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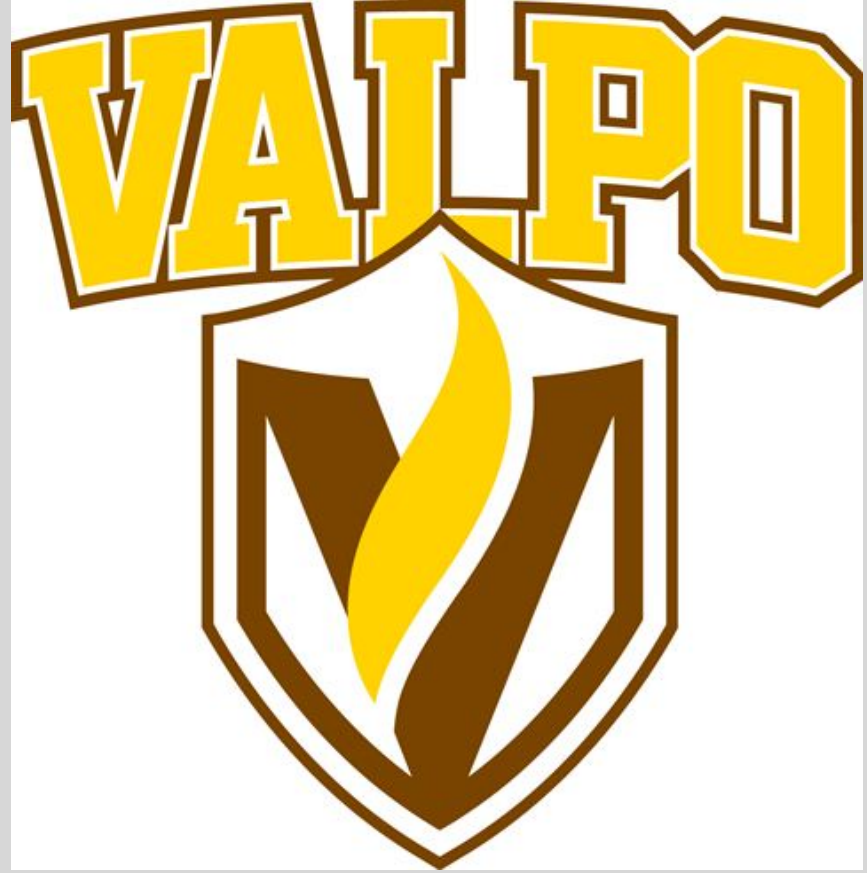


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Adding Music to the Math Equation

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Introduction

Depending on the material covered in a high school math class on any particular day, students may end up with anywhere from 5 min to 35 min to do their homework in class after the teacher is done presenting new information. Unfortunately, students will only stay on task for so long before they begin to talk to their peers about unrelated social issues. Once one set of students begins to get off task, it is not long before a majority of the class is talking or doing something other than their homework. This process results in a lot of class time being wasted by the students who could be asking questions about problems on their homework instead. As a result, it seemed important to look for a solution to this problem of wasted class time. One proposed solution would be to teach more which would result in students not having the time in class to ask questions when they try the problems themselves. Consequently, the only option left is to improve the working environment of students. The proposed solution in this research investigates the effects of playing classical music during in-class work time on the work ethic and environment of the classroom.

Materials

As a precautionary step to avoid offending anyone's views or beliefs, classical music was selected as the music of choice because of its lack of lyrics.

Music was played at a low to medium volume so that students could only hear it well if they were quiet and so that it would not disturb neighboring teachers. The classical music was played on a random mix off of an MP3 player using a few of the teachers computer speakers.

Methods

To avoid students realizing that the music was being played was a variable in the study, music was played in the classroom long before any study began. The desired result from doing so would be that students would not think that the music was anything special and just a regular part of my teaching strategy.

During lecture, the lesson would be taught to the class from the teacher while another teacher took tallies for every time a student asked a question or the teacher made a disciplinary action towards a student. After the class lecture was completed, the time would be noted as the beginning of in-class work time and the music would either be turned on or kept off. Tallies would be kept in the same fashion during work time. (A sample of the tally sheet can be seen below.)

Subject	Period	Length of Period	Music	Disciplinary Actions		Questions		Work Time	
			Yes or No	Lecture	Work	Lecture	Work	Begin	End

Limitations

The data collected was purely based on observations of the class as a whole. There was no research done on the effects music has on individual students.

