Sleep deprivation and how it affects student learning testing. research paper

Profession, Student

Observed problem, why it interests me.

Sleep is a vigorous, repetitive and reversible condition that serves several human being functions such as growth, repair, restoring, and memory consolidation. The process starts from the human brain, and coordinates all the other organs, and cells. This implies that sleep is a physiological, and neurocognitive process. Without sleep, therefore, these processes become vulnerable to impairment (Kerkhof and Dongen, 2010).

It is astonishing that some people would even participate in sleeping competitions that involve some human organs like eyes being active. Remember the sleep competition that involved participants who could stay for longer hours watching movies? Such may be termed as lack of awareness on the effects that such a competition has on human neurocognitive process. Sleep loss has been in record as one of the most outstanding problems in the modern society. Very often than not, people tend to sacrifice their sleep for other activities such as work, finishing assignments, having fun, and much more. This is done without the knowledge that sleep derived people function at a ninth percentile of individuals who are not deprived from sleep.

What amuses me in this topic is that despite these facts being displayed in books, journals, classes, broadcasting stations, and social sites, individuals still continue with sleep depriving acts. The aim of this paper is to provide a review on the effects of sleep deprivation, its effect on learning and academic performance. It provides a finding on the relationship between learning and memory processes with sleep, among students.

Review of the issue.

At such a time when several scholars, educators and psychologists have been involved in testing the relationship that occurs between sleep, memory process and learning, it is essential to have a study that involves the effects that sleep deprivation has on learning, and academic performance. Findings from most studies, on sleep and education, reveal that; students from lower schools to colleges are deprived from enough sleep, and this leads to most of them having daytime sleepiness, which results to lack of concentration (Kerkhof and Dongen, 2010).

Another finding is that the quantity and quality of sleep directly influence academic performance, and learning capacity. It has also been revealed that sleep loss is associated to a procedural and declarative learning. Finally, studies which involved sleep optimization reveal a worsening and a contrary improvement in academic performance, and neurocognitive conditions.

For almost a century, there have been studies that show the beneficial aspect that sleep brings upon memory on human beings, and animals. Recent studies on neurophysiology, cognitive behavior, and molecular genetics, strengthen the idea that sleep plays a critical role in memory, and learning. The extent of this notion, however, still remains a hot debate among psychologists, and scientists. The concern is on which body functions get affected by lack of sleep or on which processes undermine memory consolidation; it remains unclear on whether memory consolidation has any link to sleep, especially on students.

It is well known that the integrity of memory processing and learning is fundamental, and plays a crucial part in academics (Kerkhof and Dongen,

2010). The last few years have been marked by an increasing literature on the relationship between learning, memory and sleep. However, the fact of the matter is, sleep deprivation leads to serious health issues that include high blood pressure, heart attack, heart failure, irregular heartbeats, diabetes, and in extreme cases, stroke. It is indicated that 90% of people affected by Insomnia (trouble falling asleep or staying asleep) are vulnerable to health conditions.

Problem statement.

For a period of time, performances in most schools, colleges and universities have been on decline. There lacks proper prove on the causes of declined performance despite the efforts of educators. Surveys indicate that most students overwork themselves, and have few hours left aside for sleep. This poses a great threat to their concentration, and participation in class. Sleep deprivation has been said to result in low learning and memory capacity, which are the causes of low performance.

Hypothesis.

There are three different hypotheses in this study: first, numerous number of high school students do not receive the recommended nine hours of sleep. Secondly, enrollment of college students reduced the average performance among school students. Thirdly, enrollment of college students has greater effect on sleeping time than it does to high school students. The results were intended to measure how the amount of sleep affects the student’s level of learning, and how to achieve a healthier balance between sleep, health and learning (Gravetter and Forzano, 2009).

Method of investigation and data collection.

Use of structured questionnaire.

The subject of matter in this survey is considered a statewide problem. The data was collected among students from various high schools and colleges, out of a voluntary participation. Information on the quality of participants sleep was essential in self evaluation of the amount of sleep received by every student, per night. Participants were also asked whether the amount of sleep that they received was satisfactory, or they would intend to have more time to sleep. Another consideration on the survey was on early bird courses such as physical education, which starts before normal classes. The final consideration was on the amount of time that students spend on course work, devotion to after school events, and other extracurricular activities that require time.

In order to determine if the students received the recommended amount of sleeping hours, a one sample t-test was used. This compared the mean sleep time recorded in the survey to recommended nine hours of sleep. A two sample t-test was also used in comparing sleep time between students from various high schools and colleges, which were picked at random. A one way Analysis of Variance (ANOVA) was also use in comparing regular sleeps among multiple students. A two way ANOVA was used in testing comparisons between performance in colleges and other categorical elements like race, gender, early bird courses, and grading system (Gravetter and Forzano, 2009).

Analysis and discussion of the data.

The result of this is that students continue to get low grades, which pull the performance of classes down, and eventually the performance of the whole school. Continued sleep deprivation implies that this number continues to rise, and hence the increase in low performance among high schools and colleges in the country. From this survey, it was clear that the hours spent in sleep determine the performance of students. At an age where the minds of the students are active as in high school and college levels, students need to sleep for at least nine hours (Kerkhof and Dongen, 2010). Spending such time in sleep implies that the students get enough time to rest, refresh their memory, and assist their brains in preparation for storage of new data. Few studies have been conducted in measuring the effect that the amount of sleep that a student has on the levels of performance.

Conclusion.

This study did not yield the expected results due to the many shortcomings, but one thing that was clear was that most students do not get enough time to sleep. Scientifically, this contributes to brain impairment whereby one’s ability to solve problem deteriorates, abilities to make decisions are compromised, and it becomes hard to generate new ideas to solve issues. In a class scenario, a student becomes unable to concentrate, capture new ideas, and the memory capacity in the brain reduces (Kerkhof and Dongen, 2010).

In an examination, students lack memory of what has been learnt in class, lack concentration, fail to develop new ideas or develop ideas from what has

been learnt (Kerkhof and Dongen, 2010). This leads to poor presentations and discussions that eventually contribute to low performance. Continued sleep deprivation brings along serious health issues especially at their age. Problems associated with high blood pressure, heart failures and stroke may result. Debate on relationship between sleep deprivation and diabetes is still going on; some scholars do not find any relationship between insulin levels and sleep, while others indicate that lack of sleep leads to lack of insulin in the body.

The general explanation on the relationship between sleep deprivation and student performance relies on two process in brain regulation; cognitive impairments and wake state instability. Sleep deprivation leads to attention lapses, inattentiveness, and decrease in cognitive performance.

Sleep deprivation interferes with brain functioning thus impairing cognitive performance. Individuals differ when it comes to timing, length, and sleep structure. Studies indicate that some students are more vulnerable to sleep deprivation than others. This may explain why no matter how some students deprive themselves sleep to tackle other issues, they still do not have issues with cognitive performance. However, as much as this may work for them, it may only last for a short time. In the long run, the brain cells impair, and such are the people who are affected by serious health issues such as strokes.

The solution to the whole issue lies on adherence to the recommended sleep time. Students should focus on their performance first and drop anything else that consumes their sleep time. This way their sleeping time will not be compromised hence their class attentiveness, and performance.

Reference.

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Gravetter, F. J., & Forzano, L.-A. B. (2009). Research methods for the behavioral sciences. Belmont, CA: Wadsworth Cengage Learning.

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