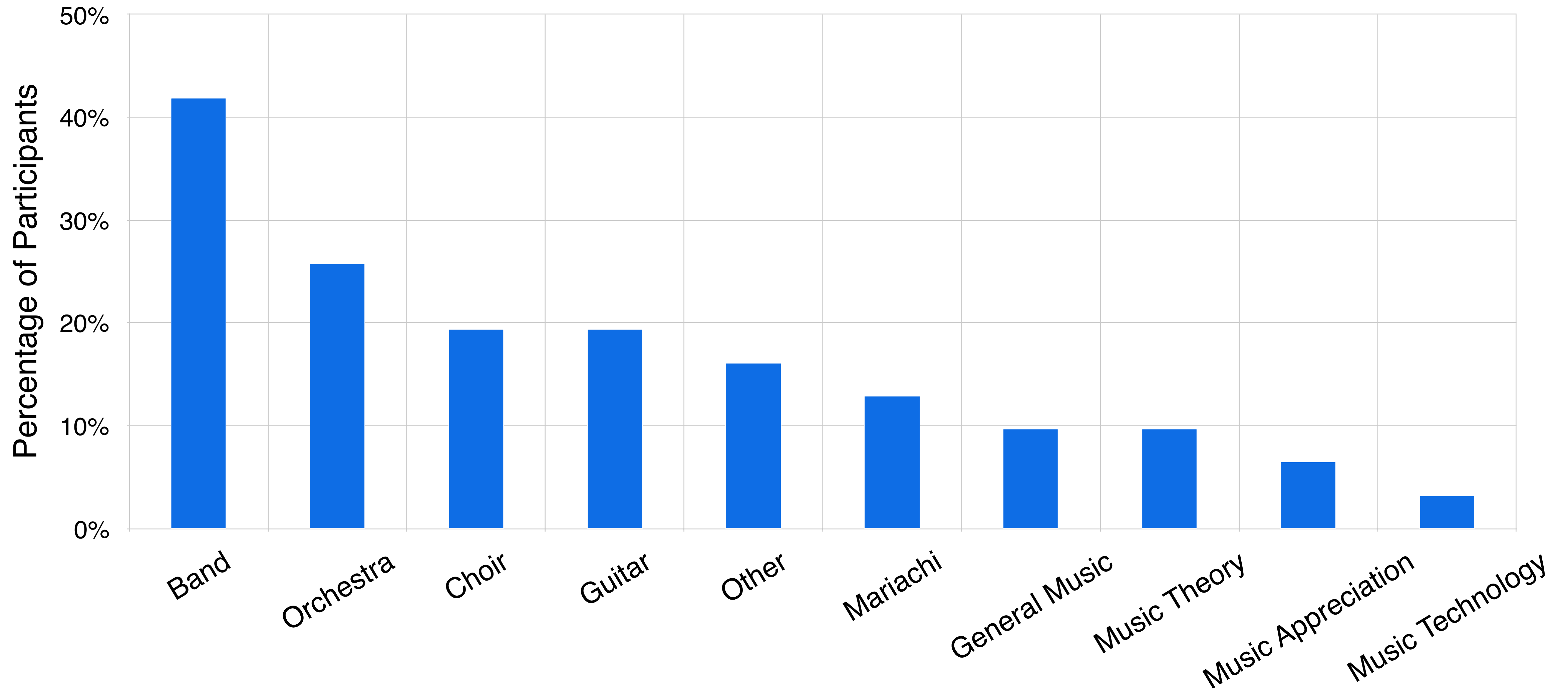
Participants

Grades Taught



Participants

Content Areas



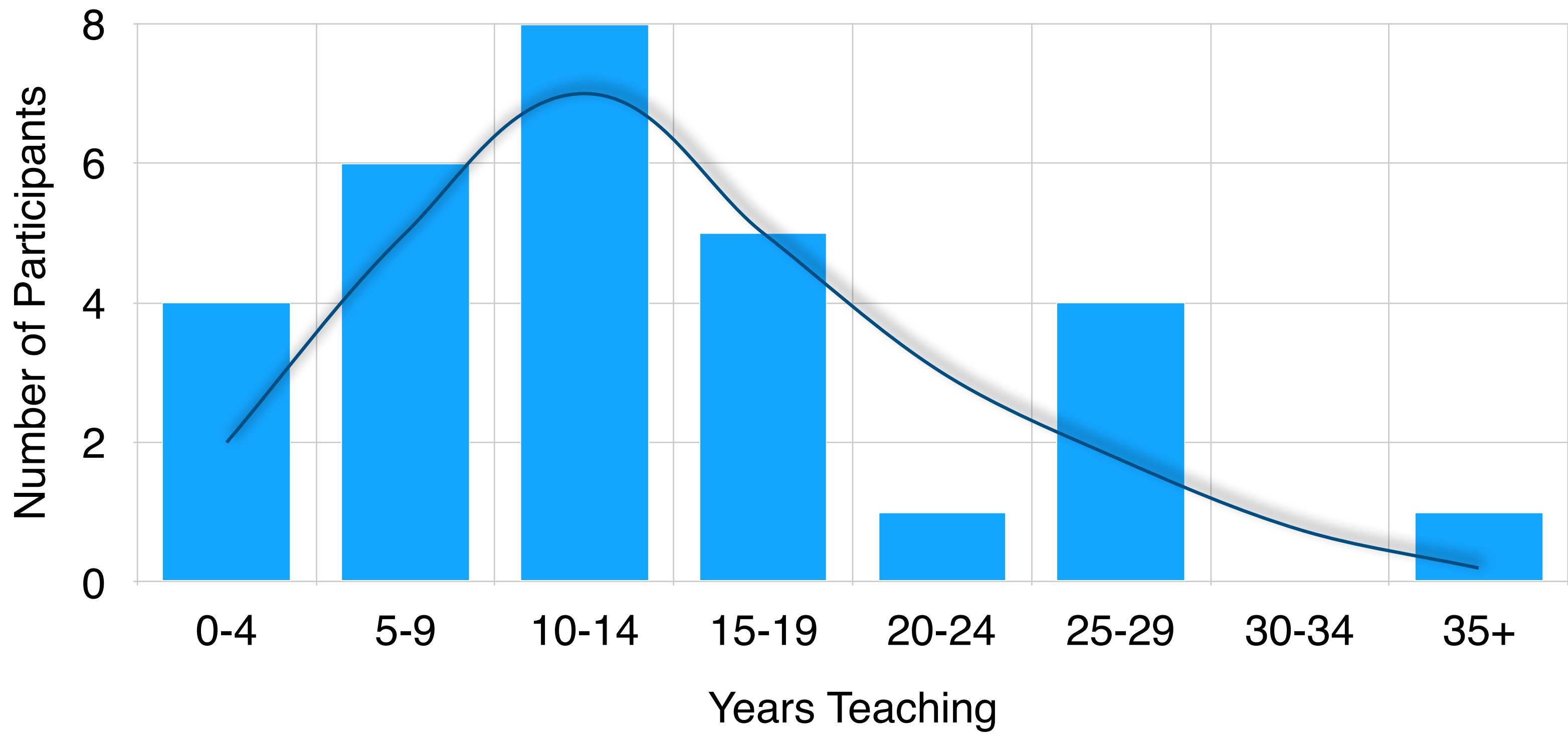
Discussion

No correlation between teaching experience and technology comfort

Participants

Years Teaching