The study was only 15 school days long resulting in a very small data set to draw conclusions from.

The only style of music used was classical music.

There is no data indicating how well students did on their homework/assignment in the different work environments.

The classes that the data was drawn from were all upper level math courses with less than twenty students.

Work Factor

In order to calculate the effects of change that the music had on a work environment, the use of a single comparable number seemed appropriate. The work factor is a number derived by subtracting the number of disciplinary actions from the number of questions asked in a given work environment. That number is then divided by the amount of time spent in that condition.

This work factor was also calculated for lecture times to have a comparable number that should be consistent whether music is played during work time or not. Unfortunately, the work factor varied by .04 between days with music and days without music therefor it is unclear whether or not the music made the students work factor higher or if it just took advantage of days where students were working hard despite the music.

Conclusion

From the small three week study that the statistics are based off for this research, it is hard to make any definitive conclusions. If you compare the work factors during work time without comparing them to the work factors during lecture, it would seem very promising that music does have an effect on how productive student are with their work time.

Based on the statistics, I would conclude that for a majority of classes, playing music in the background does effect the productiveness of the class during work time. Looking at each class individually reveals that for two of the three classes observed, the work factor was higher when music was played verses when it was not played. 5th hour precalculus was the only class that did not do better while music was played, but their work factors were lower than any other class observed to begin with.

Even though the work factor during lecture should have been consistent between all three scenarios, it was consistent between two of the three. The third work factor could have been thrown off by one day where student were extremely productive during lecture allowing the drastic difference to occur.

Further Research Opportunities

The same experiment that was done in this research for a longer period of time.

Do different music genres effect student productivity in the classroom?

Does playing music in the background during lecture effect students productivity in the classroom?

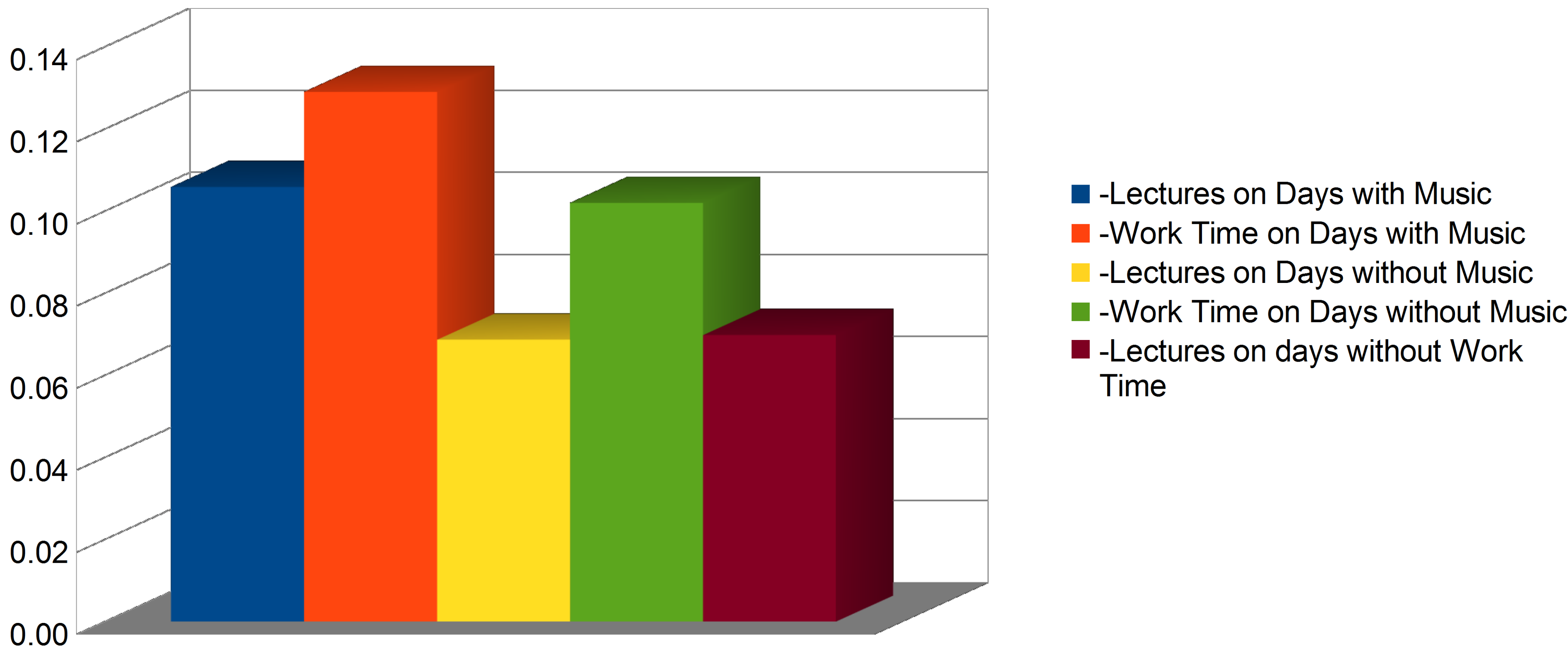
Does the volume of the music played in the background effect students productivity in the classroom?

