Exploring Students' Opinions about Online Education and Their Learning Outcomes after They Received It

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Abstract: Universities all over the world have closed down since the covid-19 pandemic. Online education has been introduced worldwide to maintain the usual educational function. The effectiveness of online education in delivering higher education is of major concern nowadays. This paper investigates students' attitudes toward online education as well as their academic performance after receiving it. The results suggest that the delivery of higher education requires constant enhancement.

1. Introduction

Recent evidence suggests that demand for higher education is projected to rise in the future. The reason is that not only could higher education bring about pecuniary benefits like providing better job opportunities with high returns to individuals, but it could also produce non-pecuniary benefits like making friends and forming relationships in the university. However, since the outbreak of the covid-19, universities worldwide have been forced to close down. The spread of the coronavirus has had a significant impact on students across the higher education sector, ranging from travel restrictions to social isolation, quarantines, campus closures, and border closures. (T.I.of coronavirus, QS,p2) The question of how to maintain the demand of students worldwide and continue the supply of higher education becomes a primary concern for universities. As a result, online education is launched worldwide to maintain normal educational function. One of the particular concerns is the effectiveness of online education in delivering higher education. This paper aims to contribute to this growing area of research by exploring students' opinions about online education and their academic performance after they received online education.

2. Methodology

This study aims to investigate students' perceptions of online education and their academic performance after receiving it. The methodological approach taken in this study is analysis based on four pieces of research, using both quantitative and qualitative approaches. The first research[1] was carried out using an online questionnaire. There are thirteen questions in total, with seven open-ended questions coming first and six closed-ended questions following a Likert-type scale. A total of 103 students completed the survey online. The open-ended questions were asked first as a methodological option to ensure that the answers were not influenced by the specific items of the

closed-ended questions that followed (Karalis & Raikou, 2020). The researchers of the second research[2] used an online survey. Three hundred fifty-eight undergraduate students from the same university completed questionnaires containing twenty statements. The students compared online and F2F learning then reacted to each statement on a 5-point Likert scale. (Chakraborty P, Mittal P, Gupta MS Yadav S, AroraA, 2021). The third case study draws upon administrative student records from a public research university with a diverse student population and a long-established online program. It compares the midterm and final grades of students in online education and F2F education. A significant advantage of their approach is that they involved a comparison concerning instructor-specific factors, which increases the validity of their results. Other advantages include the control of student fixed effects. (See explanation below) (Altindag, D.T., Filiz, E.S., and Tekin, E,2021)

3. Analysis of the Three Pieces of Research

The first two pieces of research focused on students' views and emotions about online education during the COVID-19 pandemic. The third research provided and compared students' grades in online and F2F courses. To allow a deeper insight into students' opinions, I selected two studies exploring students' attitudes towards online education in India and Greece.

Karalis, T. and Raikou, N. from the University of Patras in Greece did the first research. They conducted their survey during the first two months of COVID-19 in two courses in the Department of Educational Sciences and Early Childhood Education, which meant the respondents were student teachers. The purpose of their study was to focus on the emotions students experienced during the first phase of the online shift. They designed a questionnaire containing thirteen questions, with seven open-ended questions coming first and six closed-ended questions in a Likert-type scale coming afterward. The questionnaire was done online by 103 students. The students had already attended four teleconference meetings in each of the courses mentioned above and worked on assignments in the asynchronous education system, so they had a fairly thorough understanding of how to attend classes under the new learning method. At the beginning of the closure of the university, negative emotions were prominent among students. (77.7%)(Table 1). They felt anxious as they were unsure how to complete their studies and felt distressed about COVID-19 disrupting their normal studies. Then, the students had a shift in emotions when online classes started(60.2%). They started to feel positive about learning online. They suggested that compared to F2F courses, online courses have easier participation facilitated by technology (65%)(Table 2). They especially appreciate the flexible teaching methods and the easier access to learning materials. Moreover, the students enjoyed the advantages in time and money. They did not need to travel to the campus to attend classes (56%), so they could study in the comfort of their house (28%). Regarding the negative aspects, the students reported a lack of communication and cooperation between professors and students and also among students themselves (70.9%)(Table 3). They also mentioned the technical difficulties (55.3%) and the long hours spent in front of a screen(15.5%). (Karalis & Raikou, 2020)

