Improving Student Reading Fluency Scores through Music

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Abstract

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Due to the controversial nature of previous research it is unclear whether music has positive or negative effect on cognition. Previous studies tested different styles and tempos of music, and have found that songs with faster beats distract learning. There have been numerous studies and each study refutes another study. Research has been done on the effects of background noise and its effects on student learning where noise has been found to be a hinder on learning. In the classroom students that struggle with fluency on a daily basis and are being progressed monitored, teachers are constantly looking for new ways to help the students who struggle with fluency.

This capstone was designed to examine how music affects fluency scores in a fourth grade classroom. The teacher in this classroom uses AimsWeb testing to monitor students' improvement in fluency throughout the school year. The students listened to music in their classroom on a daily basis when they were working. Each student was either identified as a visual learner or an aural learner.

The writer used jazz music by Vince Guaraldi, from the Snoopy Soundtracks. Each song had a tempo of greater than 120 beats per minute but less than 140 beats per minute. This was a mixed study and used both qualitative data in the form of a learning styles inventory quiz, a reading/music interest survey, and an exit ticket sticky note, and quantitative data from the AimsWeb fluency testing scores.

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Chapter 1 - **Introduction**

Overview

Every state's reading curriculum incorporates components which require students to be able to read; yet everyday students struggle with reading fluency (Ellery, 2010). At the end of the fourth grade year, North Carolina Common Core Standards in reading require students to be able to determine the meaning of words in texts. Not only do these students have to draw upon vocabulary learned in past grade levels but they have to be able to comprehend complex texts and be able to describe and relate to story elements, read nonfictional texts, dramas, and poetry. In order to be successful in comprehension students need to be able to smoothly read the words in front of them. Fluency allows for students to connect the language symbols to understanding without being choppy (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).

There are numerous studies that have been done in the past studying music's effects on intelligences. The Mozart effect study is a controversial study stating that listening to Mozart's music raises one's IQ (Gray & Della, 2007). The Mozart Effect study has been repeated numerous times with conflicting results (Mckelvie & Low, 2002). Researchers have further tested this theory by studying different genres and tempos of music and how they affect different learning processes in children (Schellenberg, Nakata, Hunter, & Tamoto, 2007). Ho (2003) found that music effects children's verbal memory which is a direct link to fluency.

Research suggests that students very seldom read in absolute silence, but they read with background noise and/or listen to music while they read (Maxwell & Evans,

2000). Worley explains, a classroom is a noisy place and students have to learn to work with background distractions (2012). Several researchers on the Mozart Effect (McKelvie, Low, Hallam, S., Price, J. & Katsarou) suggest further research on how background music might affect students cognitive ability in the classroom. The Mozart effect studies show that music has positive effects on cognitive processes.

Problem Statement

Kämpfe, Sedlmeier, and Renkewitz (2010), compared how background music to no music conditions disturbed the reading process, and they found that music had some negative effect on memory; however it had positive impact on emotional responses. They also noted that different tempos and styles of music had a different effect on cognitive processes. Dobbs, Furnham, and McClelland, used background music, background noise, and silence to test if these conditions have an effect on cognitive process. They found that both background noise and music had a negative effect on cognitive process with the exception to extroverts. Their research also noted that music had positive effect on mood (2010).

Other studies have attempted to see if different styles, tempos, and genres of music have an impact on reading tasks. The research has been inconclusive. Steele, and Bass, (1999) tested the original Mozart Effect studies and found the data to be unrepeatable and inconclusive, other researchers like Furnham and Stabc (2002), found that vocal music was more distracting than instrumental pieces.

In Southgate, and Roscigno's (2009) study they tried to prove how music has positive effects on math, reading, and overall achievement. They theorized that students who perform in music ensembles and other musical activities both high school and

elementary that they achieve higher in academics. They concluded that musical students had higher acceptance rates into college, less drug use, and overall higher scores altogether in school. Their data concluded that participation in music has a positive effect on student achievement and further studies of how music affects children's learning needed to be pursued.

Purpose

The purpose of this study is to determine if listening to jazz music will impact reading fluency. Due to the conflicting data of the original Mozart Effect studies and the sensitivity of the effects of background noise on student's cognitive process this study is not designed to reproduce the original Mozart Effect study, but to enhance the original concept and tackle the notion of background distractions on the learning process. Research explains that music students tend to score higher in reading scores and highest in verbal SAT scores (College Board, 2010).

Research Question

Music and background noise has been found to affect student's learning behaviors. How does changing normal classroom background noise to adding music affect fluency testing? How can moderate tempo jazz music affect reading fluency scores in elementary aged students? Will changing the reading condition show a change in reading scores? This study is being conducted to assess jazz music's effect on student's fluency capacities.

Description of Community

According to the counties Chamber of Commerce the community has slowly grown over the years, but is moving from a rural to suburban setting. The county is

516.23 square miles with a population density of 63.06 per square mile. Caterpillar and

Drake Software are two major employers in the county employing over 540 employees.

The county is considered a major tourist area, including gem mining and hiking. Because

of the natural features of the county; it is designated as an Appalachian Trail Community.

The county has seven fire departments, two hospitals, and one urgent care facility

Franklin Chamber of Commerce, 2012). The county has approximately 32,395 full time

residents; 97% of the population is Caucasian, 2% African American, 1% other (Asian,

Indian, or mixed). 74.2% of the community owns their own homes with an average of 2

people per house. The median household income is $38,653 and 18.3% of the population

fell below poverty rate (U.S Census Bureau, 2013), 11.3% of the population or around

1,813 residents are unemployed (Casey, 2012).

The district teaches around 4,400 students with a total of 11 schools (Macon

county schools, 2012). The district currently has four elementary schools and one

intermediate school, two high schools, one early college program, and one alternative

high school. Two of the four elementary schools, the middle school, and the high school

failed to make AYP in reading (Department of public instruction, 2012). In the

2011/2012 school year 65.2% of the district's students were enrolled in the Free and

Reduced Lunch Program (Casey, 2012).

Description of Work Setting

There are 350 students enrolled in the study school. 69% of the student population

at the school is enrolled in the free or reduced lunch program (Find the Best, 2013). The

study school has four classrooms per grade level and one additional first grade and

kindergarten class combined. The school has a total of 31 classroom teachers and all

teachers are fully licensed. The school employs three National Board Certified Teachers and 26% of the teachers have an advanced degree ("Education first: NC," 2012). According to NC school report cards, there is an average of 21 students per fourth grade classroom which is average compared to other schools in the state (Department of instruction, 2012).   There are 256 White, 77 Hispanic, 15 African American, and 2 Asian students enrolled at the study school. 20.9% of the schools population is considered below poverty level (Find the Best, 2013). Every classroom in the school is connected to the internet ("Education first: NC," 2012).