Contact information

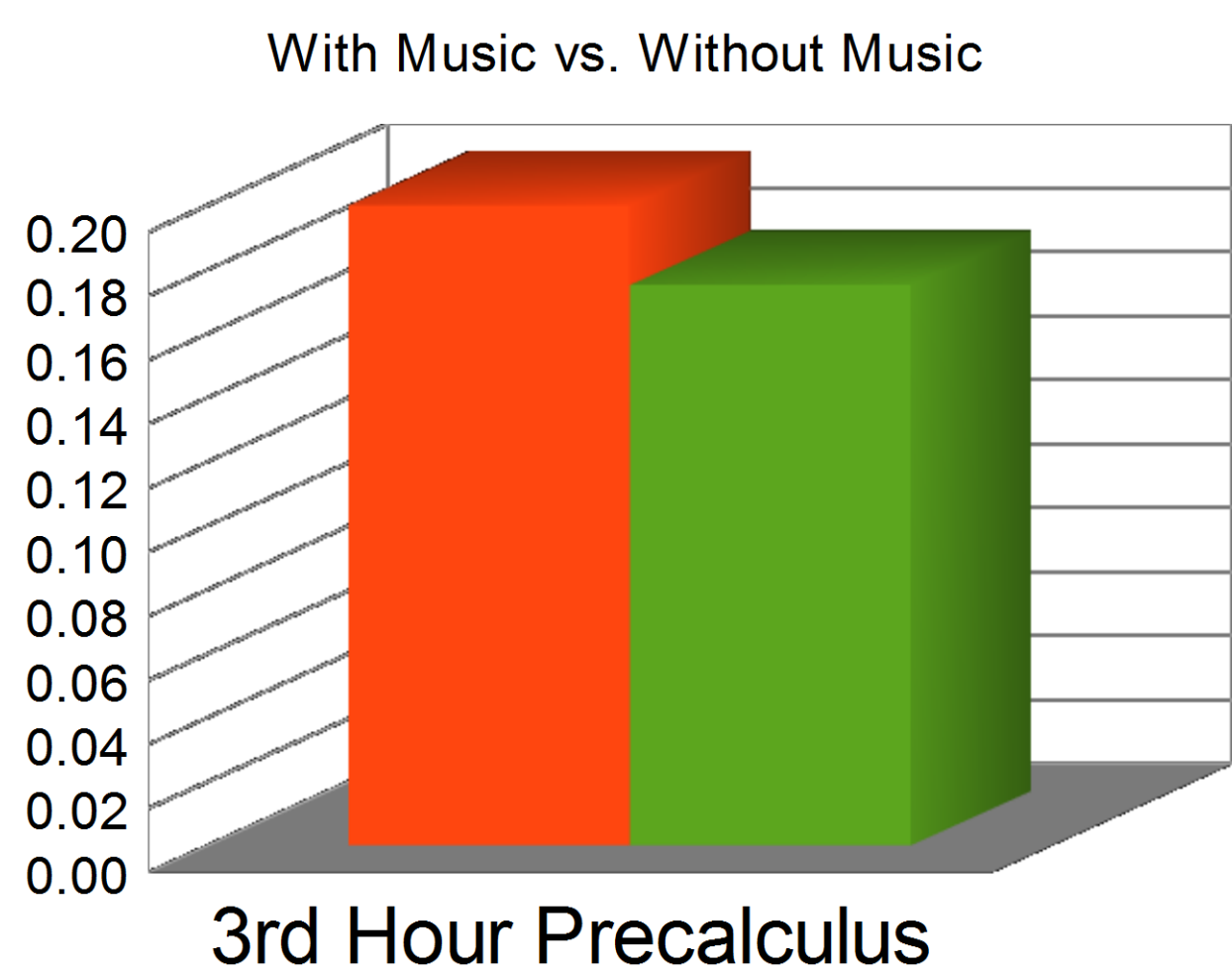
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