Min.	Max.	Mean	Standard Deviation	N
0.5	36	12.9	8.72	30



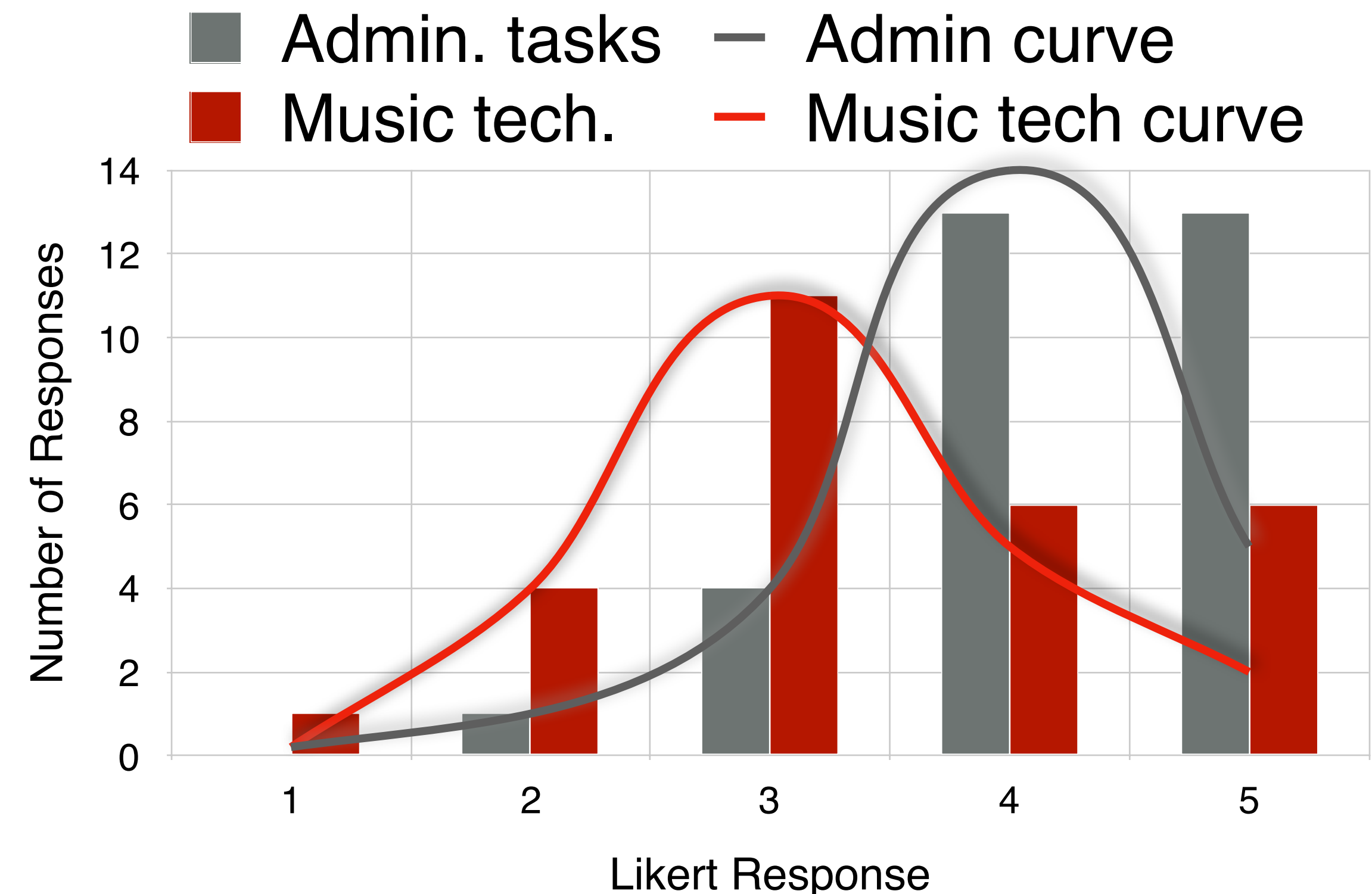
Level of Comfort

1. When using technology for administrative tasks (word processing, email, attendance, grades, etc.), you would classify yourself as:

