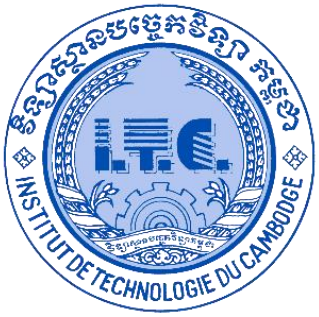


Institute of Technology of Cambodia

Department: I5-GIC Group B

Research Methodology

Assignment 2

Professor: SOK Kimheng

Student: KONG Chanrotanak e20180443

Year:2022-2023

1. Problem Statement

- Students are less likely to remain serious and committed to their studies with online class
- Some students are not digitally literate in online classes.
- Technical issue of poor internet also arises multiple times during online sessions.
- Time management becomes an issue for students who reside far away from school/campus.
- No recording or any other form of data is not always available for students who missed the class or later references.
- Students may lack the opportunity to learn advancing technology.

2. Research Objective

The primary goal of this research study is to identify the most common difficulties faced by students in grades 3-5 and to ascertain whether their performance is correlated with whether they attend offline or online classes, as well as whether there are any notable differences between those classes, at the Institute of Technology of Cambodia, Department of Information and Technology. As a result of the widespread problems, which are noticeably raising concerns about students' performance, the research study's primary objective is to identify the most prevalent difficulties faced by year 3-5 students.

3. Research Questions

The instrument's data collection is required to provide answers to each of these queries for additional analysis in order to achieve the desired objectives:

- What year are you studying now?
- Do you prefer online class or offline class?
- What motivate you to go to school?
- What are your favorite activities in breaktime?
- How often do you attend in online class?
- Between online class and offline class, which causes you more stressful when you study?

4. Literature Review

Online learning is a type of distant learning that primarily entails internet-based instruction with synchronous and/or asynchronous course delivery. On the other hand, real-time or synchronous learning occurs in classic F2F settings. Studies that are more recent indicate significant differences between F2F and online learning outcomes. On the one hand, a meta-analysis of research from 1990 to 2009 by Shachar and Yoram (2003) and Shachar and Neumann (2010) reveals that students who enrolled in online courses did better than those who enrolled in courses with traditional instruction in 70% of the cases (i.e. F2F lectures). Additionally, Navarro and Shoemaker (2000) note that regardless of background variables, learning results for online learners are just as good as or better than those for F2F learners. There aren't many comparable studies being undertaken in underdeveloped countries, as evidenced by the fact that the examined studies on the effects of F2F versus online learning on student performance have a heavy developed country focus. This lacuna in the literature may also draw attention to an important issue: internet education is still largely untapped in developing nations.

More and more students are choosing to take their lessons online. They find the conventional classroom setting to be constrictive, rigid, and unworkable. With the progress of technology, schools may now deliver quality classroom instruction online. With the introduction of online learning, students with busy schedules and little free time can now pursue a quality education. Web-based education has made it possible to provide classes to students all over the world using just one Internet connection, in contrast to traditional classroom instruction. Students who don't often participate in class can now do so thanks to online instruction. Quieter students may feel more at ease participating in class discussion because they are not in a classroom environment and won't be noticed or criticized. Thus, average class scores could rise as a result. In our study, gender and class rank were also taken into consideration when we compared learning via F2F versus online learning modalities in the teaching of an environmental science course. These results show that, regardless of gender or

class level, environmental science ideas may be similarly translated for non-STEM majors in both traditional and online platforms.

One topic's activities were carried out in-person, while the other was done online, with the topics being distributed evenly between the two groups. The findings indicated that students preferred to complete tasks in person as opposed to online, but there was no discernible difference in their exam scores between the two delivery methods. Although students valued the convenience of completing written assignments online on their own schedule, a follow-up study with a different group (N = 37) indicated that they also strongly preferred to discuss course material with peers in-person as opposed to online. It is determined that while online and in-person activities can result in comparable levels of academic performance, students choose to complete written assignments online but participate in discussions in-person. This study verified that, at least for these groups of students, online activities resulted in comparable levels of academic accomplishment as face-to-face activities by directly comparing the same students' performance and perceptions on in-class vs. online learning.

5. Population and Sampling method

This research study will be conducted on year 3-5 students from the GIC academic year 2022-2023 using a simple random sample procedure. The data for the research project will be sufficient within the proposed demographic to answer the research questions. Our study has 20 participants, who were chosen at random from the Department of Information and Technology's year 3-5 students.

