Master's Thesis

Examining The Effect of Sight-Reading Factory on High School Students' Engagement in Music

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Abstract

Music educators are always looking for new technology to incorporate into their classrooms. The applications educators incorporate into their classrooms must be engaging and motivating for students. This qualitative study aims to address the problem of the need for technology in our music classrooms. This study helped identify the successes and failures of a popular music technology that we could integrate into our classrooms. The participants of this study were 5 music students from my school located in the northern United States. This research was conducted to assist other educators in incorporating music technologies into their classrooms. This helped give insight to new educators as they can see what has already been done by their predecessors.

Introduction

Music educators are always looking for new technology to incorporate into their classroom. The applications educators incorporate into their classroom must be engaging and motivating for students. This study aims to address the problem of the need for technology in our music classrooms. This study will help identify the successes and failures of a popular music technology that we could integrate into our classrooms.

Many Music educators are interested in incorporating technology into their classrooms. According to Jenine Brown "numerous excellent resources for instructors looking to adopt NSM into their own classes include a wiki that describes ways to incorporate it into the undergraduate aural skills and theory curriculum, an active Facebook group of educators using it, and a helpful SmartMusic online service desk and phone support staff" (Brown, 2020 p. 1). This study shows that Music educators are interested and would like resources surrounding music technologies. In the Northeastern region of the U.S. area many schools are looking to incorporate technology applications as well. The Music educators at School A have been interested in incorporating this new technology but the first need is to investigate if this application is useful for the students. The purpose of this qualitative method study was to discover music students' perspective about music technologies in the classroom and how these technologies might influence student's engagement and motivation in chorus class.

Background of the Problem

As an educator you should always be looking to evolve your curriculum and find new ways to motivate, engage and educate students. Sight-Reading Factory is an application that has been in the music education space for quite some time. This study came about when I noticed as students got older, they would tend not to be as interested in the traditional way of learning music. According to Danso et al. (2021), "Historically, technology use in the music classroom has been associated with IT from broader society, as computers and, in particular, MIDI (musical instrument digital interface) sequencing stimulated a musical revolution." (Danso et al., 2021, p. 82). Based on the previous studies today's Music education has always been associated with technology (Danso et al., 2021); however, many schools though still have not fully incorporated many useful music technologies.

Context of the Local Problem

This study was conducted with High School Chorus students at a school in the Northeast of the United States. This study involved about 5 students. Each student does have a background in music, but each student has a varying degree of musical understanding. The school where the study takes place is a one-to-one Chromebook district, meaning each student has their own Chromebook provided by the school. The application will be used in each student's lessons, each student has one lesson every six days. One challenge that may occur during the study is lesson attendance. There are some students that do not come to lessons. This would be a challenge because for them to participate appropriately in the study they would need to attend every lesson.

Description of the Technology

Sight-Reading Factory is an online web-based application. This application is all in one and has many different uses in the classroom. This application can be used to help teach everything from individual sight-reading techniques to intermediate and advanced music techniques. This application was selected because it can do so much for any program and can act as an all-in-one program that can assist music educators immensely.

Purpose of the Study

The purpose of this qualitative action research study is to discover how Sight-Reading Factory affects students' motivation and engagement in my Chorus classes at my school. How does Sight-Reading Factory affect students' motivation, and engagement? Would students want to continue using Sight reading factory in their lessons? Do students enjoy a teacher-led or technology-led lesson regarding sight-reading.

Literature Review

A problem many Music educators face today is engagement and motivation in our classrooms. Many educators feel a need for technology due to the rise of integration throughout their districts. This study aims to see if Sight-Reading Factory being incorporated into my classroom and can increase motivation and engagement in students. This study is important because it can help many music educators get funding to continue incorporating and integrating new technologies into their classrooms. As a music educator, it is always important to evolve my teaching style so that all students' needs are met. The theory of this study is that incorporating technology, more specifically Sight-Reading Factory into my High School Chorus class will help increase student motivation, engagement and performance in music. The engagement learning theory is best associated with this study. Engagement is defined as "The energy and effort that students employ within their learning community, observable via any number of behavioral, cognitive or affective indicators across a continuum. It is shaped by a range of structural and internal influences, including the complex interplay of relationships, learning activities and the learning environment. The more students are engaged and empowered within their learning community, the more likely they are to channel that energy back into their learning, leading to a range of short- and long-term outcomes, that can likewise further fuel engagement. There are many indicators of student engagement. The ones that should be prevalent in this study are effort, attention/focus, reflection, understanding and participation/involvement. The ways this can be seen in this study will be through other educator interviews. Other educators know their students best and using the engagement theory will help each educator see their action research data more clearly.