Chakraborty P, Mittal P, Gupta MS Yadav S, AroraA from the Netaji Subhas University of Technology used questionnaires with twenty statements, with a sample size of 387 undergraduate students from the same university. The research aimed to find out students' opinions on various aspects of online education during the pandemic period. The students were asked to compare online education with F2F education, then respond to each statement on a 5-point Likert scale. The statements included the general teaching process, content delivery, teacher-student interaction, evaluation, and the impact of online education on health and society. Three hundred fifty-eight students responded to the questionnaires. The results are shown in table4. The results of this study

indicated that students have diverse thoughts about online education. In general, the students appreciated the online tools and resources(e.g., slideshows and note-taking devices) professors used to deliver information in class. They believed they could better interact with professors face-to-face, but professors could make online lectures more interactive using various methods. However, the students also expressed their concern that online education had damaged their health. Moreover, they thought online education had caused a digital divide among them. The conclusion of the study stated that there is still room for improvement. (Chakraborty P, Mittal P, Gupta MS Yadav S, AroraA, 2021)

The third research was done by Altindag, D.T., Filiz, E.S., and Tekin, E. The purpose of this research was to present fresh evidence regarding the significance of online versus face-to-face instruction on student learning outcomes. They collected 18,121 undergraduate students' midterm and final grades in various online and F2F education courses. They chose the students from a medium-sized, public R1 university. After students received a midterm grade from their instructors, the University switched to remote instruction in mid-March. As a result, the change in course delivery mode in Spring 2020 did not affect midterm grades. The researchers collected two sets of data, one controlling for instructor-specific factors, such as leniency in grading and one not controlling for it. One main advantage of this study is that it controlled student fixed effects by comparing students' marks in face-to-face and online classes. The researchers measured student learning outcomes using the model shown below. In the first research that did not control for instructor-specific factors, the grades in online courses are higher than those in F2F courses. For instance, compared to attending an online course, a student attending a F2F course in Fall 2019 is seven percentage points less likely to receive an A at the end of the semester(Table 5). In the second research that controlled for instructor-specific factors, students in online courses performed more poorly than those in F2F courses. For instance, F2F students are 4.1 percentage points (4%) more likely than online students to get a passing grade (A, B, C, or D)(Table 6). Therefore, in the model with student fixed effects only, the difference in student learning outcomes between students in F2F and online courses is not caused by improved learning processes enabled by online education.(Altindag, D.T., Filiz, E.S., and Tekin, E,2021) We can infer that online education is not as effective and still needs improvements.

$$Y_{ict} = \beta_0 + \beta_1 Spring2019_t + \beta_2 Spring2020_t + \beta_3 F2F_{ict} + \beta_4 F2F_{ict} \times Spring2019_t + \beta_5 F2F_{ict} \times$$

$$Spring2020_t + X_{ict}\beta_4 + \mu_i + \varepsilon_{ict}, \tag{1}$$

(Y_{ict} represents one of the outcome variables for student i who takes course c in semester t. The binary indicators $Spring2020$ and $Spring2010$ take on the value of one for the Spring 2019 and 2020 semesters, respectively. $\beta1$ and $\beta2$ stand for the difference in students' academic performance between online courses taken in Spring 2019 and Spring 2020 in contrast to online courses in Fall 2019. $\beta3$ compares the outcomes of face-to-face and online courses in the Fall of 2019. $\beta4$ is the impact of face-to-face learning over online learning in Spring 2019 compared to Fall 2019. $\beta5$ shows the influence of face-to-face education over online education in Spring 2020 compared to Fall 2019.) (Altindag, D.T., Filiz, E.S., and Tekin, E,2021)

4. Conclusion

The main goal of the current study is to explore students' opinions about online education and their academic performance after they received online education. The researchers of the first two studies set out to find out students' opinions about online learning. They were carried out using a questionnaire and a survey, respectively. According to the results of the first study, most students experienced negative emotions at the beginning of the closure of universities but felt positive

afterwards. They enjoyed easier ways of learning brought by technology and the comfort of studying at home. They also pointed out the negative aspects of online learning, including lack of contact and health issues. (Karalis & Raikou, 2020) The participants of the second study also appreciated the more convenient ways of delivering information in online learning. However, they felt online education has adversely affected their health and caused a digital divide. (Chakraborty P, Mittal P, Gupta MS Yadav S, AroraA, 2021). The third study involved a comparison concerning instructor-fixed effects. The results suggested that the students had better learning outcomes in online education without controlling for instructor-fixed effects. However, after controlling for instructor-fixed effects, students in F2F education outperformed those having online courses. (Altindag, D.T., Filiz, E.S., and Tekin, E,2021) Therefore, it seems that the delivery of higher education under the COVID-19 situation needs constant improvements. The findings will be of interest to improving the quality of online education onwards. Further work needs to be done on exploring the effectiveness of online education in the future. The COVID-19 pandemic can be used to justify renewing and developing teaching and learning in the university setting. (Karalis & Raikou, 2020)

References

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