2. When using music technology (notation software, digital audio workstations, SmartMusic, PA systems, etc.), you would classify yourself as:

1. Inexperienced
2. Beginner
3. Competent with basic tasks
4. Competent with complex tasks
5. Expert, capable of teaching others

Technology Comfort	Mean	Std. Deviation
Administrative tasks	4.23	.805
Music technology	3.48	1.061



Level of Comfort

Correlation of Technology Comfort Administrative and Musical Tasks

r	p
.454	.010

The significance level is at .01.

Correlation of Teaching Experience with Technology Comfort

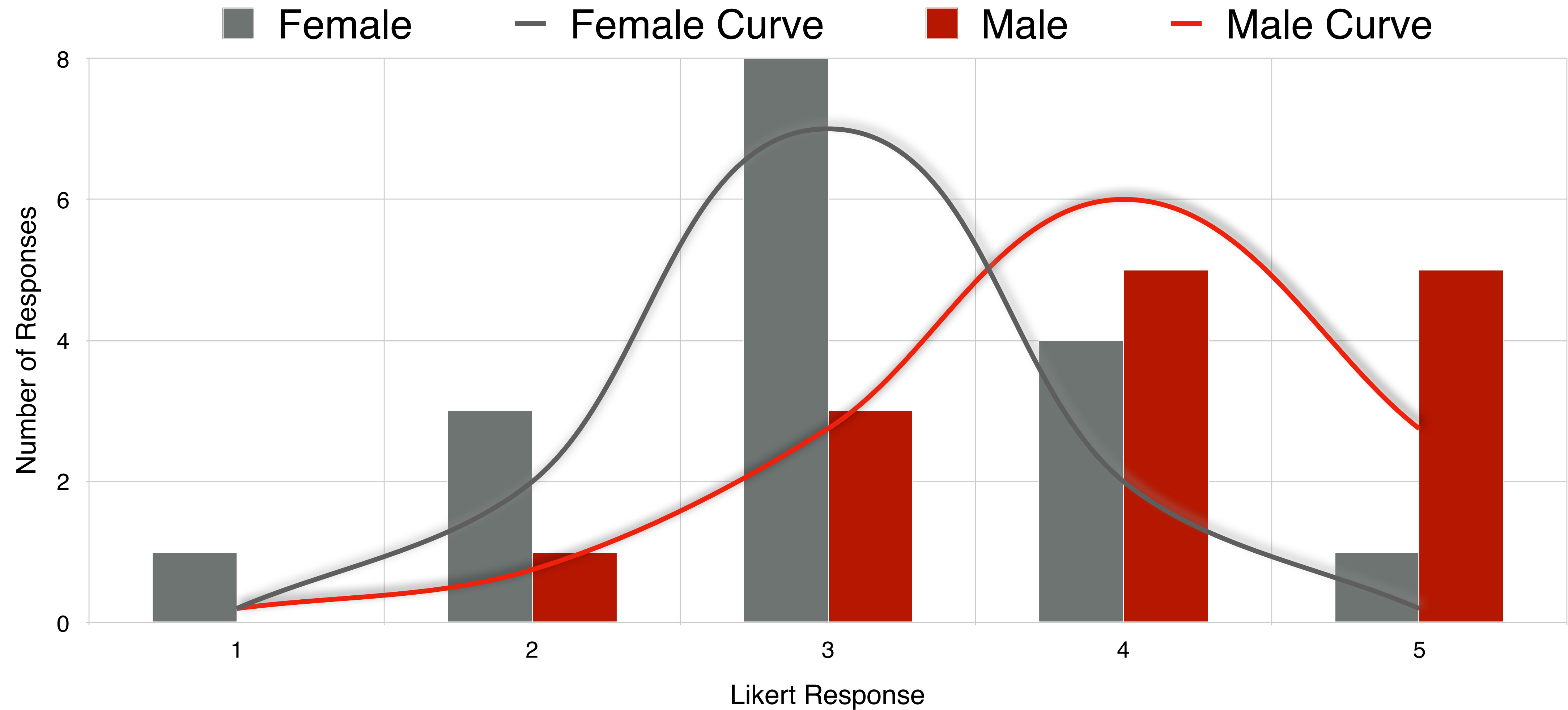
	Technology for administrative tasks	Music Technology	Overall Comfort with Technology
r	-.053	-.180	-.185
p	.781	.341	.329

Discussion

Among the participants, male teachers were more likely to be comfortable using music technology than female teachers

Music Technology Comfort By Gender

	N	Mean	Std. Deviation
Male	14	4.00	.961
Female	17	3.06	.966



Discussion

Personal exploration and peer support are the most important sources of technological knowledge

