Music: On the Road to Success: Does Playing a Musical Instrument Enhance Skills Needed to be Successful in School?

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Table of Contents:

Introduction:

Imagine sitting in the bleachers at school. It is Friday night, and the varsity football team is about to play their rival school. The tapping of the drumline sounds, and the band begins to play. Trumpets, flutes, clarinets, tubas, saxophones, and more, all blending together to form a harmonious concoction of sound. Think about the effort it takes to learn a piece, or to even play an instrument. Playing an instrument takes a lot of time and dedication, but does it teach students certain skills that will put them over their peers? Being able to play an instrument is a fun activity as well as an impressive skill. However, is playing an instrument just a neat skill, or is it something more? It has been theorized that actively playing an instrument can help a child's academic achievement. Our science fair topic answers the question: Does playing a musical instrument enhance skills needed to be successful in school?

My partner and I have researched multiple articles on the theory that formal music practice enhances a student's academic skills as well as other beneficial skills to be successful in school. The article "Music Lessons Enhance IQ" by Glenn Schellenberg explains an experiment done on the theory. "In the article, I reported results from a study that measured IQ scores before and after a large sample (A' = 144) of 6-year-olds was assigned at random to one of four groups. Two of the four groups received music lessons for a year. One received keyboard lessons taught in a standard conservatory approach for small groups of children. The other received voice lessons with the Kodaly method (Choksy, 1999), a child-centered musical pedagogy that emphasizes singing as well as clapping, hand signs for scale steps, and moving rhythmically to music"(Schellenberg, 2005). From the study, it was concluded that the two groups that received formal music lessons had the higher IQs. The children who participated in drama lessons or no lessons at all had noticeably lower IQs.

In another article, it is stated: "There has been current interest in the relationship between musical experience and intelligence"(Steele, 2005). In this article, "Do Music Lessons Enhance IQ" by Kenneth Steele, a reanalysis is done on Glenn Schellenberg's investigation. "A second topic has been the effect of musical training on cognitive abilities. The argument is that music lessons may have side benefits that

transfer to other academic or cognitive abilities…"(Steele, 2005). Steele conveys his theory that music lessons not only enhances academic skills but other skills as well. Steele goes on to say "Schellenberg argued that transfer effects might be expected because music lessons involve long periods of focused attention, daily practice, memorization of extended passages, and refinement of fine motor skills" (Steele, 2005). From this article, my partner and I constructed self evaluation questions that asked school aged students, age 14-21, to evaluate themselves on their memorization and attention skills.

The article "18 Benefits of Playing a Musical Instrument" by Michael Matthews is where my partner and I conceived most of our questions. The article states that playing a musical instrument benefits a person in at least 18 different ways. Playing a musical instrument increases the capacity of memory, strengthens time management and organizational skills, boosts team work skills, teaches perseverance, enhances coordination, betters mathematical ability, improves reading and comprehension skills, increases responsibility, and causes exposure to cultural history. He goes on to say that playing a musical instrument sharpens concentration, fosters self expression and relieves stress, creates a sense of achievement, promotes social skills, boosts listening skills, teaches discipline, elevates performance skills and reduces stage fright, enhances the respiratory system, and promotes happiness in their life and those around them.

After reading those articles and others alike, my partner and I were compelled to study further on the effect of music on various skills. We wanted to find out if playing a musical instrument is more than just an impressive skill or hobby. Should parents begin putting their children in music lessons to prepare them for a better experience in school? If our hypothesis, music does indeed enhance skills needed to be successful in school, is correct, it will be beneficial knowledge to students and parents so that they can excel in school.

Experimental Design:

To test our hypothesis, we conducted a study involving 100 musicians, and 100 non musicians. The study was done through an online survey and completed by students at Dutchtown High School, Woodland High School, Divine Faith Ministries International, Ohio Christian University, and via email.