6. Research type

In our research, we adopted a quantitative technique. We assumed that using a quantitative approach would make our study more credible, verifiable, and systematic because quantitative data is solid and scientific. Furthermore, the quantitative method enabled us to create concrete tables to back our arguments and claims. Our study, in particular, used a survey as its research strategy. Because our targeted sample size was very large, a survey would be the most appropriate design for our study. A survey would be able to obtain the necessary information from our

chosen participants. Furthermore, the survey was affordable, adaptable, and dependable.

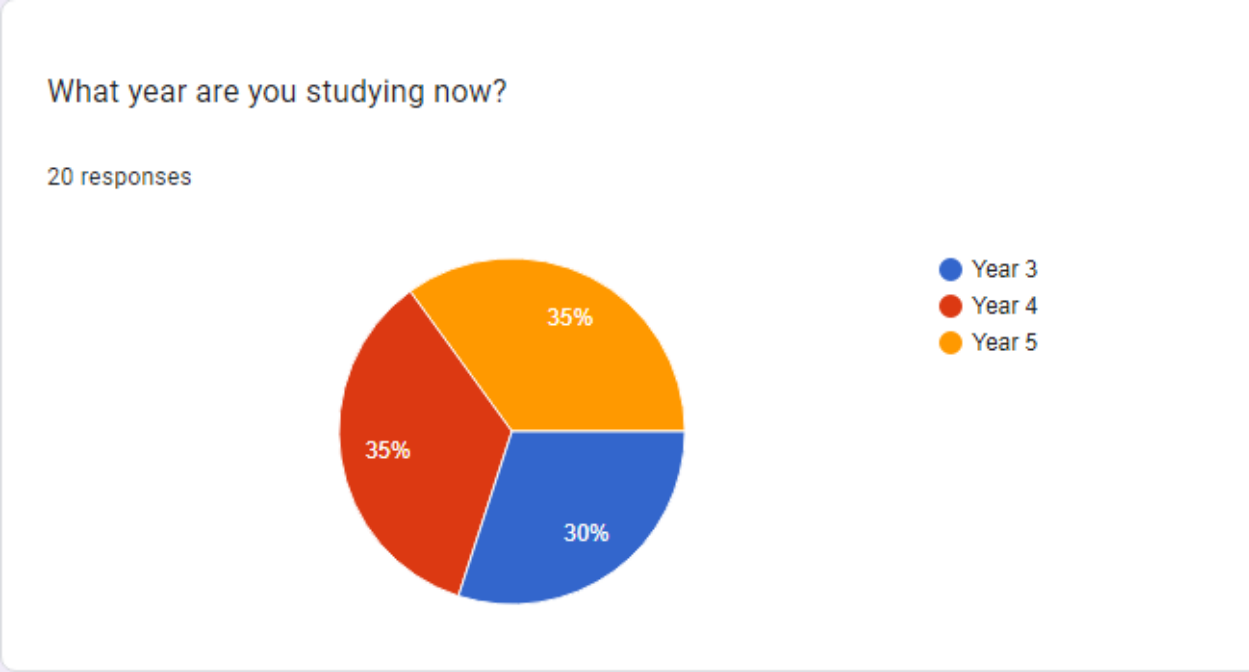
7. Variables

In this study subject, we want to know the name, gender, province, year, and exam score of the selected participants from year 3-5 GIC students. Furthermore, we wish to define their test score or grade in order to analyze the differences between face-to-face and online learning. We still want to know about their gadgets used during online learning as well as the tactics employed by teachers to offer students with information between offline and online learning. Furthermore, we are curious about their degree of satisfaction with both face-to-face and online learning to see how they feel about those two assertions.

