

Does Taking Online Classes Have A Negative Effect on Learning

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The purpose of this study is to determine if classroom settings, online and traditional, effect how much a student learns, understands and recalls information given in a class. We did this by using participants in our study that have participated in both forms of education first hand and used their experiences. The significance of our study has to do with the growing movement and popularity of online classes and degrees. We aim to determine whether students gain, understand and retain information in the same manner using an online platform compared to a traditional environment. We believe our study is an important factor for students, for choosing the particular platform they will use to continue their education. With the growing costs of education, it is important that students understand the value of their education. With the different platforms of learning available choosing the correct form is crucial for the individual student's success. While online learning is more efficient and convenient for some students, we posed the question to whether they are receiving the same value in their education. While in the process of creating our study we came across other similar lines of thinking on our subject. Utilizing the findings of the other studies to propel our learning and understanding of the subject matter, compounding knowledge from the works and expanding our study to continue to broaden the scope of understanding of the subject material.

Firstly, we looked at a study dealing with engagement of students that take online, in person traditional and hybrid, a mixture of both, college courses. In the study conducted by Dumford and Miller (2018) they predicted that students taking online courses would not engage in collaborative learning, student-faculty interactions and discussions with a diverse range of other students to the extent or degree of students talking in person classes. They also stated that taking online classes might benefit certain students but be a deterrent to others (Dumford &

Miller, 2018). To investigate their hypothesis, they used data from the National Survey of Student engagement from colleges that were deemed non primarily online institutions, freshman and senior level students, and Ordinary least squares regression analysis to utilize and interoperate their data. Ordinary least squares regression analysis is a common technique for estimating coefficients of linear regression which in turn describe the relationship between one or more independent quantitative variables and a dependent variable. Using the two groups of students, freshman and seniors, they created many variable questions in which to compare the set. As dependent variables they created a variety of ten scales questions that were used to measure engagement of the students. They concluded that freshman students' proportion of online classes taken had a significant negative effect on the engagement indicators. Reporting lower levels of collaborative learning, fewer diverse discussions and a lower quality of interactions. (Dumford & Miller, 2018). They also found that it was the same for the senior level students but to a stronger degree.

Secondly, we examined a study dealing with academic performance, looking at the difference in motivation by traditional and non-traditional students. In the course of their study (Eppler et al., 2000) hypothesized that by using four groups of achievement goal variables, nature of intelligence, achievement goal orientations, attributions for negative academic students and optimism, that the studied groups of students would differ drastically in most of the variables in question. To test their theory Eppler and colleagues utilized Dweck's model of achievement. They believed that intelligence or ability is flexible and can be increased through effort. In the course of their study, Eppler and his colleagues located 153 undergraduate students enrolled full time in a university to volunteer, recruited from psychology courses as their participants. Students were then split into categories. Traditional students were students that fell in age

between 18-23, while nontraditional were students older than 24. They were given three questionnaires, a 25 question Likert scale measuring learning and performance goal orientations, An Academic Attributional Style Questionnaire measuring failure attributions and finally a revised version of the Life Orientation Test to measure optimism. Ultimately found that while GPA's for the nontraditional students were ultimately higher than traditional students, motivations were ultimately the same. Stating that "while they are generally more mature than traditional students, their motivations and academic skills may vary considerably depending on why they didn't complete a college degree at the traditional age" (pg. 370) while speaking about nontraditional students.

Lastly, we looked upon a study evaluating the effectiveness and performance of online learning compared to classroom settings during the COVID-19 epidemic in Ghana (Darkwa & Antwi, 2021) through the course of their study the researchers hypothesized that students do better in face-to-face classroom settings compared to online schooling. They used a case study research model utilizing a questionnaire and the students' performance in a paired samples t-test. The test group used in this study was second year Accounting I and II students for the 2019/2020 school year of students attending the University of Cape Coast. Administering a web-based survey program Darkwa and Antwi used a closed ended Likert scale questionnaire, asking students to rate the effectiveness, pedagogical approaches employed by the instructors, lesson interactivity, course assessment feedback and evaluation of the online course. They used the questionnaire as the primary data, and the students test scores as the second set of data to assess the performance of the student. The researchers concluded that teaching and learning were more effective face-to-face before the corona virus but the difference was not statistically different.

My specific prediction for the study is that although students can choose to take classes online or face to face, many students choose certain classes to take online. Whether because of time constraints (like the study of non-traditional students) or the aptitude to do better in an at home environment, the study will show that students taking these classes don't receive the same quality of information understanding, retention and recall as students who take them in person resulting in lesser test scores and lesser attitude towards the class in general. I believe that the results will show a significant difference in the means of effectiveness, quality of enjoyment, and overall outcome of the classes.

Method

Participants

The sample of participants in this study are 63 psychology students enrolled at Angelo State University. Only students who have taken classes both online and in person classes were able to participate in the study. Participants self-reported demographics are 77.8% female, 20.6% male and 1.6% other for the sex: 42.9% Hispanic, 36.5% White or Caucasian, 7.9% Asian, 4.8% black or African American, 4.8% Biracial and 3.2% Native or American Indian. Ages ranged from 17 to 52 ($M = 20.05$, $SD = 4.34$). Participants were recruited voluntarily from an online platform used for psychology students. Students received extra credit towards current psychology classes for their voluntary participation in the study.

Design

This study is a quasi-experimental study. Using this study design aims to establish a cause-and-effect relationship between variables. In our study, our variables and questions ask all about experiences the volunteer has gone through. We are not manipulating or controlling the variables. The chosen enjoyment of the setting, ability to understand the

material and ability to recall the information should have a relationship to the final outcome of the class.