64% of the schools tested students in reading (third and fourth grade) scored at or above the proficient level whereas the students in fourth grade tested, scored 64.7% at or above the proficient level, compared to 75.5% of the district's students scored at or above proficient in reading. Only 29% of the Hispanic population passed the reading end of grade testing in fourth grade. The study school received no recognition on performance because it did not make expected growth for the past school year ("Education first: NC," 2012).

Writer's Role

The fourth grade teacher and the music teacher conducting this study have a close working relationship and they meet once a week to discuss strategies to meet the needs of the student's. The writer is the elementary music teacher for grades kindergarten through fifth grade. The writer holds a bachelor's degree in Elementary Education and is also the sixth grade band director and assistant marching band director at the county's high school. The writer will be collaborating with the fourth grade classroom teachers, title one teachers, administrators and PLC's. The writer will be analyzing data, and reporting

the results of the study.

Definition of Terms

Accelerated reader - Research based software reading program that combines book leveling with quizzes to measure reading skills including comprehension and word understanding (Renaissance learning, 2013).

Aimsweb reading/testing - Reading assessment software that works with Responsiveness to Instruction, a tiered system designed as a way to progress monitor students. The program tests students for 1 minute in fluency and creates reports and goals for both the teacher and the student (Pearson Education Inc., 2013).

Background noise – This is the normal sound environment in a classroom setting. Background noise refers to a varying amount of sounds present in a classroom on any given day. It includes but is not limited to sounds such as coughing, whispering, sounds of classroom furniture moving, outside sounds, air conditioner/heater fans, movement of papers, and other varying sounds in the classroom. The amount and intensity of background noise changes constantly (Crandell & Smaldino, 2000).

EOG tests - End of Grade tests that all third and fourth grade students are subjected to in order to "pass the grade level". These are standardized tests produced by the department of education and a means of data to check for growth (Department of public instruction, 2012).

Mozart effect - Many people believed that simply listening to the music of Mozart would raise their I.Q (Ivanov, & Geake, 2003).

PLC - PLC's stands for professional learning communities, which is a small group of educators working together for a common cause. PLC's are away for teachers to share

resources and ideas and communicate with each other (Department of public instruction, 2012).

RTI - RTI stands for responsiveness to instruction and is a program designed to help meet the needs of all students. RTI is setup to be used with progress monitoring so teachers can better differentiate their teaching (Department of public instruction, 2012).

School Improvement Plan - The school improvement plan is a document written by the school improvement team that is required by the Department of Public Instruction. This document explains the how, why, and what each school is focusing on for the current school year (Atkison, 2009).

Tier 1 - Part of the RTI process. Tier 1 children are labeled at-risk and receive interventions for a short amount of time (usually 6 to 8 weeks at the most), during this time these students are closely progress monitored (Department of public instruction, 2012).

Tier 2 - Part of the RTI process. If the student does not respond to Tier 1 instruction these students move to Tier 2. In Tier 2, the student spends longer periods of time in RTI, and the instruction is more intense. The student is also closely progress monitored (Department of public instruction, 2012).

Tier 3 - Part of the RTI process. If a student does not respond to Tier 2 interventions then the third tier is implemented. The student undergoes more intensive interventions and more individual instruction (Department of public instruction, 2012).

Summary

Research claims that music's effect on the cognitive process is inconclusive (Steele, & Bass, 1999). However, music has a positive effect on mood, behaviors and

feelings in both adults and children. Students face issues such as testing anxiety, and attention disorders on daily basis which research has proven that music can alleviate some of these issues, and also hinder these same problems. Even though the Mozart Effect study has been inconclusive (Southgate, Roscigno, 2009) data has shown that that different types of music have different effects on the cognitive process (Furnham, Trew, & Sneade, 1999).

Studies like the Mozart Effect and other similar studies are inconclusive. Data suggesting that music and background noise hinder and also help students learning processes leave inadequate information for classroom teachers to make informed decisions on how to use music. Because the data on numerous research studies is so inconclusive, teachers are limited to intuition as whether using music as a daily classroom routine and when teaching fluency is proper or warranted.

The purpose of this study is to test the genre of jazz music's impact on reading fluency. This study is not meant to reproduce the original Mozart Effect studies, but instead to further study music's and background distractions on learning processes. The study also additionally investigates if music's effects change between visual learners and auditory learners.

Chapter 2 - Study of the Problem/Literature Review

Overview

In classrooms everyday teachers are looking for new ways to reach their students. The North Carolina Teacher Evaluation Rubric requires teachers to meet the needs of all students yet so many students struggle with fluency. There are many types of distractions in a classroom and many of these hinder learning. Numerous studies have been conducted on whether music has a positive or negative effect on learning and each of these studies have been contradicted. Therefore this study is designed to test whether jazz music might have a positive or negative effect on fluency reading scores. Discussed in this chapter is problem documentation relating to fluency, music, and background distractions. Included in this chapter is a comprehensive literature review dealing with fluency, music studies, learning styles, and other classroom issues. Finally, a causative analysis section discus the key points of the rationale behind the issues and a complete summary are included.

Problem documentation

Fluency means that a reader reads with correct word recognition, proper decoding and the ability to blend sounds together (Torgesen, Hudson, 2006), these fluent readers read with proper inflection in their voice, and make meaning as they read. These same students who struggle in fluency sound choppy and struggle with comprehension (Reading Rockets, 2013). Even upper elementary school students continue to struggle with fluency. Students who struggle in fluency often are trying to read too difficult passages. If a student has not been exposed to the vocabulary in the writings they may find difficulties in reading the texts smoothly (Torgesen, & Hudson, 2006). According to

Reading Rockets (2013), children need to be exposed and practice reading, if they are missing this component of reading they are going to struggle in fluency. Other researchers suggest that young children who cannot quickly recall facts such as colors, shapes, etc. are more than likely to struggle with fluency and these students need early interventions (Wolf, 2013).   Biemiller (1978) explained that fluency issues happen because students struggle to decode the words and symbols in front of them.

The term "Mozart Effect" refers to the finding that 36 college students who listened to a Mozart sonata scored higher on a cognitive test than without the music. The effect lasted approximately 10 minutes (Mckelvie, P. & Low, J. (2002). This study is highly contested because several researchers were able to reproduce the results and just as many researchers could not reproduce these vary results (Ivanov, & Geake, 2003). Most of the "Mozart Effect" studies have been limited to adults and the music styles were only limited to Mozart's sonatas. Due to so many conflicting studies research claims that music's effect on the cognitive process is inconclusive (Steele, & Bass, 1999).   Ho (2003) found that music effects children's verbal memory which is a direct link to fluency.