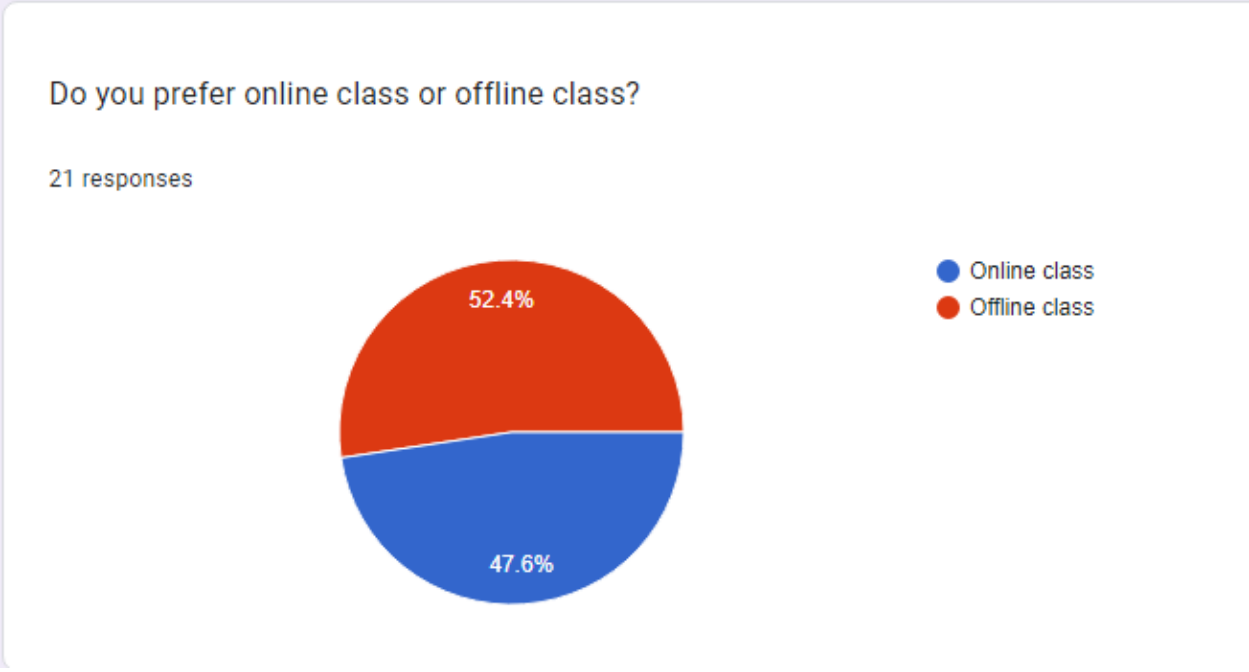
8. Hypothesis

According to our research, we had to accept the null hypothesis and reject the alternative hypothesis. There is no statistically significant difference between the two groups in terms of performance scores. Moreover, the chi-square result shows that there is no statistically significant difference between men and women in terms of performance. The results of the ANOVA show there is no significant difference in performance between online and F2F students with respect to class rank. We find no significant effects of race on change in student's performance, though males appeared to struggle more with shift to online teaching than females. In terms of academic performance, our first study showed that there were no significant differences in test performance whether class material, and the subsequent test, was presented face-to-face or online. This finding adds to previous evidence that simply participating in online activities does not necessarily lead to significantly improved test scores.

