



## Effect of Cheat Sheet Quality on Students' Achievement

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# **Effect of Cheat Sheet Quality on Students' Achievement**

Many students have access to more information than past students (Bond et al., 2020). A variety of information can provide more educational opportunities to students (Shofwan et al., 2021). However, we have great doubts about the ability of students to comprehend information and determine what is important actively. For example, paradoxically, students have academic achievement lower than past students, despite having access to more diverse information (Chen & Yang, 2019). This problem can be related to the attitude toward information emphasized in communication (Huang & Hong, 2016). Students need to understand and interpret the information provided actively. These skills are also very important in business education. For example, it is important for students after graduation to actively understand and analyze various information based on the needs of companies. In this study, we considered a cheat sheet as an important factor. Therefore, we analyze the characteristics of the cheat sheet and check what effect it can have on student education. Also, check the role of the instructor so students can more actively participate in the cheat sheet.

## **The cheat sheet is your compass**

Various evaluation methods for academic achievement are used in universities. Evaluating students' academic achievement is a very important factor. It induces motivation for learning and allows students to distinguish between the knowledge they know and knowledge they do not know (Corcoran et al., 2018). The most important part of evaluating academic performance is the test. Examinations conducted at universities can be divided into two types according to freedom. The first is a closed book format in which no other sources can be used in the exam. The second is an open book format that uses necessary materials such as textbooks and

notes. Students prefer the examination that allows open books rather than the traditional closed book method due to psychological pressure (Durning et al., 2016). A cheat sheet is a piece of paper that students use during exam time to learn and summarize the contents necessary for the exam. By using the cheat sheet, students are less stressed about the exam. Also, a cheat sheet could prevent psychological neglect caused by open-book (Parkes & Zimmaro, 2016).

Furthermore, using a cheat sheet can allow students to recheck important contents in textbooks and organize the parts they have studied themselves. Based on these contents, this study intends to check whether the students' use of cheat sheets in exams affects their effective learning achievement.

### **Theoretical background**

The study's theoretical background related to the effect of cheat sheet can be divided into a coding hypothesis and a dependence hypothesis. According to the coding hypothesis, students use cheat sheets to summarize their learning effectively. Therefore, it is possible to confirm the positive effect on student learning performance by using the cheat sheet in the study (Dickson & Bauer, 2008). The dependence hypothesis states that when students use the cheat sheet, they do not feel the need to understand and learn the necessary content while preparing for the exam. Students do not understand the content. Cheat sheets interfere with students' learning (Vohs & Schooler, 2008). In previous studies, the relationship between cheat sheets and academic achievement was not consistent. Based on this, it is possible to assume the moderating factors between the two variables by analyzing the existing research results. As instructors, we should effectively control moderating factors through counseling or education. In previous studies, the effectiveness of cheat sheets was confirmed in subjects requiring analytical thinking, such as computer science and economics. When students used cheat sheets in computer science and

economics classes, their grades improved (Dickson & Miller, 2005). Marketing class is also a social science subject that requires analytical thinking based on various marketing factors.

Therefore, the cheat sheet will have a significant effect on students' grades. However, this study predicts that cheat sheets will not have the same impact on everyone. If a student writes a cheat sheet with an active attitude, the cheat sheet will be effective in improving grades. But if students fill out the cheat sheet with a passive attitude, the effect of the cheat sheet on their grades will be limited. According to existing studies, the active attitude toward the cheat sheet is that students understand the information they have learned and organize themselves effectively. The passive attitude is that the student depends overly on the cheat sheet and copies the lecture content without understanding the content on his own (Nsor-Ambala, 2020). Therefore, students' academic performance will differ depending on whether the cheat sheet is organized with an active attitude.

Hypothesis 1: Students who actively organize cheat sheets will get better grades than those who passively organize cheat sheets.

Next, various factors explain the inconsistent effect of the cheat sheet used in the previous research results—for example, the characteristics of the subject, individual learning motivation, etc. Therefore, the effectiveness of the cheat sheet may differ depending on the characteristics of the subject (Durning et al., 2016). Furthermore, the instructor can control individual learning motivation. Instructors not only impart knowledge to students but can also have a positive impact on students' motivation to learn. Therefore, even if students prepare the cheat sheet with a passive attitude, the instructor should be able to change the attitude toward the cheat sheet positively. Therefore, showing an effective cheat sheet to students with a passive attitude

towards cheat sheet will motivate them for the next exam. Therefore, the cheat sheet will have a positive effect on students' exam scores.

Hypothesis 2: If the professor provides an opportunity for effective cheat sheet counseling to students who have a passive attitude toward cheat sheets, the students will get better grades on the second test than on the first test than those who did not attend the counseling.

### **Findings, Feedback, and Suggestions.**

This study analyzed the effect of a cheat sheet based on students' test scores in my Introduction to Marketing class. Data were collected from the fall semester of 2020 to the spring semester of 2022. To confirm the students' attitudes towards the cheat sheet, based on the contents analysis, students with a passive attitude (35 students) toward the cheat sheet and students with an active attitude (35 students) toward the cheat sheet were classified. The grades of the first and second tests were analyzed each semester. Each test confirmed there was no significant difference in the mean. The first analysis compares the performance difference between passive and active students on the cheat sheet. In the second analysis, among students with a passive attitude, the second test results were comparatively analyzed between those who received the professor's email and participated in individual counseling and those who did not attend. First, it was checked whether the students' attitude toward the cheat sheet had a significant effect on the students' achievement. For this purpose, an independent t-test was used. This study found that students with active attitude ( $147.51 \pm 4.99$ ) for cheat sheets had statistically higher exam scores than students with passive attitude ( $93.43 \pm 9.67$ ) for cheat sheets,  $t(68)=29.385$ ,  $p<0.001$ . Through this, it can be confirmed that the active attitude on the cheat sheet has a significant effect on students' academic achievement. For the second hypothesis, we

tested the effectiveness of individual counseling on improving students' performance with a passive attitude toward cheat sheets. For this purpose, ANCOVA was used. A one-way ANCOVA was conducted to determine a statistically significant difference between the students' group who has meetings with the instructor and other students who did not attend meetings with the instructor. There is a significant effect of having and not having a consultation on the 2nd exam score after controlling for the first exam score,  $F(1, 32)=35.31, p<0.001$ . In the second test, the average ( $120.31\pm 3.34$ ) of the students who consulted with the instructor showed a significant difference compared to those who did not ( $92.17\pm 3.25$ ).

This study confirmed that students with an active attitude toward cheat sheets showed learning achievement higher than students with a passive attitude. Rather than the existence of a cheat sheet, one's attitude toward a cheat sheet has a significant effect on learning achievement. Also, even though students have a passive attitude, they can have a more active attitude toward cheat sheets through consultation with the professor. Students who experienced such counseling showed higher learning achievement in the second test than in the first test than those who did not. This study further advanced the analysis of the effect of cheat sheets according to previous studies' subject and individual characteristics. This study confirmed that counseling with professors could change students' attitudes toward cheat sheets. In addition, this study has suggestions that can be used in the actual educational field. In the future, it can be suggested that perhaps not only the use of cheat sheets but also the professor's feedback is important in the class exams based on understanding marketing in universities. In this process, students have an attitude of active understanding and analysis of data required by companies after graduation.

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