Research suggests that students very seldom read in absolute silence, but they read with background noise and/or listen to music while they read (Maxwell & Evans, 2000).   Several researchers on the Mozart Effect (McKelvie, Low, Hallam, S., Price, J. & Katsarou) suggest furthering research on how background music might affect students cognitive ability in the classroom.   Researchers have further tested this theory by studying different genres and tempos of music and how they affect different learning processes in children (Schellenberg, Nakata, Hunter, & Tamoto, 2007). .

Literature Review

Students who are fluent readers sound natural when they read; they aren't skipping words or struggling with sounding out words (Penner-Wilger, 2008). Reading fluency is simply defined as the ability to decode and comprehend text at the same time (NIH, 2006). Fluency is not just the ability to decode and comprehend but is also the skill to be able to read the words, silently or out loud in a text smoothly and without much effort, which makes comprehension possible (NIH, 2001). On the other hand, if a student cannot read the words on the page in front of them accurately and develop meanings from those words then these children are going to be unsuccessful (Stahl & Miller, 1989). When children read a passage and miscue or misread several words in a sentence they are struggling in fluency.

There are many ways to target issues with fluency. Abadiano & Turner (2005), The Partnership for Reading, Reading Rockets website and numerous other researchers suggest different types of activities to strengthen fluency. Student-adult reading is an activity where a student listens to an adult read a passage fluently and then the student repeats the process until they are successful (2005). Reader's theater is an activity where students create a script from a book and then rehearse and perform their drama to the other students. The theory behind reader's theater is the recitation of words from the beginning where they practice to the performance (Reading Rockets, 2013). Choral reading is another form of fluency practice that takes place over several sessions where students read along with a passage while a fluent reader reads the same passage than the student rereads the text (Abadiano & Turner, 2005).

Research states that pushing students too early to try and read quickly can be detrimental to their reading skills and instead of forcing speed, teachers need to encourage their students to read like they speak, if they need to allow the children to go back and fix words that they know is not correct (Hasbrouck, 2008). It is also important to note that fluency is not a developmental stage in reading according to the NIH, students can be fluent on one passage and then the next they may struggle and read choppy and make no meaningful understanding (2001). Students by the end of first grade need to begin practicing fluency and they need to be encouraged to read and reread until what is in front of them makes sense (Hasbrouck, 2008).

Music and fluency have strong relationships. One of the main interventions used to combat fluency issues using the RTI process involve repeated readings (Reading Rockets, 2013). Music in its very basic form is repetition of words and phrases to make a song. In 2013, Rammohan tested this theory by using a karaoke type program which helped raise reading scores. The students became fluent with the karaoke songs much quicker than reading the words alone. Rasinski, (1990) talked about proper interventions of fluency by using repeated readings. There are many forms of fluency interventions and they all require some type of repetition of words and phrases: repeated readings, choral readings, reader's theater, partner reading, and adult modeling (Reading Rockets, 2013). All of these styles of repeated readings could be accomplished by using song. Feierabend a leading trainer in Orff instrumental training uses folk songs and rhymes to teach music and literacy at the same time (2012). Samuels (1997), explained that repeated readings boost fluency scores; it does not matter what form of repeated readings including: singing, poetry, short repeated passages, and games.

Text complexity is a push to make what our students read relevant to their futures and to help our students become more successful when they enter the workforce and college careers (common core).   According to Jones, complex texts are a major indicator whether students will make it in college or not (n.d.).   A study done by the ACT boards stated that only 51% passed the reading benchmark (Varlas, 2012). Varlas further explained that because of this information it is important for students to understand how to handle complex texts and the skill set that is needed to understand these texts (2012). By the time students make it to college there is a huge gap in understanding of complex texts because teachers are not exposing students to more complex texts early on (Jones, n.d.). The common core state standards require teachers to use more complex texts including nonfictional, and the essential standards expect that non-classroom teachers embed complex texts in their teachings. These very same students who are being required to read more complex texts are struggling in fluency.

Background noise is defined as the normal sound environment in a classroom setting. Background noise refers to a varying amount of sounds present in a classroom on any given day. It includes but is not limited to sounds such as coughing, whispering, sounds of classroom furniture moving, outside sounds, air conditioner/heater fans, movement of papers, and other varying sounds in the classroom. The amount and intensity of background noise changes constantly (Crandell & Smaldino, 2000). This noisy classroom environment can greatly affect learning in students.

Söderlund Sikström, Loftesnes, and Sonuga-Barke(2010) found that children with issues such as attention deficit disorder and other types of focus issues significantly benefited from having soft background noise while testing and studying. Kämpfe,

Sedlmeier, and Renkewitz (2010), explained that the data between whether music and background noise cannot really be separated out to test whether it really makes positive or negative changes in learning processes. They however concluded from their research that music has some negative changes on cognition. Furnham, Gunter, and Peterson (1994), conducted a study with TV as the background distracter in comparison to silence. The studied found that when trying to perform comprehension tests, participants significantly performed better in a silent condition than with the TV.

Research conducted by Mullikin and Henk (1985), explored how background music affects reading comprehension. The study was conducted using three different reading environments: no music, classical music, and finally rock music.   Mullikin and Henk wanted to see if music as background noise could be used as an intervention in the classroom to raise comprehension scores. Research shows that the reading setting is incredibly important to a students' ability to learn (Mullikin & Henk, 1985). Mullikin and Henk found that "classical music seemed to outperform the no music and rock music treatment on all grade levels tested" (1985). The no music treatment scores were higher than the rock and roll trials every time. They concluded that no music was a better intervention than using rock and roll. However, for three of the 45 subjects; classical music had a negative impact on reading comprehension (Mullikin, Henk, 1985). Thompson, Schellenberg, and Letnic (2011) conducted a study to test different tempos and intensities of music and the effects on reading comprehension; they found that faster and louder styles significantly lowered reading scores. In 2012, Johansson, Holmqvist, Mossberg, and Lindgren discovered that reading comprehension suffered when an unfavorable style of music was played. For example if a candidate preferred rock music

and they were forced to listen to classical music their reading comprehension scores went down. There are so many genres and sub genres of music it is hard to choose what types of music may help increase performance if at all.

Thompson explained that if music uses temporal process and listening to music does the same thing caution needs to be used when using music as a background simply because one cannot process this overload in information (2011). Rauscher, Shaw, and Ky (1993) found that spatial IQ scores improved when participants listened to some Mozart's music, whereas Ho (1993) found that classical music had no effect on reading comprehension. However, Thompson, Letnic noted that the type of music had a prominent impact on the results; vocal music had the most negative impact compared to instrumental music alone.