There are some issues that arise when using the Engagement Theory. According to Kearsley and Schneiderman (1998), "The basic principles of engagement theory just discussed are based upon the teaching experiences of the authors and grounded in well-established learning theories. However, engagement theory has not been subjected to empirical test. Each tenet of the theory needs to be investigated and examined via research or evaluation studies" (p. 22). They also state "With what curricula, disciplines, or age groups is engagement theory most/least effective? What skills do students need in order to effectively participate in collaborative activities?" (Kearsley and Shneiderman 1998, p. 22). The questions these two are asking are relevant and must be taken into account for this study to be successful. Most of these questions can be easily answered in regard to my purposed study. Students do need to be able to effectively use the application for this to be successful which means educators must also be trained. Many educators in my county have already become familiar with the technology in question. To answer the question Kearsley and Shneider ask, "What kind of student evaluation methods are most appropriate to the application of engagement theory?" (Kearsley & Shneider 1998, p. 22). For the engagement theory to work students must be engaged with the technology you are studying. Educators can use a student questionnaire to not only check for understanding but also gauge the engagement of the application. Sight Reading Factory is unique because it not only is engaging but it can also be a form of formative assessment for students, and this can be used to help check for students' progress throughout the study. According to Kearsley and Shneider (1998), they also state that collaboration is an important aspect of the Engagement Theory. This can be seen in this study because the collaboration is happening between other educators from different schools. This helps give a unique outlook into how each school is using technology and if demographics maybe play a role in students' learning as well.

As a music educator post COVID-19 I can clearly see students not engaged with what we are learning in the music classroom. This specifically happens during chorus or other large ensemble classes where it might be difficult to engage every student in a 50-student class. The premise of this study is to interview educators to see the effect of music technologies on student engagement and performance.

The relationship between technology integration and music learning has been examined by many studies. For example, Serra-Marin and Berbel-Gomez (2021) argued incorporating technology into classrooms was not a new concept, since the new generations of students had grown up in a digitally rich environment. Mehdinezhad (2011) maintained that technology provided a source of interactive tools for academic purposes (e.g., note-taking, participation in discussion forums, access to additional resources, software and applications) and facilitated student– student and student–teachers interactions. However, the actual use of these technologies for academic purposes is under ongoing debate. It is not yet clear whether the constant use of technology facilitates or hinders learning experiences and academic performance (Serra-Marin and Berbel-Gomez, 2021). This study explores Sight-Reading Factory from the student's perspective. This perspective gives helpful insight to educators looking to incorporate this technology into their classroom.

