

Stage 2 Research Project B – 2019

Assessment Type 3: Evaluation

SACE Registration Number:152839J

Research Question: Between the 2 most commonly used study methods, what is the best study method for high school students, regardless of their learning style?

Summary word count (150 max): 149

Evaluation word count (1500 max): 1497

Evaluation

Summary

In spite of teachers' promotion of mind mapping, many of my classmates have chosen to use classic note taking. So, I wondered if there was a superior study method that could apply to majority of the high school population, regardless of their learning style. I decided to limit my research to the two most commonly used study methods to conduct more in-depth research. A survey showed that the two most commonly used study methods are mind mapping and classic note taking. Online articles and scientific literature provided information about the theoretical and actual effectiveness of each study method. An experiment conducted across 16 high school students with different learning styles further supplemented my research by only using high school students. My key findings were presented as an essay, with the conclusion that there is no superior study method due to the influence of learning styles on each method's effectiveness.

Word count: 149 words

Evaluation of research processes

Survey

Using Google Forms, I had created a survey with the aim to better understand the high school population, and the study method that they would be most inclined to use. This was then disseminated to high school students (aging from 16 to 18 years old). In total, I received 92 responses. This survey provided a good gauge of the two most common study methods across the population.

However, the survey did not ask the respondent for any personal information, and did not provide demographics of the respondents. As this survey was completed online, there is no way of being sure that the respondents are current high school students. However, as 89.1% and 98.8% of respondents chose visual approach and note summarization as one of their choices, as compared to the 23.9%, 34.8%, and 46.7% who chose auditory approach, verbal encoding, and buddy system respectively, the results used should be fairly accurate. Moreover, there was a lack of other sources related to the topic, so there was no chance to cross-reference the conclusion. Overall, it was useful as it provided the perspective of members of the public and the study methods they are aware of and use.

Literature Review

Reviewing the various modes of literature was very useful as it provided me different perspectives on the 2 study methods (i.e. mind mapping and classic note taking), by understanding the perspectives of Buzan, the creator of Mind Mapping, high school teachers and various professionals. Being able to use online databases, there were a lot of sources available with free access to scientific journals and articles. A limitation of the process was that many articles were written by the non-scientific population, and had biases towards one method or the other which included Buzan's analysis of mind mapping as the most

superior study method (IMindMap, 2007). Most articles were only able to partly answer my research question by providing information about the different study methods, such as the outline method defined by GoodNotes (2017).

For the scientific literature reviewed, most of these articles only analysed one study method, such as a doctoral dissertation by Michelle Mendoza Nebres (2016) which analysed the effect of using note summarization in studying science. However, some articles provided comparisons between 2 study methods that were more effective in answering my research question such as a study regarding the effectiveness of mind maps as a learning tool for medical students conducted by Wickramasinghe *et al.* (2011). However, as suggested by Farrand, Hussain, and Hennessy (2002), there are other factors that determine the effectiveness of study methods, making conclusions derived from experimentation inaccurate. Lastly, a limitation faced was the lack of free scientific literature that discussed study methods. In spite of this, enough literature was found and gave background, while discerning the theoretical and actual effectiveness of the various methods.

Experiment

I conducted an experiment across 16 17-year-old high school students who were asked to study a set series of new texts across 6 weeks. They had been split into 2 groups, each group made up of the same ratio of males to females, and were tasked to study only using a specific study method (i.e. group 1 studied with mind maps, group 2 studied with classic note taking). All participants were willing and were allowed to leave at any time across the 6 weeks. Before this experiment had been conducted, there were very few scientific articles published that compared different study methods, with only 1 being discovered through my literature review. The conclusion of my experiment was consistent with that of the study. However, limitations of the experiment included the small sample size, so the conclusion cannot be reflective of the entire high school population. The participants were also academically strong, which could have resulted in biased results. Despite this, the experiment was extremely useful as it supported my answer to the research question that neither study method is superior over the other.

Overall Judgement

My self-conducted experiment and the review of scientific literature are more successful than others in answering my research question as the research question is mainly addressing the actual effectiveness of study methods which is best investigated through the use of experiments and scientific studies.

Evaluation of decision in response to challenges/opportunities

Throughout the research process, there have been some challenges and opportunities that have arisen. Making decisions in order to take advantage or overcome these opportunities and challenges were extremely important to make the best use of those chances.

Challenge 1

I wanted to conduct an experiment in order to substantiate my findings from the study conducted by Wickramasinghe *et al.* (2011). I wanted the largest sample size possible and I realised that a long time frame and frequency of participation could be possible deterrents for participants. Determining a time frame and frequency that would give me the best possible results while being the most convenient was a challenge I faced when designing the experiment. I decided to conduct the experiment over the course of 6 weeks, to best simulate long term memory, while holding a session once every week as participants had other commitments as well. Although the time frame did act as a deterrent to some, and the stipulated day for sessions did result in some participants being unable to participate, the number of participants (16) was still large enough for the experiment to be conducted. By being conducted across 6 weeks, the experiment was fairly long term, which provided a good sense of how effective each study method would be in the long run, thus providing insight when answering my research question.

Challenge 2

A second challenge I faced regarding the experiment was finding a method to analyse the data obtained from the experiment. There were many options for me to choose from which included MANOVA (Multivariate Analysis of Variance), ANOVA (Analysis of Variance), and the t-test. These methods were to determine the significance of the group differences from numerical data collected. I decided to simply use the t-test as it was the simplest method and easiest to understand. However, as the participants were of different personalities and gender, the best method would be to conduct MANOVA which would take into account these other variables. By using a simple form of statistical analysis, I limited the data obtained, thus limiting my answer to the research question. However, by using statistical analysis, the conclusion made should still have a degree of accuracy which showed that there was no superior study method for high school students.

Evaluation of the research outcome

In my outcome, I addressed the three parts of my research question by using specific sub-headings that summarized the focus of the paragraphs.

My survey provided valuable information as it identified the two most commonly used study methods as mind mapping and classic note taking, thus helping me address the first part of my research question ('between the two most commonly used study methods'). This provided context for the rest of my outcome. However, the lack of other available sources that were able to substantiate these results could be seen as a limitation, hindering the accuracy of the outcome.

Review of online articles allowed me to address the differences between classic note taking and mind mapping which mainly involved their different structures, where they are rigid and flexible respectively, in my outcome. This information also helped determine the theoretical effectiveness of each study method, thus answering the second part of my research

question ('what is the best study method'). Furthermore, articles involving opinions and views also allowed me to best evaluate the effectiveness of each study method for high school students within the student population.

Review of scientific articles addressed the last part of my research question ('regardless of their learning styles') by conducting experiments across individuals with different learning styles and determining the actual effectiveness of each study method. This had been further substantiated by the self-conducted experiment, where it was concluded that there was no superior study method.

All these key findings were merged to form my outcome. As a large range of sources were used, most of the key findings were substantiated by at least two sources and cross-referenced to ensure their reliability. Classified under clear headings and subheadings, it allowed readers to be able to follow the outcome closely.

However, throughout the outcome, more links could have been made to the research question and the argument could have been concise, with a greater focus on the evaluation of the different methods.

Overall, I believe that by including the definitions and explanations of the two key words in my research question (i.e. Study methods and Learning styles), it provided more context for readers, making the entire essay. Easier to digest and understand. Choosing to present it as an essay with clearly labelled subheadings, I opted to use simple language presented in a logical manner that is easy to follow. I believe that my outcome provided a holistic approach to the topic, with substantial background provided before delving into the actual argument.

Word Count: 1497