Numerous researchers agree that music evokes different emotions depending on styles of music. Some types of music inflict sadness, and others sheer joy. Music can soothe and calm nerves or have just the opposite effect (Juslin, 2008). Before birth, babies grimace when rap music and other harsh forms of music are performed (Sullivan). Many researchers found that music of moderate tempos perform better than slow or fast tempos of music. Most research defined slow tempos as 60 beats per minute whereas moderate tempos were defined as 120 beats per minute. Ting and Karthigeyan found that participants achieved the highest memory performance while the background music was 120 beats per minute but less than 160 beats per minute. Not only did these study participants score higher on the moderate tempo music but their stress rates went down, they took blood pressure readings and heart rate data. Hallam and Price (1997), ran a study where the students took the Nelson Silent Reading test with background music and

they found the music significantly raised their scores.

Tze and Chou (2010), studied different types of music – classical and hip hop to see if these types of music effect comprehension. The result of the study showed that music with a higher intensity such as hip hop is more draining and degrades learning much more than classical music. Cassidy and Macdonald, (2007) found that performance on reading tasks was degraded across with the presence of background sound; music or noise compared to silence.

There are 32 learning style combinations according to Felder & Silverman (1988). However other researchers claim there are different numbers of learning styles. McCarthy (1997), claimed that there are only four different learning styles: Imaginative learners, analytic learners, common sense learners and dynamic learners. According to Fleming's learning style model different learning styles require varied teaching methods to reach each student and keep students motivated. The most commonly used learning styles are visual/spatial, aural/auditory, and physical/kinesthetic (Your child can, 2007).

Visual learners need to see things to understand what they are working on; using things such as charts, graphs, pictures, taking notes etc. Visual learners usually need a quiet place to study ("Studying style: Guide," 2010).
Aural learners are the students that tap into music easily. They typically are good at music and rhythms. Learning rhymes for aural learners are simple and make sense to them. They typically are good at singing or an instrument and beats and rhythms make sense to them. One study revealed that participants who began music instruction before age 5 scored significantly higher on spatial tasks than those who began later or did not receive instruction (Costa-Giomi, 2000).

"A most important characteristic of becoming an effective, caring educator is the ability and commitment to recognize individual learning differences among students" (Knowles and Brown, 2000, p. 65). Wilson (2012), explains that there needs to be further research done on the implications of learning styles. The data is conflicting and there is not enough research to explain how to correctly work with learning styles in the classroom (p. 36). Research states that teachers typically favor one style of teaching: auditory or visual and many students learning styles are not matched with the teacher (Wilson, 2012). Wilson explained that if the teachers teaching style and the students learning style match up then their academic achievement is greater. However it is important to note that teachers need to be careful when using learning styles to not label students as one type of learning style, because it can vary from subject to subject (Scott, 2010). Because classrooms are such a diverse place of learning teachers need to model concepts on all of the different learning style levels (Wilson, 2010).

Causative Analysis

Fluency issues make reading incredibly difficult for those children who struggle with it. When someone is not a fluent reader comprehension suffers and children are unable to make meaning of the text they are attempting to read (Stahl & Miller, 1989). There are many reasons behind fluency issues, but the root of the issues comes from children not being able to decode words properly. These same kids can also handle one text perfectly and then the next text struggle to make meaning. Many researchers explain this phenomenon because children are not exposed to enough texts (Reading Rockets, 2013).

Music's effect on learning is difficult to predict. The original Mozart Effect

studies are inconclusive. Researchers have attempted to recreate the data and fail to replicate it, and then other researchers are able to reproduce the results (Mckelvie, & Low, 2002). Different styles of music seem to have both positive and negative effects on learning. In some studies rock and roll music had a negative effect on learning, but in other studies because rock and roll music is the "preferred type" then it had a positive effect on the learning process (Tze and Chou, 2010). Yet other research found that no matter what kind of music is used performance was hindered in comparison to silence (Cassidy and Macdonald, 2007).

Summary

Children struggle with fluency in the classroom. Not only is fluency an issue, but there are so many different types of distractions in the learning environment that it makes it very difficult for children to learn. The effect of music on learning is controversial and hard to reproduce. Therefore, the purpose of the study is to determine if music; specifically, jazz music has an effect on learning. Music Learning styles in the classroom are important to note because it plays upon the diversity in a classroom. Each child is different and learns in different ways. Teachers need to try to reach all of their students by teaching their lessons in styles. Aural learners need to hear their lessons, they need to be able to move around and can learn in a more chaotic environment. Music is beneficial for the aural learner (Scott, 2010). Visual learners need to see their lessons and they need less chaos in their classroom. For visual learners directions need to be written out and they need a quiet environment (studying style, 2010).

Background noise; the sound environment in a classroom, can be both detrimental and beneficial to learning. Background noise is all of the sounds that are present in a

room; noises such as: sneezing, furniture moving, books turning, erasers scratching, outside sounds that bleed in such as birds chirping, car horns honking, and even air conditioner fans are considered background noise (Furnham, Gunter, and Peterson, 1994). Background noise is a highly researched topic where the results of the data are unclear. Peterson (1994), explained that for adults the background noise level isn't as distracting to children. Other researchers found that different learning styles suffer from higher levels of background noise (Beaman, 2005). There is so much data yet the results are inconclusive.

Chapter 3 – Expected Outcomes and Procedures for Data Analysis

Overview

Since the original "Mozart Effect" study it has been argued as music's actual benefits or harm in raising one's intelligence, or even its possibilities (Mckelvie, Low, 2002). This study is an action research inquiry as it is being used to solve an issue that a school of teachers are trying to address and will be shared and reflected upon. This chapter will cover the design of the study, research questions, the methodology, and a brief summary.

Design of Study

The study is designed as a mixed investigation. A music and reading interest survey was used to gather feelings and attitudes towards reading and music. The survey also provided a background into students prior study habits. The research also compared students identified learning styles from a prior learning styles instrument used by the classroom teacher. This identified the students as visual learners, or auditory learners. Quantitative data was gathered through comparison of AimsWeb fluency testing score sessions from both conditions (musical versus nonmusical).

Do to time constraints in the education system the study is completed within one school year time frame. Because the study is being conducted on a classroom of fourth graders the research cannot follow the students and be revisited when they are in fifth grade; these students will be separated and attending different schools and or be in different classes.

It was impossible to completely eliminate all background noise that the students were subjected to during the nonmusical condition as the students read their fluency tests

in a classroom setting. Outside distractions cannot be eliminated from the study which could affect the results as again the students are in a classroom setting while the fluency tests are being read. Also student movement during the testing sessions cannot be completely eliminated while the AimsWeb testing occurred.