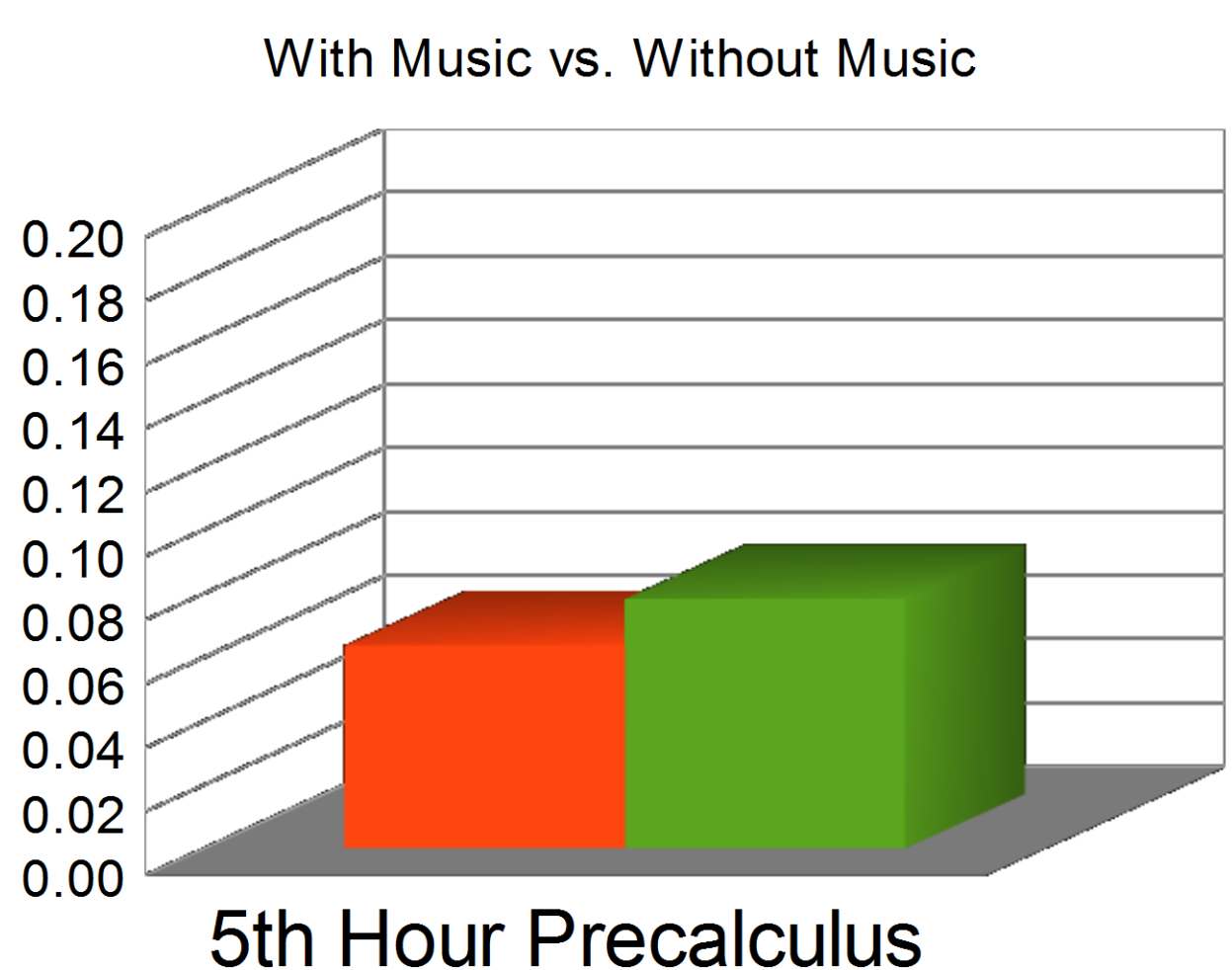
Work Factor



Work Factor



Work Factor



Work Factor