The first theme to note is student engagement and motivation when technology is incorporated into the classroom. Engagement and motivation are important as stated by Serra-Marin and Berbel-Gomez "motivation and engagement are fundamental factors of the teaching and learning process" (Serra-Marin & Berbel-Gomez 2021, p. 159). This is key to understanding why the engagement and motivation of students in the music classroom is important. When students are engaged in the classroom performance increases. When students are motivated, they will continue to want to learn more thus creating more background knowledge. Incorporating technology into classrooms is not a new concept according to Serra- Marin and Berbel-Gomez "The new generations of students has grown up in a digitally rich environment. However, the actual use of these technologies for academic purposes is under ongoing debate. It is yet not clear whether the constant use of technology facilitates or hinders learning experiences and academic performance." (Serra-Marin and Berbel-Gomez 2021 p. 160) They also state "Research suggests that technology provides a source of interactive tools for academic purposes (note-taking, participation in discussion forums, access to additional resources, software and applications) and facilitates student– student and student–teachers interactions. Thus, it is common to think that it can also encourage their engagement (Mehdinezhad 2011). However, although much has been written about student engagement and the use of technological tools in the classroom, there is not much research done on the intersection of the two (Rashid and Asghar 2016). Thus, the essential question posed in this research is: Does the use of technology as an educational tool lead to greater student engagement?" (Serra-Marin and Berbel-Gomez 2021 p. 161). Technology can be a tool for these school districts to help engage students and improve student learning in the classroom. The study conducted by Serra-Marin and Berbel-Gomez found that "what can be observed is that although the use of technology in the classroom had its role in increasing student engagement in the experimental group, it could not be concluded that the difference in the control group was solely due to the lack of intervention" (Serra-Marin and Berbel-Gomez 2021 p. 169). By lack of intervention Serra-Marin and Berbel-Gomez mean "This is because the use of these resources must always be accompanied by efficient methodological and pedagogical principles and a joint effort by teacher" (Serra-Marin and Berbel-Gomez 2021, p. 169). The effectiveness of technology is not based on the technology but on the teacher incorporating it. The teacher must effectively inform students on how to use technology incorporated. Serra-Marin and Berbel-Gomez found that when both the technology and the teacher are effective in incorporating technology "In this case, the experimental groups had higher values in all the dimensions of engagement that were studied, compared to the control groups that received a more conventional method of instruction. On the other hand, there was more dispersion in the responses of the control group than in the experimental group, showing that there was more agreement in the group where an innovative educational experience was applied" (Serra-Marin and Berbel-Gomez 2021, p. 170). As you can see, when technology is incorporated into a classroom effectively it can change the way students learn. This study found that student performance not only increased but their engagement and responses increased as well. Technology plays a major role in the classroom today. Cetin uses Class Dojo to assist educators by keeping students engaged. Cetin finds that "it is seen that students' affective behaviors are positively affected in a broad sense. In addition, students express more positive opinions about trying to show positive behavior (N = 164, 79.6%). This suggests that the practice is effective in terms of developing positive behavior. In general, students expressed a positive opinion about the Class Dojo application's increasing their motivation (N=127, %61.7) and effort (N=164, %79.6)" (Cetin & Cetin 2018 p. 93). As you can see Cetin found that using Class Dojo helped students stay more motivated and engaged during class time. Cetin also found that "When the average scores are taken into consideration, it is revealed that there is a significant difference in favor of the lower grade levels. According to the Tukey multiple comparison test performed, 5th, 6th and 7th grade students have more favorable opinion on Class Dojo than 8th grade students. This may be due to the fact that 8th grade students are involved in a more internalized transition period at the transition to the level and an exams-oriented system, not skill-based. It can be said that the lower grades are better adapted to application, and positive opinions increase" (Cetin & Cetin 2018, p. 94). This shows that even though the application saw a positive increase as a whole in the older grade levels the application did not help as much as the lower grades. I agree with Cetin and Cetin where the application is better suited for the lower grades because older grades might find them "kiddish". When incorporating technology into a classroom, educators/ faculty members must learn how to use it. When an educator is not motivated to learn a new technology, it is less likely to be incorporated even though the school can provide the resource. According to a study by Phan, Paul and Zhu "Table 3 shows a number of statistically significant differences between the faculty's uses of technology in their daily teaching practice and their perceptions of IT. Specifically, faculty whose focus was on using technologies to increase student achievement and retention (IT perc. 2) tended to employ student self-assessment activities and formative assessment activities following shorter lectures. An example would be leading a class discussion focused on a visual/auditory stimulus by using picture, cartoon, graph, or song (Teaching Practice 8) ($p = .015$). On the other hand, faculty who normally used little or no technology (IT perc. 3) in their course tended to lecture the entire time in the class (Teaching Practice 1) ($p = .012$). However, they tended to be more concerned with the students' self-assessment of their beliefs, values, behaviors and collected the information through a survey questionnaire (Teaching Practice 5) ($p = .036$) or devoted their lecture time to recitation or asking questions to check student understanding of material (Teaching Practice 7) ($p = .026$). Faculty who was generally uncomfortable with new technologies (IT perc. 7) tended to show a film or video for the entire class period (Teaching Practice 3) ($p =.040$)" (Phan et al, 2021 p. 9). This study reinforces the statement made above that educators/faculty must be willing to learn about and use new technologies provided. If this is not done the benefits of using technology in the classroom do not happen and students, then become confused and upset with the technology being incorporated. It is interesting to note that educators/faculty members that tended not to incorporate technology used more of a teacher taught classroom environment that was based on checking for understanding more than checking to see what the students knew. This contrasts educators/faculty members that incorporate technology in their classroom. Educators who incorporate technology tend to keep lectures short and tend to have a more student run learning model. This study aims to incorporate technology in an effective way. This means that as an educator I must train myself to be able to assist students when they need help using the application (Sight-Reading Factory).