Research Question

Music and background noise has been found to affect student's learning behaviors. How does changing normal classroom background noise to adding music affect fluency testing? How can moderate tempo jazz music affect reading fluency scores in elementary aged students? Will changing the reading condition show a change in reading scores? This study is being conducted to assess jazz music's effect on student's fluency capacities.

Methodology

Participants. The study is comprised of fourth grade students from one fourth grade classroom. The students were randomly selected from the list of students who brought back the consent form. All of the students in this study were leveled Tier 2 and Tier 3 (at the beginning of the school year) of the RTI model; as Tier 1 students are not progressed monitored for fluency at this school (Worley, 2013). Six female students and five male students participated in the study. Three students were identified EC in reading and two students are ESL. Two students are Hispanic, one student African American, and eight students are Caucasian. Five students were considered visual learners, and six students were considered auditory learners.

Instruments. At the beginning of the school year the classroom teacher administered an online learning styles inventory quiz (See Appendix A). The learning

styles inventory quiz was online and the classroom teacher read the quiz to each student and chose the answer that the students said best represented them. The quiz asks a series of questions to identify whether the student is an auditory or visual learner. Once the quiz was submitted a result of auditory or visual learner is displayed.

Before AimsWeb fluency testing began the researcher administered a music/reading interest survey (See Appendix B). The survey asked the student about their feelings on their ability in reading. It also asked the students to describe their favorite types of music, their study habits, whether they study in complete silence, with television, or with music. The survey repeats multiple choice answers with true/false questions to see if the student understands the question if asked in a different form.

AimsWeb fluency testing software was used to get fluency data scores throughout the study. AimsWeb fluency software has the students read a small passage (See Appendix C) for one minute using an Ipad. The tester used a separate Ipad and marks any words misread, or fixed. The data is automatically scored and recorded and displayed in terms of number of words correct and number of words missed. The software adjusts the reading level to the students' abilities and goals (Pearson Education Inc., 2013).

At the end of all of the AimsWeb testing sessions the students filled out an exit ticket/sticky note. The sticky note was given to each student with the question: "Did you like listening to the music while you were testing?" (Appendix D). The exit ticket sticky note allowed the students to share their feelings about how the music made them feel while testing.

Procedures. At the beginning of the school year the classroom teacher

administered the learning styles quiz. Each student came to the teacher's desk and she

asked the students individually each of the questions and instructed the student to choose

the answer that best describes them. At the end of the questions the teachers clicked

submit and a learning style was given on the next screen: either auditory or visual learner.

The classroom teacher recorded the style of each student for future reference.

Before the students started taking the AimsWeb fluency testing the researcher

administered to all eleven students a music/reading interest survey. Each student filled

out the survey on their own with the exception of the three EC students who had the test

read aloud to them due to their accommodations as dictated by their IEP. These three

students sat with the researcher as she read the questions one by one and gave them time

to answer each question. The researcher collected the surveys.

The musical conditions were conducted by having the teacher play a CD with five

different jazz pieces written and composed by Vince Guaraldi, composer of the Charlie

Brown soundtrack music. The music was chosen because the students are familiar with

the music from the Charlie Brown cartoons and have been exposed to the jazz genre. The

music chosen had no vocals, only instrumental. The tempo of the music was moderately

paced music with tempos between 120 beats per minute to no more than 140 beats per

minute. The three songs include "Linus and Lucy", "Sally's Blues", and "Work Song"

(Guaraldi, 2009).

The classroom teacher put the CD player on repeat and pressed play while the

students prepared for the Aimsweb fluency testing. The teacher was instructed not to

discuss the music with the students, nor change the routine she used when she

administers the Aimsweb testing. All eleven students were tested while listening to the

CD. Then the next testing session the teacher repeated the testing but without the musical condition. For six consecutive weeks on Fridays this process was repeated three times with the musical condition and three times without the musical condition for a total of six times per student. If a student was not present for the testing session the teacher continued the process once a week until each student had three musical conditions and three non-musical conditions. After all six conditions had been completed the classroom teacher printed out the AimsWeb diagnostic reports for time frames of the nonmusical condition, and the musical condition to give data that is easily compared.

After the AimsWeb fluency testing was complete all 11 participants were given an exit ticket sticky note. On the sticky note was printed "Did you like listening to the music while you were testing?" Each student was asked to put their honest feelings down on the sticky note and they were also told that spelling did not matter. The researcher collected the exit ticket sticky notes for further review.

Summary

Fourth grade students are subjected to different types of background distractions in the classroom and many of these same students struggle with fluency which these background distractions seem to intensify. It is really unknown what effect music might have on cognitive process therefore this action research mixed study was conducted to determine the effect music has on reading fluency scores for fourth grade students. The students took a learning style quiz, a multiple choice/ open-ended survey, and an exit sticky note, to give qualitative data, and AimsWeb Fluency testing quantitative.

Chapter 4 –Data Analysis

Overview

"Students have to know the sounds, blends, and syllables of letters and words to read words more fluently, with fluency comes comprehension" (Worley, 2013). Students that cannot put these sounds, blends and syllables together cannot comprehend text and are fall behind significantly in reading. Not only is this a problem for students, but other extenuating circumstances also affect students learning. Background noise and distractions in the daily classroom also hinder learning. Music has a controversial effect on cognitive processing and therefore needs to be studied further to help understand its benefits or shortcomings. The purpose of this research is to see what if any affects jazz music might have on the fluency reading processes. According to the school improvement plan, students are struggling with fluency; these fluency issues are the focus of this study. Following the overview are tables and figures that show the exact data from AimsWeb fluency testing using both environments. The tables show AimsWeb scoring in comparison to individual learning styles and the testing settings. A summary of the chapter is also incorporated.

Report of Results

Included in Table 1 is a comparison of the AimsWeb fluency testing scores using both the musical condition and nonmusical conditions. Table 1 shows the students fluency scores, number of words read correctly in one minute, for each condition: musical (m) or nonmusical (n). Each score indicates the number of words correctly read. All 11 students' scores are shown in Table 1. If the student was not present the table indicates it by a *. Both male and female are indicated on the table by a difference in color: pink or blue.