The website we used to administer our survey was surveymonkey.com. The link to our survey is: https://www.surveymonkey.com/r/TN8NFLJ. The survey consisted of 11 questions that asked students, ages 14-21, to evaluate themselves on skills we thought were essential to being successful in school. Here is an example of the hard copy of our survey:

Name: _____

Self Evaluation Survey

Circle the answers that apply best to you:
(Note: Scales are from 1-10, 10 being the best score, 1 being the lowest.)
Do you play an instrument? **Yes or No**
Below, rate your time management skills on a scale 1-10:
1 2 3 4 5 6 7 8 9 10
Below, rate your teamwork skills on a scale 1-10:
1 2 3 4 5 6 7 8 9 10
How organized are you on a scale of 1-10?
1 2 3 4 5 6 7 8 9 10
How patient are you on a scale of 1-10?
1 2 3 4 5 6 7 8 9 10

According to your GPAs of last school year, circle all of the letter grades that applied to you in the subjects of Mathematics, Science, English, and Social Studies:
Math: A, B, C, D, F
Science A, B, C, D, F
English: A, B, C, D, F
Social Studies: A, B, C, D, F

How much do you know about other cultures?
Little to none Somewhat Cultural Expert
About how long can you concentrate on one thing that you enjoy?
5 min , 10 min , 15 min , 30 min , 1 hour , more than an hour
About how long can you concentrate on one thing that you do not enjoy?
5 min , 10 min , 15 min , 30 min , 1 hour , more than an hour
About how long before a test can you study and retain most of what you studied?
Night before, 1-2 Days, 3-4 Days, 5-7 Days
Do you take any honors/AP classes?
Yes or No

Variables:

The independent variables of our study are the students that play a musical instrument. The dependent variables are the skills needed to be successful in school. The control group consists of students who do not play an instrument. The constants of our study were the surveys.

Materials:

Our materials included an online survey we created using SurveyMonkey.com. We used Participant Consent Forms for all participants completing the survey. Electronic devices, such as cell phones, computers, tablets, etc., were used for the participants to complete the survey and for my partner and I to analyze the data.

Procedure:

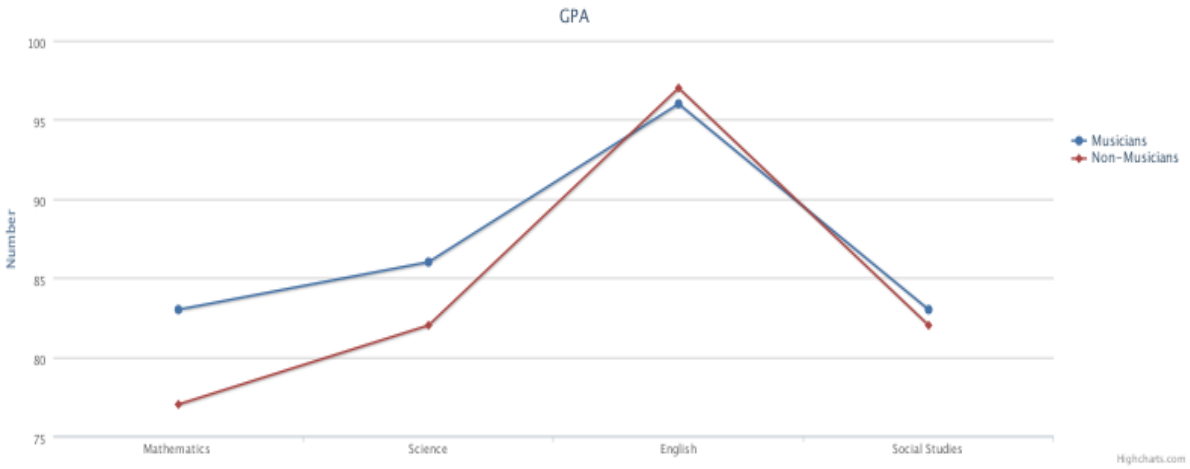
1. First thing to do is construct an online survey using surveymonkey.com.
2. Then, gather consent forms from 100 participants that do not play a musical instrument and 100 participants that do play a musical instrument.
3. Upon the return of the consent forms, distribute the online survey link.
4. Analyze the data of the musicians vs. the non-musicians.
5. Create tables/graphs using the data obtained.
6. From the collected data, formulate a conclusion. Does is support your hypothesis?