Professional Development

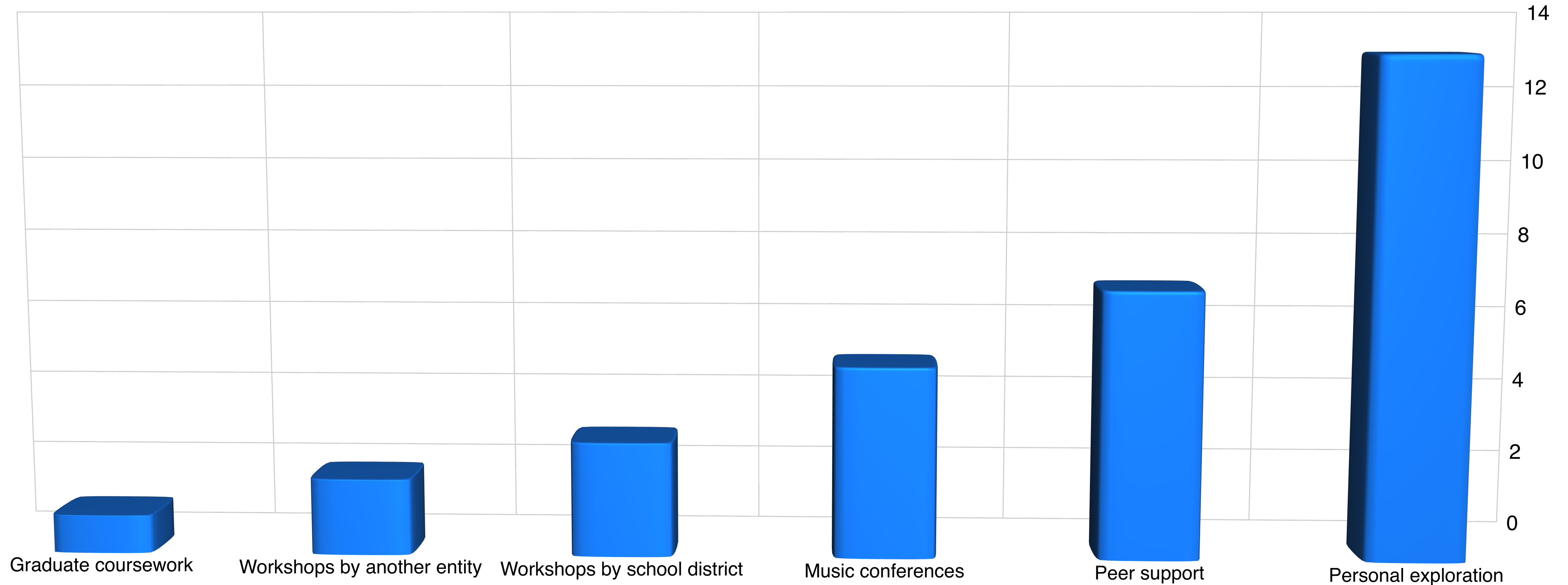
How important have the following sources been in providing you with the knowledge and skills to use music technology in the classroom?

1. Not important
2. Less important
3. Neutral
4. Important
5. Very important

	n	Mean	Std. Deviation
Personal exploration	31	4.48	.811
Peer support	31	4.39	.844
Music conferences	29	4.31	.712
School technical support	31	3.26	1.316
In-service workshop provided by another entity	25	3.24	1.234
In-service workshop provided by school district	31	3.23	1.146
Graduate coursework	19	3.11	1.449
Undergraduate coursework	27	2.89	1.281

Professional Development

Which of the following sources has been the most important in providing you with the knowledge and skills to use music technology in the classroom?



Discussion

Teachers are more likely to use technology on their own for administrative purposes rather than with their students for pedagogical purposes

Personal Technology Use

	Seldom or never	2-4 times a year	Monthly	Weekly	Daily
For professional or administrative tasks	0%	0%	3.2%	0%	96.8%
To assess students' music performance	16.1%	6.5%	32.3%	16.1%	29%
To assess students' knowledge in music terminology, history, or theory	25.8%	22.6%	22.6%	19.4%	9.7%
Overall teaching	3.2%	6.5%	16.1%	32.3%	41.9%

Personal Music Technology Use

	Seldom or never	2-4 times a year	Monthly	Weekly	Daily
Writing/arranging music with notation software	16.1%	16.1%	22.6%	25.8%	19.4%
Creating music with a sequencer	61.3%	6.5%	9.7%	12.9%	9.7%
Recording live performances	9.7%	22.6%	32.3%	29%	6.5%
Uploading or sharing audio/video files	16.1%	6.5%	38.7%	25.8%	12.9%
Accompaniment	19.4%	29%	16.1%	12.9%	22.6%
Making multimedia presentations	32.3%	29%	22.6%	9.7%	6.5%

Student Music Technology Use

	Seldom or never	2-4 times a year	Monthly	Weekly	Daily
Uploading or sharing audio/video files	32.3%	19.4%	19.4%	19.4%	9.7%
Accompaniment	35.5%	29%	19.4%	6.5%	9.7%
Making multimedia presentations	61.3%	16.1%	9.7%	6.5%	6.5%
Computer-assisted instruction (SmartMusic, Music First, Quaver, etc.)	48.4%	9.7%	19.4%	9.7%	12.9%

Discussion

Budget and lack of equipment are the main obstacles to integrating music technology