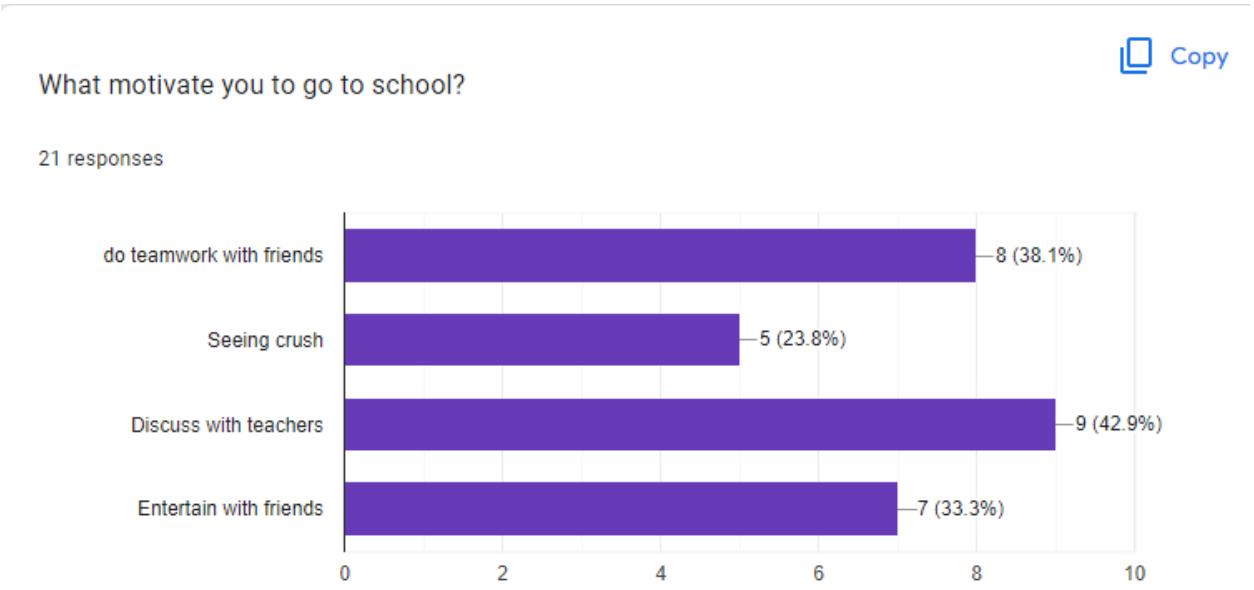
9. Result



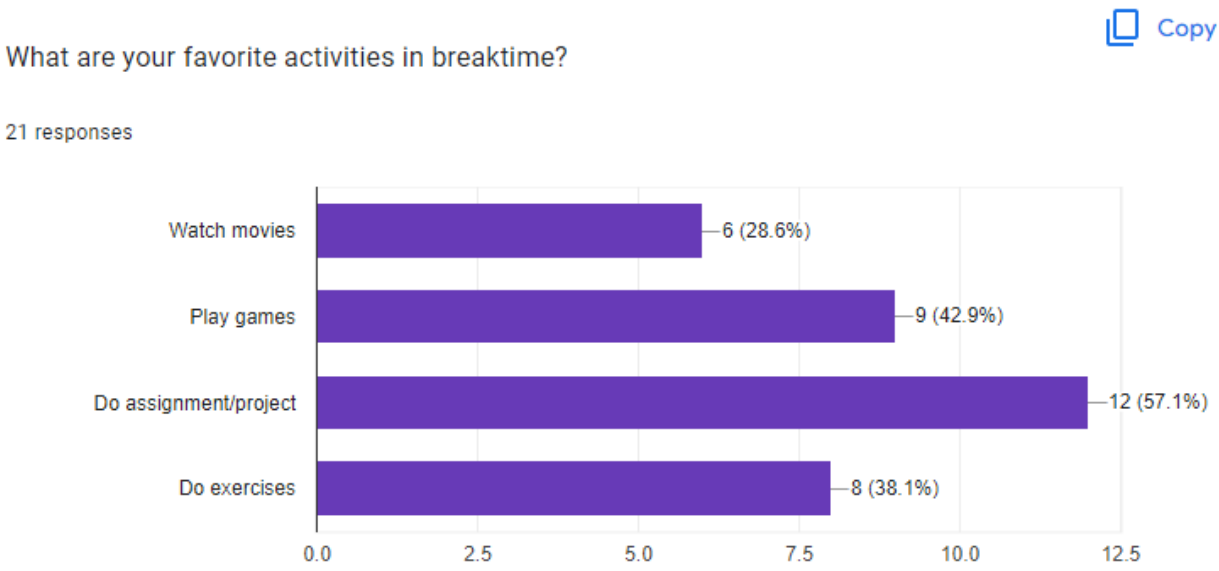
This pie chart shows that there are 20 responses to my research. The same number of students from year 4 and year 5 with 35% and year 3 with 30%.



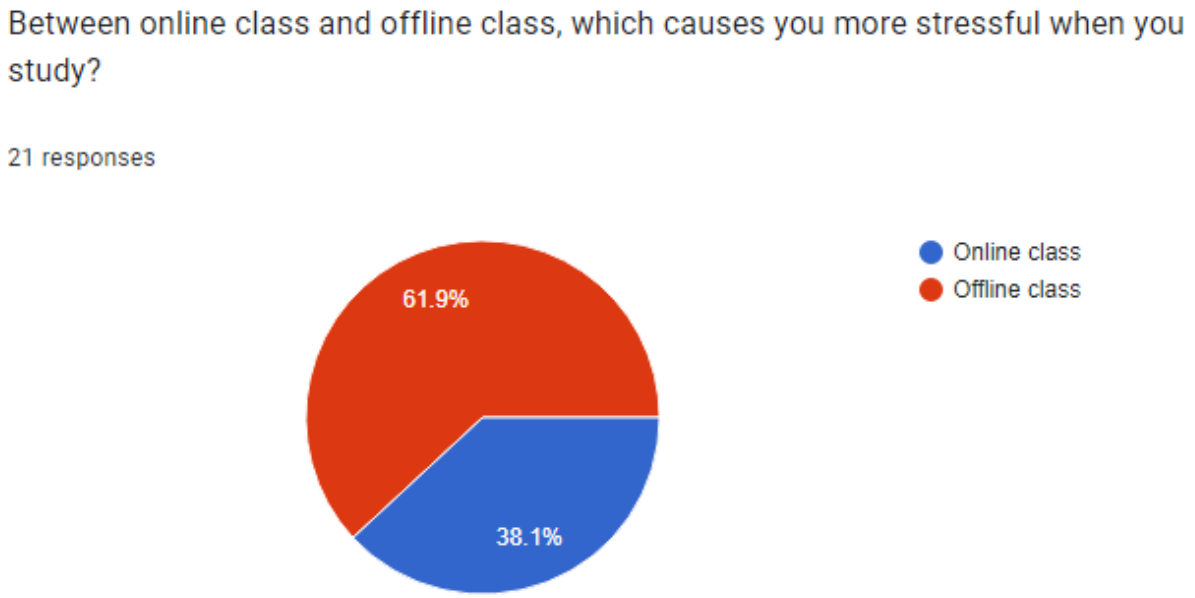
This pie chart shows that there are 21 responses to my research. 52.4% of them choose to study offline class and 47.6% of them choose to study online class.