Incorporating technology into a music classroom could be complicated due to the complexity and inconsistency of music, especially singing. What is meant by the inconsistency is that for a new singer, it is harder to perform at a higher level. Sight-Reading Factory is an application that uses game-like processes to help students achieve more in music. This can be seen in a study by Henry Michele. Henry found that "After experiencing computer-based assessment, equal numbers of participants reported having their opinion change and having their opinion confirmed, resulting in a significant shift, $\chi^2(\underline{2}) = 52.39$, $p < .0001$, in the overall acceptance of computer-based music testing (see Table 2). When asked if they would consider using this program to practice sight-reading, 57 participants responded favorably, and 81 participants responded unfavorably. Positive responses included "easy to use," "makes me better," "makes me keep a tempo," "less nervous," "use it on my own," "more accurate," "gives immediate/visual feedback," "is more challenging," and "can record my own progress." Negative responses included "can't set my own tempo," "just don't like it," "concerned about accuracy," "nervous/uncomfortable," "confusing," "I did bad/usually do better," "I prefer a teacher," "I prefer sight-reading books," "it's OK for band but not choir," and "I don't have access to it." By far, the most frequent response (n = 43) was the inability to set their own tempo as the reason they did not like the program. Nine participants cited the enforced tempo as a positive." (Michele 2015 p. 61). This study gives me insight into how my students will potentially feel about incorporating this application into their lessons. Sight-Reading Factory is an application used to assist students in learning an instrument or learning how to sing. This can be used when students are away from school to further their knowledge of their instrument and assist them with technique. Sight-Reading Factory uses fun and creative ways to keep students engaged and motivated. Sight Reading Factory also encourages a student-taught learning environment where students can learn on their own and gain ownership of their learning.

Methods

This is a qualitative study because this study is mainly focusing on anonymous student interviews and questionnaires. I chose this type of study because this type will give me a chance to see how students are responding to technology through firsthand accounts. This will help me shape my future lessons after the study is complete. Using this method will help me incorporate new technology into the classroom because the student experience is one of, if not the most important aspects to consider when incorporating technology.

Participants & Procedures

The participants of this study will be students in my chorus class. About 15 students in my school's chorus class will be invited to fill out the music technology questionnaire. This questionnaire will ask them questions about Sight-Reading Factory. These questions will include questions regarding their engagement using the application, ease of use using the application, and if they would recommend this application to other teachers for them to use with their students. Three students will also be chosen to complete an interview where I will ask them questions about their experience using the application in a choral lesson setting. This will help give me insight into the student's firsthand accounts using the application.

The data collected will be a questionnaire and student interviews completed by students in chorus from my school. The first step will be a questionnaire to see how engaged the students were during their time using the application. In this first step students will also give a review of each application. The next step will be interviews regarding the success of these applications in the classrooms. Students can include personal experiences in these interviews.

Instrument(s)

These instruments were developed to answer the research questions regarding student engagement in the music classroom. The questionnaire (See Appendix I) will help answer the question of whether Sight-Reading Factory being incorporated into the performing music classrooms will help increase student motivation regarding performing music. The educator interviews [b] will help answer the questions regarding student motivation and engagement because it offers educators the ability to discuss their firsthand experience using these music technologies with students.

Data Analysis

The data was collected through the use of student questionnaires and interviews. There were 5 student participants in this study, each of the 5 students completed a questionnaire but only 3 out of the 5 students were chosen for the interview. This was done to make sure data was collected efficiently and effectively. The steps taken to collect this data where first students were asked to use Sight-Reading Factory in their lessons to help with their sight-reading ability. After three lessons students were then given a questionnaire where they gave their opinions on the application. Next, 3 out of the 5 students were chosen to complete an interview where they can discuss their opinions out loud and explain why they had those opinions about the application. The response bias of this type of study could happen if a student is totally uninterested in sight-reading. According to Creswell and Creswell "Bias means that if nonrespondents had responded, their responses would have substantially changed the overall results" (Creswell & Creswell 2016 p. 254). In this study I did not find bias due to the fact that students were giving their opinions.

The interviews and questionnaires were coded in a way that made it easy to find key phrases for each student. For example, I used motivation as a code to help me see if a student was writing or discussing how the application motivated them. Success and hardship were two others to help me organize how the students felt using the application. According to Saldana "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence -capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldana 2008 p. 3). I made sure to organize the data into easier to find key phrases. This helped me make sure no student information was missed and helped eliminate research bias due to my own negligence.