School Support

How much support does your school's instructional technology department provide in the following areas:

	Mean	Std. Deviation
Hardware installation/service	2.9	1.221
Software installation	2.87	1.310
In-service training	2.58	1.089
Financial support	2.06	.998

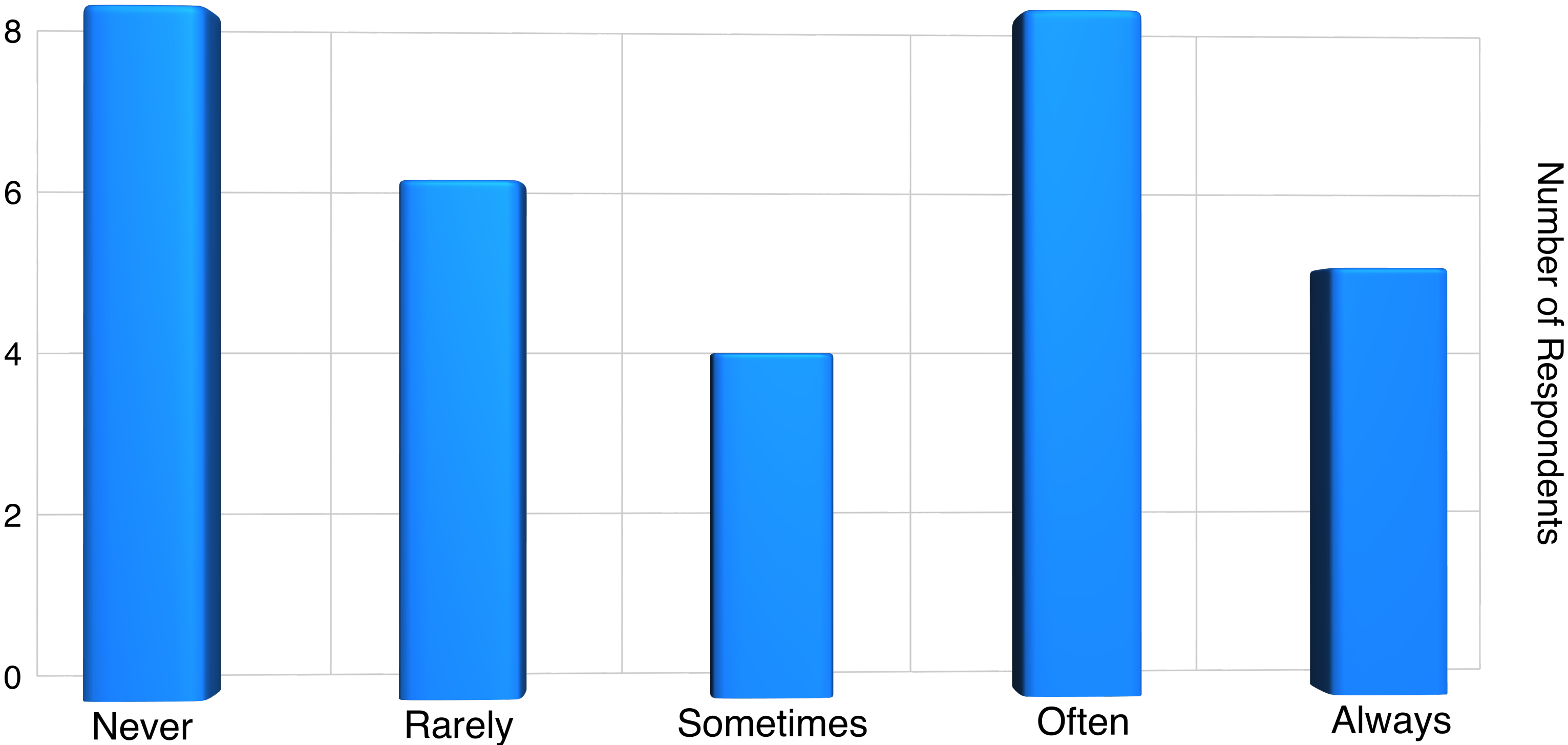
1. No support
2. Little support
3. Moderate support
4. Consistent support
5. High level of support

School Priority

- 1. Never
- 2. Rarely
- 3. Sometimes
- 4. Often
- 5. Always

How often does your administration encourage the use of technology in your music teaching?