Table 1

Student Aimsweb Fluency Scores Music (*m*) V. Nonmusical (*n*) Conditions

Student:	1	2	3	4	5	6	7	8	9	10	11
m	104	112	87	90	63	70	91	125	76	152	98
n	108	114	119	68	61	87	*	118	79	91	101
m	*	132	105	107	78	90	107	148	86	136	94
n	100	*	124	89	78	83	102	115	*	*	*
m	*	91	*	*	*	*	*	*	64	*	108
n	84	100	116	*	70	64	91	*	81	167	100
m	116	131	101	88	*	92	*	*	82	103	107
n	111	100	108	87	67	99	81	*	103	150	101
m	92	94	102	86	65	*	100	130	84	89	101
n	60	119	108	90	71	68	89	116	68	103	110

*student was not present for testing
Pink=female student
Blue=male student

Student 1, female scored higher on 2 of the *m* conditions and scored lower 1 time

with the *m condition.* Student 1 was not present for 2 testing sessions. Students 2,

female scored lower on the *m condition* 3 times and scored higher 1 time for the *m*

condition. Student 2 was not present for 1 testing session. Student 3, male, scored lower

for the *m condition* for all sessions 4 times and missed 1 testing session. Student 4,

female scored higher on the *m condition* with the exception of one *n condition.* Student 4

missed 1 testing session. Student 5, female was not present for 2 sessions and scored

higher on one *m condition* and lower for 1 *n condition.* One session student 5 scored the

same for both the *m* and *n condition.* Student 6, male was not present for 2 testing

sessions. Student 6 scored lower for *m condition* 2 times and higher 1 time. Student 7

female, missed 3 sessions and scored higher 2 times *m condition.* Student 8, male scored

higher for all *m conditions* and missed 4 testing sessions. Student 9, male scored lower

for 3 of the 4 *m conditions.* Student 9 missed one session. Student 10, female scored

higher for 3 of *n conditions,* she missed 2 test sessions. Student 11, male scored higher

for 2 of the *m conditions* and missed 1 session.

Table 2 shows students' average fluency scores on both musical condition (*m)* and

non-musical condition (*n)* along with the students identified learning styles. The learning

styles are indicated on the table by A: auditory learner, V: visual learner, and EC:

exceptional children's program in reading. The table also includes information if the

student is classified as EC in reading.

Student 1, 2, 4, 6, 7, and 8 averaged higher on the *m condition.* Student 3, 5, 9,

10, and 11, scored lower on the *m condition.* Of the 3 EC students, 2 scored higher on

Table 2

Students Aimsweb Avg. Fluency Score Musical Condition v. Nonmusical condition and Perceived Learning Styles

|	St.1	St.2	St.3	St.4	St.5	St.6	St.7	St. 8	St.9	St. 10	St. 11
Musical avg.	104	112	98.75	92.75	68.6666 7	84	99.3 3333	134. 3333	78.4	120	101. 6
Non music avg.	92.6	108. 25	115	83.5	69.4	80.2	90.7 5	116. 33	82.7 5	127. 75	103
Learning Style	A/E C	A	V	A	V	V/E C	A	A	A/E C	V	V

A=Auditory
V=Visual
EC= Identified Exceptional Child

the *m condition.* All of the non EC auditory (A) learners scored higher on the *m*

condition. All of the non EC visual (V) learners scored higher on the *n condition.*

Figure 1 visually shows each individual student's average fluency score for both

the musical and non-musical condition. The light purple bar represents the non-musical

condition fluency average and the dark purple bar represents the musical condition

average fluency score.

Figure 1   Average Fluency Scores Music Vs Non Music
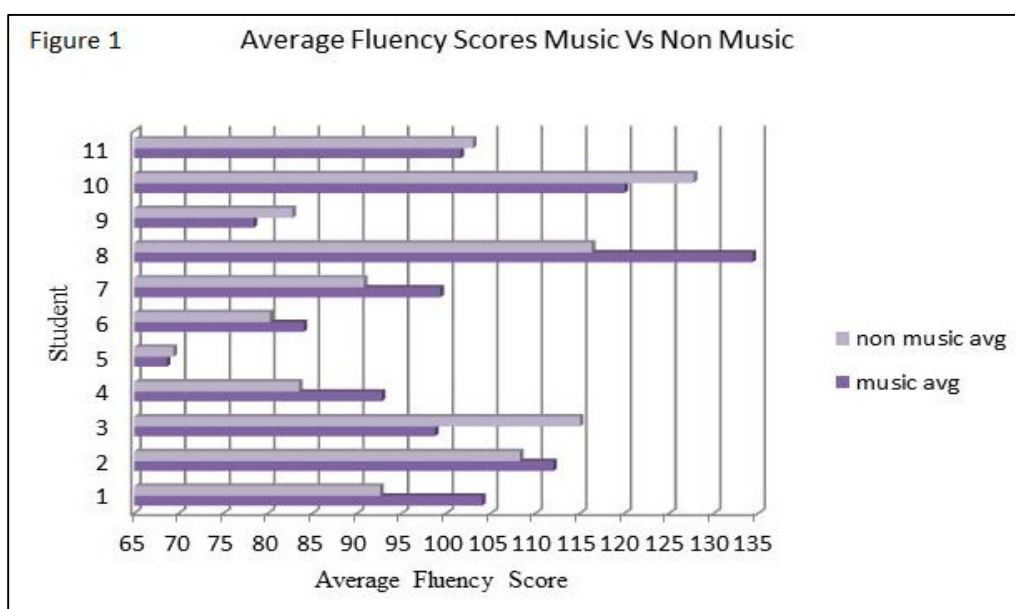
Student 1, 2, 4, 6, 7, and 8 had a higher average fluency score for the musical

condition. Student 3, 5, 9, 10, and 11 had a higher fluency average for the non-musical

condition. Student 5 had the lowest averages on both conditions. Student 8 had the

highest average on the musical condition. Student 10 had the highest average for the

non-musical condition.

Summary

The data included in this chapter shows the differences in learning style scores in

comparison to reading with music and without music. The facts show each individual

student reading scores from the AimsWeb testing using musical and nonmusical

conditions. The data also shows the different learning styles and the relationship between

their identified learning style and their fluency testing score.

Chapter 5 –Conclusions, Recommendations, and Implications for Future Research

Overview

Background distractions and the lack of consistency in music's effects on cognitive process cause a great deal of confusion for teachers when deciding if music is an appropriate tool to use in the classroom. Without clear data teachers cannot be sure if using music to aid in fluency instruction is appropriate. The reason this investigation was designed is to test one style of music, jazz effect on fluency in the classroom. Teachers can raise fluency scores with the use of music as long as the student is an aural learner or has testing anxiety. Included in this chapter are conclusions made from the data, recommendations for ways to use these conclusions, and other ideas for future research.