Results

The student questionnaires led to a lot of great data. For question #1 "Have you ever used music technologies in chorus or chorus lessons? If yes what ones?" Each student responded with "no". Most of the students in the study thought that technology in the classroom is effective and should be used by more teachers. Five out of the five students answered "teacher-led" the question "Do you prefer computer-based or teacher-led learning? Why?" Student C said, "I like teacher-led because it feels more relatable." Student D said "Teacher-led because it's less misleading or confusing."

For question #4 students A and C responded with 3. Student C stated "3, because it (Sight-Reading Factory) can be helpful at times but also not helpful due to its interface. Sometimes it's hard to use." To the same question students B, D, and E responded with a 4. Student B added "I think 4 because it can help with multiple different musical techniques." Student D added "Sometimes the app is impractical but, the immediate feedback helps me figure out what I did wrong."

Question #5 "What advice would you have for other music educators trying to incorporate technology into their classroom." Student A responded with "Start slow and add more later on." Student B responded with "Don't always use it switch it up once in a while." Student C responded with "Definitely use it but don't just use the technology." Student D responded with "don't forget to actually teach with the technology not let it do all of the work." Student E responded with "Make sure to teach while using technology sometimes it's hard to figure out what I did wrong."

Question #6 "Would you want to use Sight-Reading Factory again in your lesson? Why or why not?" Student A responded with "yes because I enjoyed using it." Student B responded with "yes because it showed what went wrong." Student C responded with "yeah, it can be definitely helpful since you can play it back." Student D responded with "yes it actually tells me what I did wrong." Student E responded with "yes but make sure the teacher leads it so I can have help figuring out what went wrong."

Student Interviews

For the student interviews I interviewed three out of the five students. The students interviewed were students B, C and D. Each student answered four questions that revolved around the application Sight Reading Factory and their opinions on using the application. Student B answered question #1 "What did you enjoy about using Sight reading Factory". "I enjoyed the interface and how easy it was to figure out where to go. I also enjoyed how the app kind of felt like a game and helped show me what i got wrong in a unique way. I like that it gave me a grade right away so I could see what I got wrong. I like how I can have the app play with me so it's easier to sing what I got wrong." Student B gave this answer when asked question #2 "I didn't like that after a while the examples became too similar. They all seemed to repeat or looked exactly the same. Some of the difficulty levels also felt off. Some harder level examples felt way too easy while others were really hard. I could not figure out how to change some of the settings like how to have the example change key signatures without having to restart was difficult." Student B gave this answer when asked question #3 "I'd say I was kind of engaged when using it. At times the exercises felt too much the same which made it harder to stay focused. But when I was given more exercises that varied, I felt more engaged and honestly more motivated. Thats what kept me engaged was having the ability to explore different levels of difficulty and adjust my settings to how I wanted them. If the examples were connected to our chorus songs, I might have been more engaged because then I would have felt like I was improving." Student B answered question #4 by stating "I would recommend it for other teachers. The only thing is that I think the teacher has to help with this as well because when I was on my own it was confusing to know why I got a note or rhythm wrong. I could also see other kids improving their sight-reading ability when they use this app. All in all, it was great to use but I think the teacher should also mix in other things to keep class and lessons interesting."

Student C gave this answer when answering question #1 "I really liked using the app. I loved that I could go at my own speed and could set the tempo to however fast or slow I wanted to go. It was fun seeing how fast I could sing an example. I liked getting a grade back as soon as I finished. It made me feel like I was actually completing the work quickly and made me more ready to go on to the next one. I like that I could also do it at home if I wanted to. I like practicing because I might go to college for music so I feel like this would make me a better singer." Student C answered question #2 by stating "I didn't like how repetitive the examples are it made me feel like I could only do about 5 before getting too bored. I wish the interface wasn't so difficult to navigate. It did take me a bit to figure out how to get into an example but once I learned it was easy. I wish they had more chorus examples so I can try to sight read a part. I'm an alto so it would help me out if I can sing against a soprano voice." Student C gave this answer to question #3 "Yes, I felt engaged using Sight reading factory because I could go at my own speed. This helped me out because I could slow things down and practice at my own pace. I was able to also try out new levels and add in new rhythms and pitches which made it feel less repetitive. Yes, I would say I felt engaged." Student C gave this answer for question #4 "I think other teachers should use it because it can help with multiple music things and also improve our sight-reading ability. I think when it showed me what I got wrong it definitely helped me see what I did wrong. I was also able to work at my own pace, which helped out a lot, especially on the harder levels. I think teachers should also switch it up sometimes though and not always use it to help make things interesting."