Measures

Each participant was provided with a questionnaire consisting of 14 questions. This questionnaire was designed to measure personal experiences of students that have taken both online and in person courses in different ways. We designed this questionnaire using Likert scale type questions with 1 = strongly disagree to 5 = strongly agree, scoring them accordingly. Examples of the questions include *I prefer traditional, in person classes more than online classes* and *I prefer online classes more than traditional in-person classes*. We asked 7 questions about participant perceptions and experiences about online classes and the same questions relating to face-to-face classes. We also asked demographic questions like age, race and sex. We asked these specific questions to better understand and evaluate the study sample.

Procedure

We recruited our participants using an online tool called Sona, which is a program used by the psychology department at Angelo State University. The study data was then collected by a secure online software program called Qualtrics, which is used for collecting such data. The participants were first presented with a consent form and if they agreed to participate, they were subsequently given our questionnaire. After completion of the questionnaire the participants were presented with our debriefing page that gave more information about our study, this included references and contact information for our faculty advisor in case of questions.

Results

I predicted that students who take online classes fail to receive the same quality of information understanding, retention and recall as students who take them in person resulting in

lesser test scores and lesser attitude towards the class in general. To test my hypothesis, I used a paired samples *t*-test to compare the means. Mean values, which are the averages of the responses, meaning the higher the mean the more overall satisfaction from the group of participants, were compared for two variables with sample size of 63. The mean was higher for FTF classes ($M = 3.83$, $SD = .69$) than for online classes ($M = 3.02$, $SD = .86$). The difference in means (difference = .81) was statistically significant, $t(62) = 4.49$, $p < .001$. Meaning that overall opinions for face-to-face classes were higher than online classes. The results supported my prediction, students get more overall satisfaction from face-to-face classes compared to online.

Discussion

For our study I hypothesized that students taking classes don't receive the same quality of information understanding, retention and recall as students who take them in person resulting in lesser test scores and lesser attitude towards the class in general. Subsequently, after completion of the study we found that our results supported my prediction. There was a higher overall average in the satisfaction variable when it came to taking classes in an in-person environment. While there was no statistical difference in overall grade for the courses, just like in the study completed by Darkwa and Antwi (2021), the experience a student has while taking a class adds a definite value to the overall class. Real world implications of this study could sway students that are on the fence away or towards enrolling in online courses. For the students that need the interpersonal relationships to fully experience the learning that taking FTF classes facilitate, our findings could sway them to take the FTF classes in place of the online options. The opposite is also a factor, for those students worried about the difference between the two styles of classes, but are only interested in completing the class workload with no interest in the relationship portion students should know that academically both classes offer the same information and

grade in both styles were very similar. We do acknowledge that some students, like the non-traditional students in the Eppler et. al. (2000) study, cannot attend regular FTF classes because of other obligations. This study shows that while the satisfaction and overall enjoyment of the online classes is not the same as FTF, taking the online classes are still a viable option academically.

Our study did have limitations, in my opinion the main limitation is that our study did not compare the same class taken in both forms by the same professor. This would give us a more realistic outcome for our study. By being able to ascertain the enjoyment, material learning, comprehension and retention of the same class in both forms we could better expound on our understanding of both forms of learning. Another limitation we faced is that we only had a small number of volunteers from one department, that being our psychology department at ASU. If I could complete the study again, I would like to open the study up to multiple departments and universities. With more volunteers we could see a change in the variable input given to us from our volunteers and maybe our study would have turned out differently. Lastly, our study was limited by the questions we asked in our survey, if we had this to do over, I would still ask our Likert scale question but add others like test scores, study time per week and possibly a background on the student's relative classification as a freshman-senior. These additional questions would give us a better understanding of the student's overall outcomes from the classes, as well as stronger demographics.

We believe that our research into this topic is valuable for students that are looking into furthering their studies and don't know which medium of classes to choose. It shows that with the growing popularity of online schooling there is still a better value in attending face-to-face classes. We also see value in the information we gathered for the university as a whole, they

could take the information and use it to better their online curriculums, add the needed values to make the offerings of both styles of classes equal in all aspects. Web based learning isn't the only avenue that can be improved because of our study, there is an ever-growing number of online resources that can be improved. With the emergence of instruments like online counseling sessions and doctor visits, our study could help those persons in need by advancing these forms of online resources as well. Helping our medical community create an online experience that equals an in person visit. Our contributions, in my opinion, might have a considerable impact towards other scientific literature about the topic of online vs. FTF classes, with the popularity and convenience of online education we have seen an uptick in the use and availability of classes, but there has not been a lot of study towards the total impact in this new form of education, I believe our study can improve knowledge and understanding of at least the overall satisfaction during the course of others investigations.

I'd like to leave individuals with this, I was personally interested in this study because I am a non-traditional student myself. I was curious to know if I was getting the best value in my education when re-enrolling to Angelo State University as an online only student. I can personally state that it was one of the best decisions I have made to date. The furthering of education by which ever means available is always the best option. I'd like for the reader to understand that our study was one of mutual respect for persons taking face-to-face classes or completing their degrees online. We value the input given to us from the volunteers and hope we have made a positive impact towards people looking into furthering their education. Education is one the most important investments people can make for themselves. Throughout life people continue to learn, it is what individuals can learn and how they do it that makes the difference. We ultimately wanted to ascertain if different avenues for education are better than others, and

DOES TAKING ONLINE CLASSES

10

believe we accomplished that. We only wish people use this study for good and continue to make life special, learn that new language, or maybe that new trade or skill that you are interested in, or use this information to finish that degree that was left behind when life got in the way.

References

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