Conclusions from Results

When looking at the data from the AIMS web fluency testing, it is clear that students who are visual learners suffer negatively from using music while they are testing. Every visual learner student's testing scores were significantly lower when the music condition existed. This could possibly be caused by music accessing different parts of the brain then what visual learners usually use while reading. Even though the students felt on their exit ticket sticky notes that music "did not distract them", the data suggests otherwise. These students, in their own reading surveys, wished they could listen to music during all testing assessments. Could this attitude actually be why their fluency scores suffered? Or did the music actually lower their scores? There are several possibilities that could have affected the student's achievement. The students focus could have waivered because they were more interested in the music they were listening to,

rather than the task at hand. The music may not have been a style they preferred which could have negatively influenced their reading.

After comparing the AimsWeb data the visual learner scored lower on the fluency tests than the aural learner, even though on the reading/music interest surveys those same students felt they are not distracted by music and their exit ticket sticky notes said they were not distracted by the music when testing. So why did the visual learner score lower on the fluency tests than the aural learner, even though they felt they were not distracted by music? Could this be that too much focus was put on the fact that they got to listen to music while they were testing? Even though the researcher did not talk about the music condition this could still be a factor. According to the exit ticket sticky note students enjoyed the music being played while they tested, which means they obviously paid some attention to the music being played. To answer some of the questions, music seems to help aural learners focus and raise their testing scores. In contrast, visual learners' scores dropped with music what impact if any does this have on students learning.

Recommendations Based on Results

Because the students that are considered aural learners scored higher with music playing while they are testing, it leads to the conclusion that music actually raises aural learner's fluency scores. This could be attributed to the music accessing the very same part of the brain as the way these students learn. According to the reading/music interest survey these students all felt that listening to music did not distract them and they wished that they could always listen to music when they are testing. Teachers should hone into the aural learners style of learning.

This study should be repeated with other fourth grade classrooms to see if the results can be replicated before used in other grades in the school. One possibility is to separate all auditory learners and allow them testing and studying with music. Visual learners need the most mundane and quiet environments as possible. Once this study is repeated on fourth grade classes the next step would be to repeat the process with other grade levels.

Due to the results of the study, it can be concluded that music can and should be used with caution when testing. Each student has a unique learning style, and each case should be treated differently. When comparing AimsWeb data it shows that using music as background noise could actually deter and hinder some students and their learning.

Due to the sensitive nature of student testing, it is imperative that teachers pay close attention to the learning styles of their students. Teachers need to know that background noise and music does have an effect on the students; both positive and negative. Teachers need to be aware of the atmosphere they create in their classrooms, and that the environment they place their students in can really affect their learning abilities. The classroom climate of the room is important to student learning. Learning can be affected if the conditions are too noisy, or even if they are too quiet. It is imperative for teachers to place a special emphasis on the environment they place their students in. For the students who are identified as aural learners classroom teachers should allow listening to smooth jazz music while they are studying and taking tests. This can be accomplished by using headphones and pre-chosen music. Teachers who chose to allow their students to listen to music needs to be sure that it is a song with moderate tempos (120 beats per minute-140 beats per minute). Music that is to slow may

relax students to much and cause a negative effect. These will in turn quite the classroom even more because less talking will take place making a less distracting environment for visual learners.

Teachers also need to pay attention to their students IEP's; if a student has known testing anxiety music can help soothe these students and possibly calm their nerves. This knowledge can make a significant difference in a child's learning ability, and testing performance. Teachers can spend a little time finding music that relaxes these students and use them whenever these children are studying and testing.

Implications for Future Research

It would be is suggested to further this study by seeing if students have testing anxiety and the effect music has on their fluency scores. The previous example of the student with testing anxiety who's testing scores increased with music condition is a great beginning to testing this theory. This outcome could possibly be attributed to music's soothing and focusing qualities. Could a certain style of music lesson testing anxiety? To further test this notion a schools EC teacher could use the same methods of music/nonmusical conditions on all of the school's known students with testing anxiety and see if the music makes a difference.

Additional research needs to be done to see which styles of music effect visual learners and aural learners. Further study of learning styles and music effects on these styles seem like another logical step. Expanding upon this exploration of music in testing could show the effect on learning styles such as kinesthetic, aural, visual, and many other types of learners. Using the same procedure from this study a researcher could identify students learning styles and explore the relationships of music to learning styles. Testing

different styles of music and even different tempos of songs could make a huge impact on the fluency scores.

Another direction for investigation that could be done is a year-long study where students who are visual learners are placed in situations where they can read, test, and study with music consistently being played in the background. This way the student is accustomed to the musical condition, and could isolate if the music actually distracts or truly is a learning style issue. This could possibly make a significant difference in their testing results, and could also potentially lead to helping a student who is struggling.

Although end of grade testing does not allow for any interpretation of the testing environment, simulated reading end of grade studies should be done. Could using music or background noise change the dynamics of the test? Using the same procedures from the study EOG practice tests could be used instead of using AIMS web fluency testing. Instead of testing for fluency it would be testing for comprehension.

While it is apparent that music, in fact, can help certain students' testing performance, it needs to be studied further. More extensive testing incorporating music in oral learners is necessary to prove the theories gathered from this study. These tests could be given either individually or in groups across an entire year. Through further research and gathering of concrete data, music could possibly change the face of testing in oral learners, and possibly standardized testing.

Summary

Due to original research studies, it is inconclusive what implications music actually has on the learning process. When students struggle with fluency they become frustrated with reading, and comprehension suffers. Due to the severity of fluency issues

it is critical for teachers to find ways to combat fluency issues as quickly and easily as possible for students to succeed. This study is designed to test jazz music's implications on fluency reading scores.

Many students struggle with fluency which in turn causes issues with reading comprehension. Children are subjected on a daily basis to different types of noise and distractions in the classroom. Research shows that these very distractions hinder learning. Music's effect on the learning process has been found both to be beneficial and detrimental and is very inconclusive. Due to this questionable nature of the research on music's effect on the learning, the purpose of this study is to investigate jazz music's effect on fluency.

Music has an effect on fluency testing which can be both positive and negative. Music as background noise can be a distracter to certain learning styles, but it can be very beneficial to others. In this study, it is apparent that music can have a positive effect on certain students. They key to helping these students is for teachers to be aware of the learning environment they place their students in. In doing so, they can learn the most effective approach to helping their students perform to the best of their ability.

After data was collected and read through it was shown that learning styles and music have a connection. Auditory learners tend to benefit from musical conditions whereas visual learners suffer from musical conditions. From the reading surveys only one student felt that background music was distracting to the reading process and the data matched. Comparing students' fluency scores shows several emerging patterns. Music affects visual and aural learner's different ways even if the student feels that music did not bother them. So the resounding question is with this information how might this

effect classroom teachers and reading?