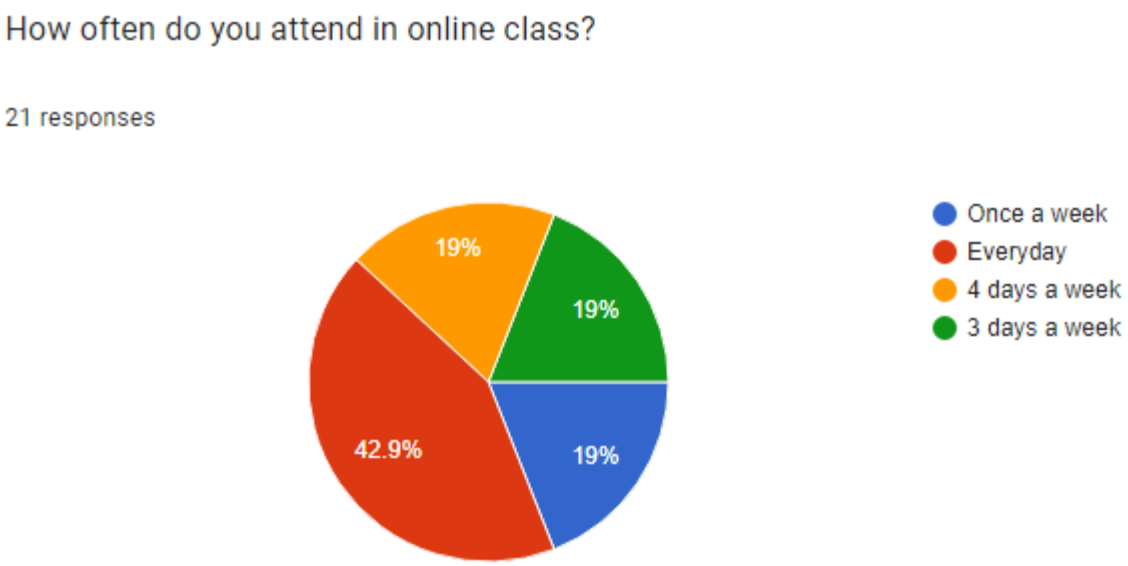
This bar chart shows that there are 21 responses to my research. There are some motivations of students to go to school. For discussing with teacher, there are 9 choses which equals to 42.9%. For doing teamwork with friends, there are 8 choses that equals to 38.1%. For Entertain with friends, there are 7 choses that equals to 33.3%. For seeing crush that is the lowest chosen which is 5 choses that equals to 23.8%.



This bar chart shows that there are 21 responses to my research. Students has their favorite activities in breaktime, most choses from doing assignment/project with 12 choses that equals to 57.1%. Next, students chose to play games with 9 choses which is 42.9%. Then, students chose to do exercises with 8 choses which equals to 38.1%. And lastly, students chose to watch movies with only 6 choses that equals to 28.6%.



This pie chart shows that there are 21 responses to my research. Students from online class feel stressful with 38.1% and students from offline class feel stressful with 61.9%.



This pie chart shows that there are 21 responses to my research. Most students attend in online class everyday with 42.9%. The percentages of students who attend in online class once a week, 3 days a week and 4 days a week are the same percentages with 19%.

10. Conclusion

In conclusion, most students choose to study offline since it allows them to be more productive in their studies. However, if they strive hard enough, study online classes might also aid them with their studies. Students will also get information from these two subjects if they study.

11. Reference

Attention Required! | Cloudflare. (n.d.). https://www.mapsofindia.com/my-india/social-issues/online-vs-offline-education-advantages-and-disadvantages

Woolf, N. (2022, August 23). *45 Survey Questions to Understand Student Engagement in Online Learning*. https://www.panoramaed.com/blog/45-questions-for-understanding-student-engagement-in-online-learning