Mean	2.87
Std. Deviation	1.477



School Priority

1. Never
2. Rarely
3. Sometimes
4. Often
5. Always

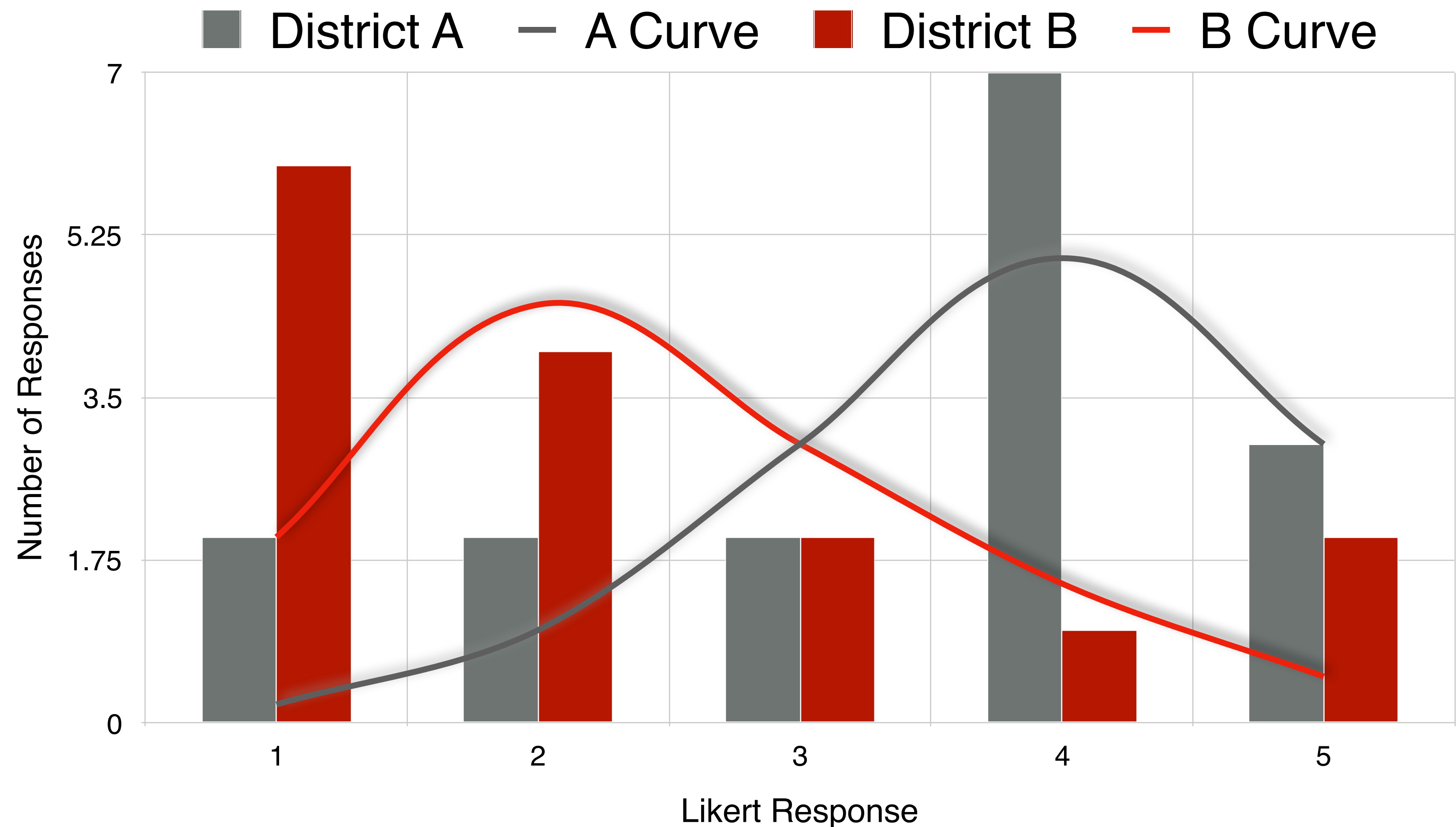
District A

Mean	3.44
Std. Deviation	1.315

District B

Mean	2.27
Std. Deviation	1.438

How often does your administration encourage the use of technology in your music teaching?



Comments on School Support

“Campus policy earmarks tech budgets to core classes. It is difficult for fine arts teachers to get campus or district funds to support tech in the classroom.”

“rarely are there trainings for music specific technology, much less funds for purchase.”

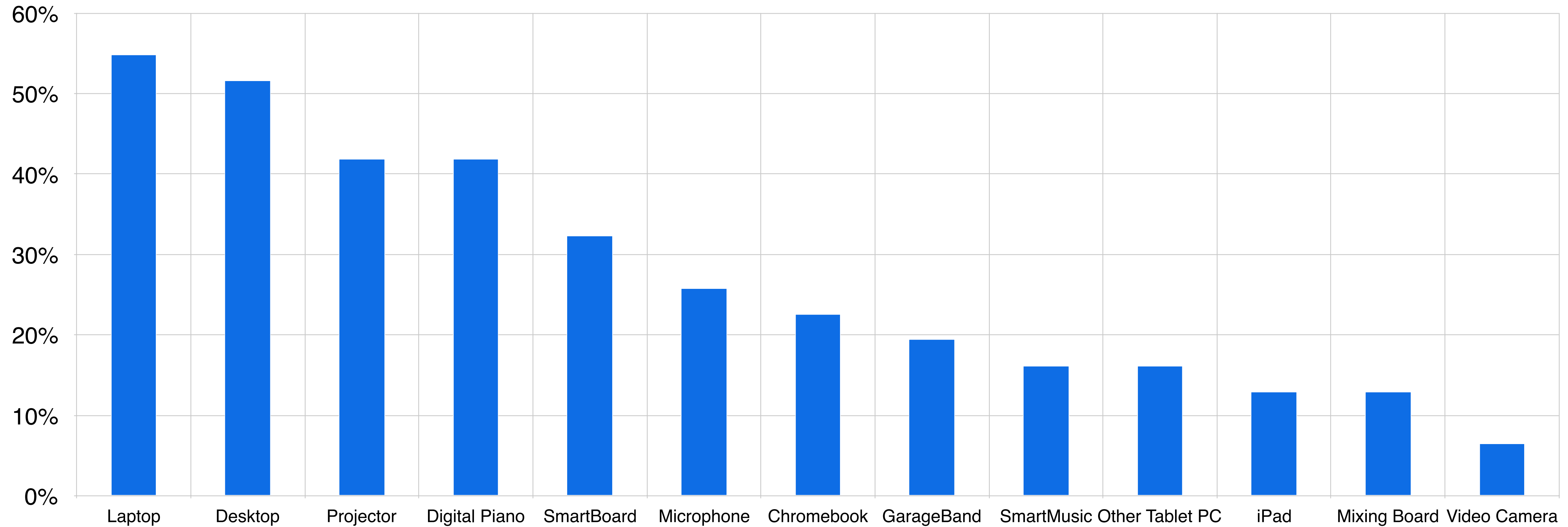
“I don't believe they care how the students use technology in music classes.”