This shows the impact that music can have on a child's cognitive thinking. This can be distracting to students who learn visually. However, in students who learn verbally, music has a way of cooperating with the brain and allowing the student to concentrate fully on the test in front of them. Through these observations, and further studies, it is apparent that music can have amazing effects on a student's thought process. While it is important to understand that this procedure is not best for all students, it is also important to see that music can help some students in a very substantial way. Music is a very powerful tool that has yet to reach its full potential; this is only the beginning.

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Appendix

Appendix A

Learning Styles Inventory Quiz

What's Your Learning Style

For these questions, choose the first answer that comes to mind and click on a,b, or c. Don't spend too much time thinking about any one question.

Question 1

When you study for a test, would you rather

☐ a) read notes, read headings in a book, and look at diagrams and illustrations.

☐ b) have someone ask you questions, or repeat facts silently to yourself.

☐ c) write things out on index cards and make models or diagrams.

Question 2

Which of these do you do when you listen to music?

☐ a) daydream (see things that go with the music)

☐ b) hum along

☐ c) move with the music, tap your foot, etc.

Question 3

When you work at solving a problem do you

☐ a) make a list, organize the steps, and check them off as they are done

☐ b) make a few phone calls and talk to friends or experts

☐ c) make a model of the problem or walk through all the steps in your mind

Question 4

When you read for fun, do you prefer

☐ a) a travel book with a lot of pictures in it

☐ b) a mystery book with a lot of conversation in it

☐ c) a book where you answer questions and solve problems

Question 5

To learn how a computer works, would you rather

☐ a) watch a movie about it

☐ b) listen to someone explain it

☐ c) take the computer apart and try to figure it out for yourself

Question 6

You have just entered a science museum, what will you do first?

   ☐ a) look around and find a map showing the locations of the various exhibits

   ☐ b) talk to a museum guide and ask about exhibits

   ☐ c) go into the first exhibit that looks interesting, and read directions later

Question 7

What kind of restaurant would you rather not go to?

   ☐ a) one with the lights too bright

   ☐ b) one with the music too loud

   ☐ c) one with uncomfortable chairs

Question 8

Would you rather go to

   ☐ a) an art class

   ☐ b) a music class

   ☐ c) an exercise class

Question 9

Which are you most likely to do when you are happy?

   ☐ a) grin

   ☐ b) shout with joy

   ☐ c) jump for joy

Question 10

If you were at a party, what would you be most likely to remember the next day?

   ☐ a) the faces of the people there, but not the names

   ☐ b) the names but not the faces

   ☐ c) the things you did and said while you were there

Question 11

When you see the word "d - o - g", what do you do first?

   ☐ a) think of a picture of a particular dog

   ☐ b) say the word "dog" to yourself silently

   ☐ c) sense the feeling of being with a dog (petting it, running with it, etc.)

Question 12

When you tell a story, would you rather

⬜ a) write it

⬜ b) tell it out loud

⬜ c) act it out

Question 13

What is most distracting for you when you are trying to concentrate?

⬜ a) visual distractions

⬜ b) noises

⬜ c) other sensations like, hunger, tight shoes, or worry

Question 14

What are you most likely to do when you are angry?

⬜ a) scowl

⬜ b) shout or "blow up"

⬜ c) stomp off and slam doors

Question 15

When you aren't sure how to spell a word, which of these are you most likely to do?

⬜ a) write it out to see if it looks right

⬜ b) sound it out

⬜ c) write it out to see if it feels right

Question 16

Which are you most likely to do when standing in a long line at the movies?

⬜ a) look at posters advertising other movies

⬜ b) talk to the person next to you

⬜ c) tap your foot or move around in some other way

Total your a's, b's, and c's - or if you're on-line click on the submit button below.

Submit   Reset

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Appendix B

Music/Reading Interest Survey

Name:

[Music and Reading Survey]

Multiple Choice: For each of the following questions, circle the letter of the answer that best answers the question.

1. [When I read I like?]

    A. [The room to be really quiet]
    B. [I like to watch TV when I read]
    C. [I like music to be playing]
    D. [It really does not matter to me I can read anywhere!]

2. [Which describes how you feel about reading?]

    A. [I have a hard time understanding what I read]
    B. [Reading is easy to me]
    C. [I hate to read]
    D. [I love to read]

True or False: For each statement, circle True or False.

True	False	1.	[Reading is easy to me]
True	False	2.	[I understand what I read]
True	False	3.	[My parents or someone else at home reads to me at home]
True	False	4.	[Music distracts me when I read]
True	False	5.	[Accelerated Reader Tests are fun]

My Favorite Types of music are, or my favorite songs are ? :

_____

_____

_____

_____

_____

Appendix C

AimsWeb Fluency Reading Probe Sample with Corrections

Jellyfish are creatures found in most bodies of salt water,②m the tropical ⑤© 13

waters of the Caribbean Sea, to the cold, dark waters of the Arctic Ocean. 27

Jellyfish are unusual creatures. When seen in the water, it's hard to believe ③ 40

they are a species from ④ is planet. They look like aliens hanging suspended in 54

water with their luminous layers of tissue and flesh. They have long, curly 67

tentacles and plastic like bubble tops that sway in the sea. ⑤ 78

Although it's difficult to believe, jellyfish have no heart, blood, brain, or gills. You 92

can see through their mostly hollow stomach cavities where their food is digested 105

and dissolved. Jellyfish have no proper eyes or ears. In fact, it's possible to 119

believe that jellyfish are just brainless blobs without the slightest spark of 131

intelligence. Amazingly enough, despite their lack of sight and hearing, jellyfish 142

can distinguish touch, temperature, light, and darkness. They also know the 153

direction and pull of water currents. 159

Jellyfish come in an assortment of colors and shades. The jellyfish livin⑥n 172

cooler waters are generally pale or milky white in color. Many of the jellyfish that 187

live in warmer, tropical waters are often strikingly colored in shades of magenta, 200

scarlet, yellow, and orange. 204

sometimes ⑦

A jellyfish can be as tiny as a thimble, and some can grow to be as colossal as 222

a satellite dish. Most jellyfish can maneuver feebly in the water; however, their 235

poor swimming skills place them at the mercy and whimsy of ocean currents. 248

Some jellyfish ride the ocean currents⑧ne, while other species travel in 260

special groups called colonies. The man-of-war is an example of a highly adapted 275

jellyfish that travels with a colony. The man-of-war serves a special function in its 291

colony. It catches prey with a very long tentacle that can trail as far as one hundred 308

feet through the sea. The man-of-war's prey includes shrimp, squid, and fish. It 323

also produces potent venom that is harmful to humans who may swim nearby, 336

unaware of the man-of-war's clever and stunning snares. 346

Figure 1 Example of an Examiner's Copy Marked with Common Errors

Appendix D

Exit Ticket Sticky Note

Did you like listening to the music while you were testing?