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Time to Learn: When Classroom Engagement is at Its Peak

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Abstract

The purpose of the study was to investigate how the time of day affects the ability of students to focus and remain attentive in the math classroom and the level of engagement during the class period. The math classes included in this study were Honors Algebra 2, Precalculus, and Algebra 1. Students in these classes were in grades 9 through 12. The study took place over the course of three months. Students were asked to fill out a survey about how the time of day affects their own attention level and their own sense of engagement and observations of the teacher were recorded daily. The research showed that students and teachers feel as if the time of day greatly affects students' ability to concentrate and the 'Time to Learn' seems to be in the mid-morning.

Limitations

This study was conducted in only one school and therefore the results may not be indicative of students as a whole. Also, since these students all attended a private school, there may also have been some outside factors that would change their responses from the general student population of any given high school. The sample size was also a very small portion of the students and the study may need to be expanded to a larger portion of students to achieve greater accuracy.

Acknowledgements

I would like to thank my advisor, Dr. Del Gillispie, for her help and guidance in conducting this research and assembly of the poster. I would also like to thank my cooperating teacher for allowing me to conduct this research in his classroom.

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Research Question

How does the time of day affect a student's ability to concentrate and remain engaged in classroom activities?

Methodology

This study was conducted in four high school mathematics classrooms at the same private high school. The classes that participated in the study included Algebra 1, Honors Algebra 2, and Precalculus. The school followed a rotating schedule and therefore the order of classes, and thus the time of each class, changed from day to day.

A survey was the main form of data collection in this study. The students were asked to respond to seven questions related to their engagement in the classroom. All the questions had choices for the students to select from when responding.

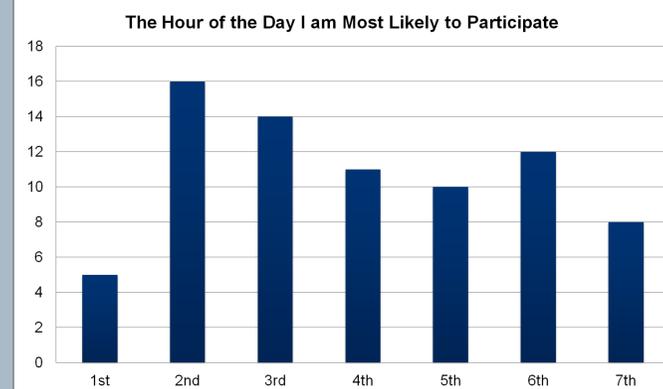
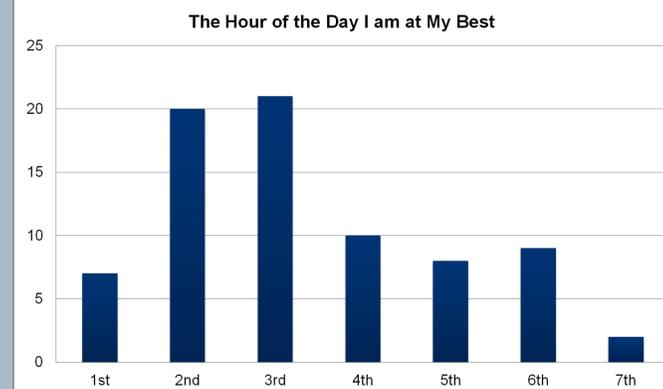
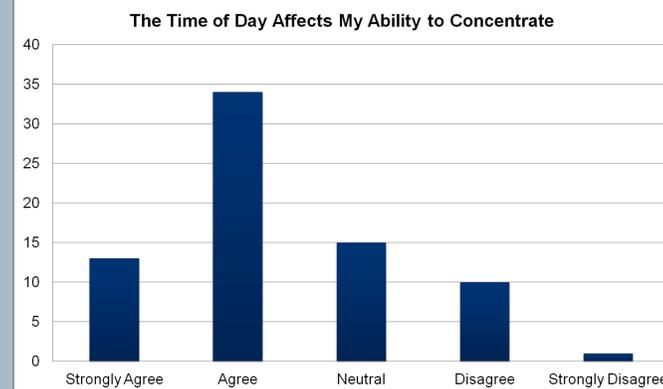
The questions on the survey were:

1. The time of day that I go to math class affects my ability to concentrate and pay attention. (Agree/Disagree)
2. Which hour of the day do you feel at your best academically?
3. Which hour of the day are you most likely to participate in math class discussion?
4. With the rotating schedule, each day of class has a different feel because of the time. (Agree/Disagree)
5. Having math class before lunch makes it easier to concentrate and pay attention. (Agree/Disagree)
6. Having math class after lunch makes it easier to concentrate and pay attention. (Agree/Disagree)
7. I get enough sleep on a daily basis to concentrate and pay attention in math class. (Agree/Disagree)

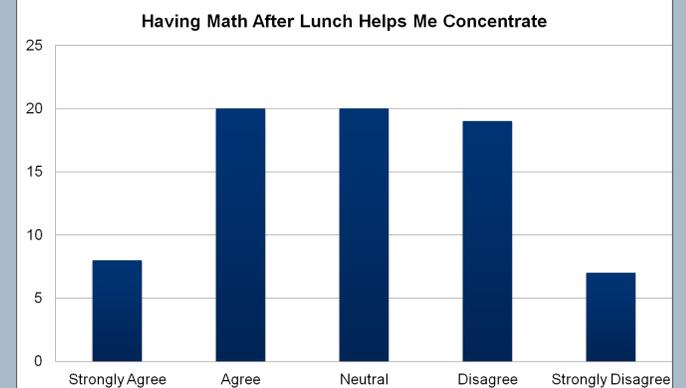
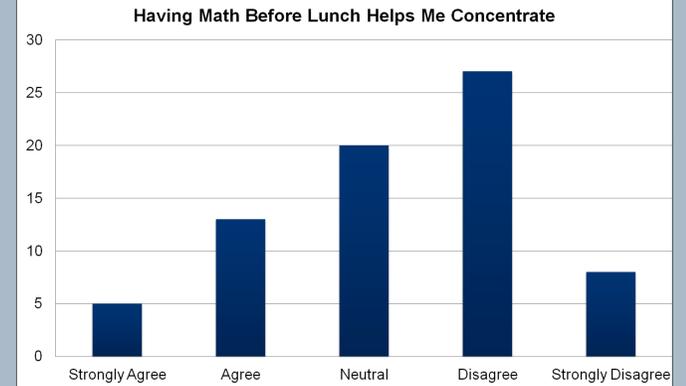
The teacher of these classes also made daily observations regarding the attentiveness and engagement of each of these classes over the duration of the study. These observations were kept in a journal that the teacher wrote in at the end of each school day.

Results

Some of the students' responses to the survey are shown in the following graphs.



Results (continued)



Discussion and Implications

From the responses, you can see that most students feel as if the time of day affects how well they can pay attention. There were mixed results as to what time of day is the best. Most students felt that they were at their best in the mid-morning, however that did not directly translate to participation and the ability to concentrate in a mathematics classroom. Interestingly enough, more students thought having math class after lunch helped them to concentrate. Also of note, is that more students responded negatively about their ability to concentrate before and after lunch. From these results, teachers of mathematics should be aware that students can have difficulty concentrating no matter the time of day.

As an educator, this data shows us that students do have varying levels of attention and concentration throughout the day. However, while some general trends can be found, each student has their own preferences and the teacher must be able to adapt to the individual needs of their class.