“Approval process for certain resources is sometimes slow to approve”

“Music technology is very much so present in the classrooms in our district but it could most definitely be a lot better supported.”

Technology Provided by the School

Please check the devices or software that your school has provided for your classroom (not personal devices):

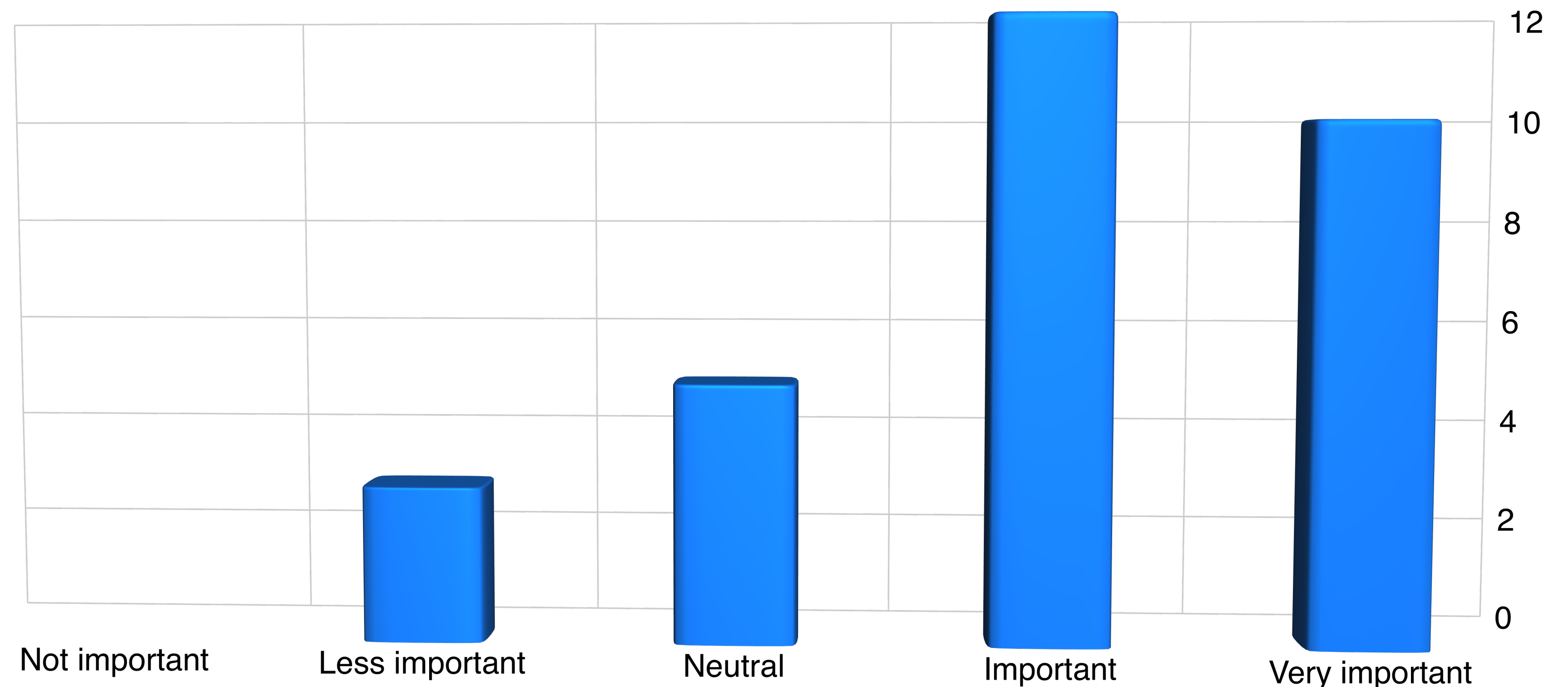


Importance of Music Technology

How important is it for you to integrate technology in your classroom?