Results:

From our study, my partner and I were able to prove our hypothesis that playing a musical instrument enhances skills to be successful in school. The musicians we studied have better organizational skills, better teamwork skills, and better time management skills than the non-musicians we studied. Not only that, the musicians we studied had better grades than the non-musicians we studied in the subjects of math, science, and social studies. Furthermore, the musicians we studied are able to retain information longer as well as focus longer.

Our data showed that 73 out of 100 (73%) of the musicians we surveyed rated themselves a 7 or more out of 10 on their organizational skills. The non-musicians only had 59% rate themselves a 7 or more out of 10 on their organizational skills. 85% musicians rated themselves a 7 or more out of 10 on their teamwork skills, while the non-musicians had 82% rate themselves a 7 or more out of 10 on their

teamwork skills. For time management skills, 61% of musicians rated themselves a 7 or more out of 10. Out of the non-musicians, 58% rated themselves a 7 or more out of 10 on their time management skills.



83% percent of the musicians had an A or B in Mathematics, with 50% having a A. 86% of the musicians had an A or B in Science, with 49% having an A. 96% of the musicians had an A or B in English, with 64% having an A. 83% of the musicians had an A or B in the subject of Social Studies, with 57% having an A.

77% of the non-musicians had an A or B in the subject of Mathematics, with 32% having an A. 82% of the non-musicians had an A or B in Science, 37% having an A. 97% of the non-musicians had a A or B in English, with 57% having an A. 82% of the non-musicians had an A or B in Social Studies, with 50% having an A.

87% of the musicians said they can focus from an hour to an hour or more on something they enjoy. 86% of the non-musicians said they can focus from an hour to an hour or more on something they enjoy. 21% of the musicians said they can focus from an hour to an hour or more on something they do not enjoy. 15% of the non-musicians said they can focus from an hour to an hour or more on something that they do not enjoy. 98% of the musicians rated themselves somewhat culturally exposed or a cultural expert. 94% of the non-musicians rated themselves the same thing. 30% of musicians said they could

remember what they have studied 3-7 days before test. 28% of the non-musicians said they could remember what they have studied 3-7 days before a test. 51% of the musicians rated themselves a 7 or more out of 10 on their patience. 55% of the non-musicians rated themselves a 7 or more out of 10 on their patience. 74% of the musicians take AP or honors classes. 77% of the non-musicians take AP or honors classes.

Conclusion:

Our hypothesis was that playing a musical instrument enhances skills needed to be successful in school. Our hypothesis was supported by our results of this study. We got these results because playing an instrument requires discipline, hard work, memorization, focus, and cultural exposure, it forces musicians to strengthen those areas. These skills are essential for student to be successful in school and later in life.

This research is purposeful because it inspires students to begin playing a musical instrument and parents to enroll their children into music lessons. It also encourages musicians to continue playing a musical instrument. If more students begin playing musical instruments, joining band classes, and taking music lessons, imagine the improvement of students in schools. More students will be succeeding in school, which is a beautiful thing.

This study shows how important music programs are in schools. They are worth the extra money because they created hard-working, focused, organized, diligent students. My partner and I highly encourage student to enroll in a music class and/or music lessons.

Future studies would include seeing how playing a musical instrument affects the brain and which part of the brain it affects and enhances. We could also study other areas playing a musical instrument might improve, such as reading, responsibility, social skills, and even singing.

To improve this study, the study could be extended over a longer period of time for better results. My partner and I could also test the actual ability of a musician versus a non-musician instead of a survey.

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