Student D gave this answer for question #1 "The way it let me know what I did wrong. I like how it showed green notes for the notes I got correct it felt like a game. This helped me figure out what I needed to fix." For Question #2 the student answered "I did not like the way to get to the sight reading. It was so hard to figure out what to click and it took a lot of time. It would be a lot easier if they had bigger buttons to help me see where to click." For question #3 student D answered "Yes, I felt engaged. It felt like I was playing a game which made me want to keep working on my Sight Reading." For question #4 the student answered by stating "Yes, I would I think teachers should use more game like things to help us learn. This definitely helped me learn. I could see this being used in chorus class too with the teacher's help though."

Discussion

The data collected tells me that each student enjoyed using the application. They also felt as though they would like to incorporate the application into their lessons but with one stipulation, if the teacher helps and if it is not solely used in the lesson. The data shows that each student felt engaged while using the application. This can be shown with the students answers to the interview question "did you feel engaged when using Sight Reading Factory." All three students interviewed answered yes to that question. Student C even went further and stated "Yes, I definitely felt engaged using Sight reading factory because I could go at my own speed. This helped me out because I could slow things down and practice at my own pace. I was able to also try out new levels and add in new rhythms and pitches which made it feel less repetitive. Yes, I would say I felt engaged." Student C enjoyed the customizability of the application, they also enjoyed the way the customizability led the examples to feeling less repetitive. This is a plus for

Sight Reading factory, it is important to give students the power to change the way they learn, and this quote shows this to the fullest. On the other hand, Student B stated "I'd say I was kind of engaged when using it. At times the exercises felt too much the same which made it harder to stay focused. But when I was given more exercises that varied, I felt more engaged and honestly more motivated. That's what kept me engaged was having the ability to explore different levels of difficulty and adjust my settings to how I wanted them. If the examples were connected to our chorus songs, I might have been more engaged because then I would have felt like I was improving." As you can see the repetition of the examples was a hindrance for Student B. Student B also gave the suggestion of sight-reading choral pieces through the application. This can be done I think, showing them how to get to that portion of the application would have helped alleviate these issues from Student B. The research question "Can Sight Reading Factory improve students' motivation and engagement can also be seen with the students answers to question #6 of the questionnaire "Would you want to use Sight-Reading Factory again in your lesson? Why or why not?" All five students questioned answered that they would like to use Sight Reading Factory again in their lessons. This increase in motivation and engagement can be seen in other studies as well Serra-Marin and Berbel-Gomez state "Research suggests that technology provides a source of interactive tools for academic purposes (note-taking, participation in discussion forums, access to additional resources, software and applications) and facilitates student– student and student–teachers interactions. Thus, it is common to think that it can also encourage their engagement." (Serra-Marin and Berbel-Gomez 2021 p.161). As you can see, this study shows that student motivation and engagement improved during this study.

During this study I also realized that students enjoy using technology in class. All students in class mentioned that technology is useful, but lessons should still be teacher-led and not be totally focused on technology. It is interesting to see students feel this way, especially in the technology driven age we live in. This can be seen through their answers to question #2, five out of the five students answered "teacher-led" the question "Do you prefer computer-based or teacher-led learning? Why?" Student C said, "I like teacher-led because it feels more relatable." Student D said "Teacher-led because it's less misleading or confusing." I noticed that my students felt less confident when using the application by themselves. Students were having issues with technique and had a hard time understanding why the certain notes they sang were flat or sharp. Some students also had a hard time fixing rhythms in the examples. As you can see, this study shows that my students enjoy a teacher-led approach to lessons but also enjoy it when technology is used to enhance their learning not supplement for the teacher.

Lastly, I wanted to see if students would want to continue using Sight Reading Factory in their lessons. I found that students want to use Sight Reading Factory again, but they do not want the whole lesson to revolve around the application. Students in my class enjoyed using the application but missed the teaching aspect of the lesson. This can be seen in students answers to question #6 of the questionnaire. Specifically, student E answered with "yes but make sure the teacher leads it so I can have help figuring out what went wrong." This shows that students enjoyed using the application but had a hard time figuring out what they did wrong. With a more teacher-led approach to using this application students would be engaged and motivated to continue to use the application and improve their sight-reading ability.