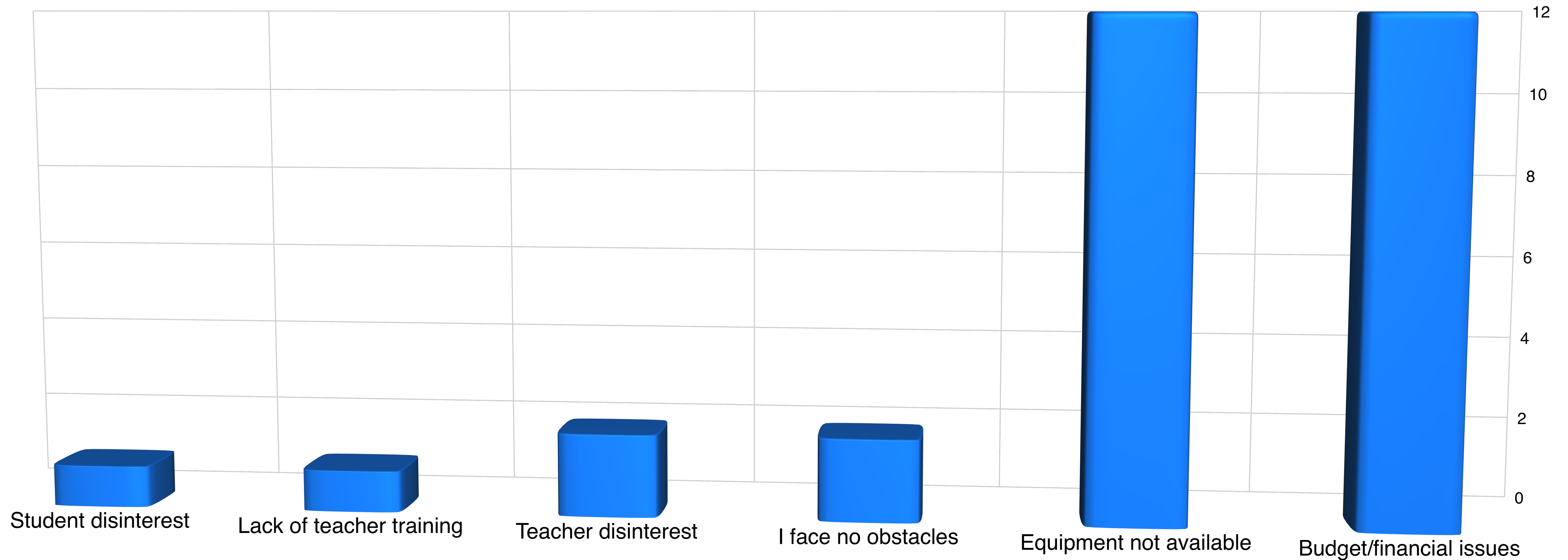
1. Not Important
2. Less Important
3. Neutral
4. Important
5. Very Important

Mean	3.97
Std. Deviation	.964



Obstacles to Integrating Technology

What prevents you from integrating technology at your school?



Comments on Obstacles

“Students in my community area share other, more important needs. Perhaps getting home to babysit while parents work, no time for technology even at home. Students usually do not have wifi at home nor a device to use for such”

“I have to provide many of the resources on my own”

“time” “\$\$\$”

“Convincing administration that these items are necessary in an elective course.”

“Lack of budget for technology, lack of time due to State "assessments" such as UIL marching and concert, All-Region, Solo and Ensemble, Jazz, Winter Guard, etc.”

Additional Comments

“Technology can be such a useful and necessary tool to be successful in the music classroom when used appropriately and efficiently. However, when it is not enforced well, it can be counter-productive.”

“its a nice idea but time is limited and tech often fails when its needed most”

“It would be amazing to find a way to integrate technology to perhaps motivate the students and could aid their learning.”

“the trainings and programs need to be USEFUL and immediately AVAILABLE.”

Findings

Study is limited with a small sample size and low response rate

No correlation between teaching experience and technology comfort

Among the participants, male teachers were more likely to be comfortable using music technology than female teachers

Personal exploration and peer support were the most important sources of technological knowledge

Teachers are more likely to use technology on their own for administrative purposes rather than with their students for pedagogical purposes

Budget and lack of equipment are the main obstacles to integrating technology

Results do not differ greatly compared to prior research

Future Research

Expand study to a state or entire Southwestern region of the United States

Explore gender and technology use among teachers and students

Adapt into a qualitative study to better understand the identity and situation of those teachers that are comfortable with technology, use it frequently in their classroom, or teach a music technology class

References

- Bauer, W. I., & Dammers, R. J. (2016). Technology in music teacher education: A national survey. *Research Perspectives in Music Education*, 18(1), 2-15.
- Cremata, R. (2010). The use of music technology across the curriculum in music education settings: Case studies of two universities. (Doctoral dissertation), Boston University, Boston, MA.
- Dorfman, J. (2008). Technology in Ohio's school music programs: An exploratory study. *Contributions to Music Education*, 35, 23-46.
- Jassmann, A. E. (2004). The status of music technology in the k-12 curriculum of South Dakota public schools. (EdD dissertation), University of South Dakota, Vermillion, SD.
- Ohlenbusch, G. (2001). A study of the use of technology applications by Texas music educators and the relevance to undergraduate music education curriculum. (DMA dissertation), Shenandoah University, Winchester, VA.
- Reese, S., & Rimington, J. (2000). Music technology in Illinois public schools. *Update: Applications of Research in Music Education*, 18(2), 27-32.
- State Education Agency Directors of Arts Education. (2014). National core arts standards - music technology strand. Retrieved from [http://www.nationalartsstandards.org/sites/default/files/Music Tech Strand at a Glance 4-20-15.pdf](http://www.nationalartsstandards.org/sites/default/files/Music%20Tech%20Strand%20at%20a%20Glance%204-20-15.pdf)
- U.S. Department of Education. (2018). Rural and low-income school program. Retrieved from <https://www2.ed.gov/programs/reapsrsa/fy18reapallocationsspreadsheet.xlsx>
- Uptis, R., Abrami, P. C., & Boese, K. (2016). The use of digital tools by independent teachers. Paper presented at the International Association for Development of the Information Society (IADIS) International Conference on Mobile Learning, Vilamoura, Algarve, Portugal.



Thank you!

Any questions?