

The significance of effective note taking and its impact on education achievement...

[Education](#)



Note taking has been an important process in the school setting that would enhance students' understanding and retention of lectures which has a direct impact on their academic performance. However, the cognitive mechanisms involved with note taking are still unclear and yet to be defined. This critical evaluation discusses four studies that investigated lecture note taking skills, and their implications on academic results and cognitive learning. This paper will thoroughly review these four papers to identify their strengths and weaknesses, and to come up with a conclusion based on this review.

One of the study sought to investigate how students' conceptualizations in note taking and lectures may impact their performance (Badger et al., 2001) A descriptive qualitative research method was adopted in this study. This data collection for descriptive qualitative research provides an insight into life experiences. It removes boundaries of strict scholarly methodologies so that researchers can witness how others encounter an occasion. Besides that, it allows cross-case comparisons and analysis of participants' experiences. The researchers administered a semi-structured interview to examine how students felt about the purpose of taking notes in lectures, the content of the notes, what happened to the notes after the lecture, and the students' previous experiences with taking notes. However, the theories provided by the researchers had little relation with the arguments made. For example, discussion about the provision of support for taking notes in lectures for different groups of students had little interest in exploring students' views of the purpose of taking note; theories involved with how taking note has helped improving students' performance may be more

persuasive. Furthermore, there were only 18 participants involved in the studies which leads to the sample size being too small. Even for qualitative sample, it should be big enough to assure most or all of the perceptions that might be important are likely to be collected. Additionally, the participants were asked open-ended questions where the interpretation of the answers may be subjective as the results collected from qualitative research are more easily influenced by the researcher's personal biases and idiosyncrasies. Besides that, in the setting of descriptive research, often subjects are not truthful and they tend to tell what they think the researcher wants to hear especially during interviews. Therefore, further researches may be needed to examine the arguments.

One of the research suggested the use of laptops to take notes may impair learning because their use results in shallower processing of information (Mueller & Oppenheimer, 2014). The researchers provided six logical theories that aligned with their arguments which are strongly supported by evidences. Studies that argued the alternate side of their argument were also presented, but these studies were critiqued for being not generalizable as the measures used to collect data do not generalize well to the real-world setting. The researchers had conducted three studies using quantitative experimental method. Experimental research is the most appropriate way for drawing causal conclusions, it is a basic, direct and effective type of research that can be applied across a variety of controls. Besides that, conditions not found in a natural setting can be created in an experimental setting that allows for greater control of extraneous variables. Furthermore, quantitative research's findings can be generalized when the data are based on random

samples of sufficient size. In this study, 65, 151, and 109 participants were recruited from three different universities respectively. The samples were representative as it is on sufficient size and situations where some students may have seen the lectures presented or do not take any notes were also considered and controlled for. Participants were well informed on the purpose of the investigation which fulfils the criteria of informed consent as a part of ethical research. Study 1 was conducted as a pilot study. Subsequent studies were conducted in different situation based on the results of study 1 to investigate further the impacts of laptop note taking. The hypotheses and conclusions were strongly supported by the findings. However, there were some weaknesses. Experimental research can create artificial situations that do not generally speak to genuine circumstances and because the situations are extremely controlled, the reactions of the test subjects may not be true indicators of their behaviors in a non-experimental environment. In this case, subjects might have tried to take as more notes as they could just because they were in the lab which caused the data collected might not be completely accurate. Besides that, the researchers ignored the fact that native English speakers and non-native English speakers were among the participants and this may have some impact on the outcome as non-native English speakers may have limited ability to answer the questions given as clear as the native English speaker which might mislead the researchers to assume that their answers were wrong. Thus, the researchers may need to take ethnicity into consideration in future studies.

One of the article suggested that transcription fluency was the only predictor of quality of notes, and that quality of notes was the only significant

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predictor of test performance (Peeverly et al., 2007). The researchers conducted two studies using the quantitative correlational research method. There were 85 and 151 undergraduate students from two different university participated in two studies respectively. Both group of subjects had significantly more female than male. It was found by other researchers that females committed significantly fewer working memory errors and took significantly less time to reach criterion than males on the SPWM task (Duff & Hampson, 2001). As stated in the same research, a sex difference was also observed on a measure of verbal working memory and the findings suggested that some prefrontal functions may be sexually differentiated in humans. Therefore, the results may not be generalizable due to the bias that occurred. Besides that, the correlation does not imply causation, due to bidirectional causality problem, the possibility that A caused B, B caused A, or both influencing each other; and third variable problem, A may have been caused by C. Thus, the findings did not reveal which variable influenced the other. Despite the imperfection, the research provided a good starting position which allowed researchers to determine the strength and direction of the relationship between quality of note, transcription fluency and verbal working memory so that later studies could narrow the findings down and, if possible, determine causation experimentally.

One of the study investigated whether computer-mediated notetaking influenced students' cognitive learning (Wei et al., 2014). The researchers provided plenty of theories which supported their arguments and led to appropriate hypotheses. Unlike other articles, the hypotheses provided in the study are testable and were able to be disproven. This indicated that the

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researchers' mindset of being willing to accept mistakes instead of practicing confirmation biases. The article was well organized and easy for readers to understand, except there were some minor mistakes such as misspelling of "homogeneity" and missing definitions of technical terms: "ANCOVA". The research adopted quantitative experimental method of research.

Experimental research is the most appropriate way for drawing causal conclusions. This is largely due to the emphasis in controlling extraneous variables. If other variables are controlled, the researcher can say with certainty that manipulation independent variable caused a change in the dependent variable. Quantitative research provides precise, quantitative, numerical data and it is useful for studying large numbers of people.

There were 127 undergraduate college students who volunteered to be involved in the experiments. However, 79.6% of them were Caucasians, 12.6% were African American, and the remaining were of other ethnicities which made the results more generalizable only to western countries. The participants were divided into six different conditions. They were instructed to listen to a 10-min video lecture and answered ten multiple-choice questions right after the lecture. It only tested students' immediate recall of contents and not retention of contents over time. Hence, the longitudinal effect was unclear. Additionally, multiple-choice questions were not sufficient to test students' higher levels of cognitive processing. However, the results that indicated that students who used computer-mediated notetaking were least affected by online chatting, as compared to students who did not take notes and those who took handwritten notes, was surprising and may contribute to the future research.

Overall, the four articles tried to uncover the cognitive mechanisms concerned with note taking and its relationship with students' learning performance. By analysing the four research article critically, the strengths and weaknesses of each research method can be seen. Besides that, all four studies have strong elements that are worth noting but also have limitations that could be avoided. Some of the studies are well done and situations that might interfere with the results are well considered and avoided. Some studies have uncovered new information that may help in future studies. The most common limitations found in the studies were the subjects recruited. The subjects had a significant influence on the final results, hence should be selected more cautiously according to the populations to be generalized.