Action Plan or Recommendations

I plan on continuing to use Sight Reading Factory with my students. This study taught me that if incorporated with my teaching methods it can be engaging for students. This is important because sight-reading can be a little monotonous. This study also taught me that teaching students how to effectively use the new application you are trying to incorporate is important. Many students in my study mentioned that the interface of Sight-Reading Factory was a little hard to navigate at first, but their experience improved as they learned how to use the application through experience. I feel as though many of these issues can be helped if I did a better job going over the interface and how to navigate the application.

If other educators plan on incorporating Sight reading Factory into their lessons, I recommend them to take the time to teach the students about how to use the application. I would also recommend that you supplement the lesson with other musical work, maybe only using the application to go over one or two sight reading examples as a warmup. Many students mentioned that they enjoyed teacher-led lessons and would only like technology incorporated if it enhanced the teaching. This showed me that students do not want a totally technology led lesson, they still want the teacher to explain certain techniques or concepts to them.

Significance

This research is important because as a Music educator I am always looking for ways to improve my teaching methods. This study would help me to understand how I can effectively incorporate technology and will help me examine the student experience while I am incorporating that technology into my classroom. My students becoming more motivated and engaged with music would help my class perform a more challenging repertoire and would overall help the students' performance ability improve.

This study investigated a technology that can be used universally by every school that has a music program. Locally this study can be used as a template that other educators can use to help convince their schools that Sight-Reading Factory is important and can help their students become more engaged and motivated in their music education. There are not very many studies out there involving this topic and technology so in theory this could motivate others around the nation to do the same and incorporate Sight-Reading Factory. Music educators benefit from this study because they can use this study to help them convince schools to purchase the technology to incorporate into their classrooms. Finally, students benefit from this study because with the incorporation of this technology they have the potential to become motivated to learn music and hopefully want to take it further than just High School Chorus or Band.

Conclusion

Music educators are always looking for new technology to incorporate into their classrooms. The applications educators incorporate into their classrooms must be engaging and motivating for students. This qualitative action research aimed to answer the questions: does the use of Sight-Reading Factory improve a High School chorus students' engagement and motivation? Would students want to continue using Sight Reading Factory in their lessons? Do students enjoy a teacher-led or technology-led lesson in regard to sight-reading? This qualitative study focused on anonymous student interviews and questionnaires. This gave the students an open and free space to give their honest opinions about Sight Reading Factory. Their responses gave us insight into how well Sight-Reading Factory can be incorporated into my classroom. As you can see, many students enjoyed using Sight Reading Factory and would be open to using it again in the future. Students are appreciative of the technology but would still enjoy a teacher-led lesson because it can help them figure out what they did wrong faster and more effectively. This action research showed me that students are open to incorporating technology and Sight-Reading Factory is an application that can be used to help increase your student's motivation and engagement in regard to sight reading in a choral classroom. I would highly recommend other music educators to incorporate Sight Reading Factory into their classrooms. As educators we are always looking for new ways to engage and motivate students in our classroom and Sight-Reading Factory fits that mold and gives educators the power to effectively teach sight reading in their music classes.

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Appendix I

[a] Student questionnaire.

Have you ever used music technologies? If yes what ones.	

<table>
<tr><td>Rank Sight Reading Factory based on how engaged you felt througout the lessons completed.</td><td><table><tr><td>Most Effective</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Least Effective</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Do you prefer computer-based learning or teacher-led learning? Why?</td><td></td></tr>
<tr><td>On a scale of 1 being least effective to 5 being most effective, how effective was Sight Reading Factory at teaching your vocal music sight reading compared to a teacher-led method?</td><td></td></tr>
<tr><td>What advice would you have for other music educators trying to incorporate technology into their classroom?</td><td></td></tr>
<tr><td>Would you want to use Sight Reading Factory again in your lesson? Why or why not?</td><td></td></tr>
</table>

Appendix II

[b] Interview Questions

Student number:

1. What did you enjoy about using Sight Reading Factory?

2. What did you dislike about Sight Reading Factory?

3. Did you feel engaged using when using Sight Reading Factory?

4. Would you recommend more teachers use Sight Reading Factory with their students? Why or why not?