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Impact of COVID - 19 Pandemic on Teaching Strategy methods among Students in higher education Institutions in Jeddah City

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During the COVID-19 pandemic, most learning strategies have been transitioned to an online setting across the world. Students and teachers who previously relied on traditional learning are now confronted with a new challenge. This dramatic adjustment may have an impact on their teaching strategy methods, learning habits, and willingness to embrace the change. A descriptive cross sectional online survey was used among students in selected higher education institutes in Jeddah city. The intended aim of this study was to assess the impact of COVID-19 pandemic on selecting teaching strategy methods and to measure the students' perceptions. Using the Non-Probability Snowball Sample technique, 220 student participants were chosen, and the results were then analyzed using the SPSS program. According to the students' results of the survey, although the participant faces difficulties from the virtual transition classes (42.7%), the teaching strategy in online transition seems to be more beneficial in the future and it will continue after COVID- 19 with (65.5%) of student's approval. Overall, the modern teaching strategy methods that have been measured on students in Jeddah city demonstrated a highly positive impact in higher education institutions.

Keywords: Assess the impact of COVID-19 pandemic, teaching strategy methods, virtual transition classes, students' results of the survey.

INTRODUCTION

Coronavirus has impacted the education system significantly. To prevent the spread of the coronavirus, schools, colleges, and universities were locked down in which students, instructors, and parents face challenges. Hence, a viable option for sustaining the educational system is distance learning. However, the lack of network infrastructure, computers, and internet connection makes distance learning difficult in some countries (Tadesse, et al. 2020).

Many countries restricted travel rules to come in and out of the cities to avoid the spread of COVID-19. Several steps, including social distancing, self-isolation, or quarantine, are being taken by public health professionals and government officials; upgrading health centers to contain the disease; and urging people to operate at home (Bedford et al. 2020).

Many teachers and students worldwide have been excited about the transition to online education. The semester-end final exams have already been postponed by many institutions, while continuous grading will begin alongside the online courses. Although technology has previously been used to facilitate teaching and learning, the examination element is underdeveloped (Kawano S et al. 2009). Students and faculty remain confused about the method of administering unfinished activities, initiatives**,** and other pending reviews (Timmis et al. 2016) (Raaheim et al. 2019). Virtual online courses on smartphone apps keep students updated with the latest news about the disease and discuss educational approaches that could be

unified (Kearns et al. 2012). Microsoft Teams, Google Meet, Google Classroom, and Hangout are other widely utilized learning channels that support live events to share the screen of the host teacher or student. Online teaching is a cheap and feasible approach that lets teachers and students learn expertise, retain routine, and increase morale (Ghai et al. 2020).

With the latest growth in online learning and integrating technology in teaching in KSA, it is indispensable to explore what underpins the students' satisfaction level in online learning settings and provides technical training as well as proper instructions (Verma et al. 2020) (Alenezi et al. 2020).

Student satisfaction, academic performance, and other course outcome measures are influenced by the expectations and teaching strategies adopted early on in developing online courses. In this study, teaching strategies refer to the communication channels and activity choices instructors intend to use when teaching online. Experiential knowledge concerning benefits, challenges, and teaching strategies in the online learning context may provide directions for inexperienced instructors to follow, supporting higher chances for successful online course design and implementation (Hamdan et al. 2014) (Amanpour et al. 2020).

The present study aimed to analyze the potential impact of teaching strategy methods on the perception of the students during the COVID-19 pandemic.

MATERIALS AND METHODS

A cross-sectional electronic-based study design was conducted from March to June 2021 at Jeddah city in selected public and private higher education institutes; the Non-Probability Snowball Sampling technique was performed. The sample size was determined by using Steven Thompson, Equation, Stephan (2012) through using Open Epi software. The total population was 220 students.

All the students in the study were invited to complete the survey in which 81.2% resulted in a response rate. Respondents who were not interested in participating were omitted from the study. The study was accepted by Al-Ghad International College Research and Ethics Committee and informed consent from the students was obtained. Reliable tools have collected data that are essential for assessing the impact of COVID-19 pandemic on selecting the teaching strategy methods and measuring the students' perceptions. An online questionnaire was used to assess the responses of the students on a 4-point Likert Scale (Completely Disagree-Disagree-Not sure-agree).

The data were gathered through an electronic questionnaire developed by the researchers using the Google form document, which contained demographic characteristics of participants, and a variety of questions. The data were analyzed using SPSS and the results were displayed in frequency and percentage. The level of statistical significance and a statistical test was used for closed calculation using one sample t-test and the P-value is (≤ 0.05).

RESULTS

Table 1: The percentage of students who answered the electronic questionnaire in selected public and private higher education institutes, n (220).

Name of university		Frequency	Percent
Valid	Al-Ghad International College for Applied Medical Sciences	125	56.8
	King Abdulaziz University	82	37.3
	Jeddah University	13	5.9
	Total	220	100.0

Table 2: The challenges of changing teaching strategies from face to face to virtual teaching methods, n (220)

Item	Frequency	Percent
Very difficult	34	15.5
Relatively difficult	94	42.7
Relatively easy	66	30.0
Easy	26	11.8
Total	220	100.0

The results in table (2) demonstrated that the majority numbers of participants who face challenges convert tradition classes to online classes (42.7%), which are relatively difficult. However, the least number of participants who responded this transition was easy at 11.8%.

Table 3: Important of online teaching in the future as a result of COVID- 19, n (220)

Item	Frequency	Percent
Fully disagree	22	10.0
Disagree	37	16.8
No opinion	17	7.7
Fully agree	144	65.5
Total	220	100.0

The results in table (3) showed that the percentage of students who fully agree about the importance of online teaching in the future will be continued after COVID- 19 was 65.5%.

The data in table (4) showed that most of the responses who answered yes/agree about using blended learning, virtual classes, and using different teaching methods, during COVID-19 were (33.2%, 39.1%, and 5.5%) respectively.

Table 4: New strategies used from the universities that facing COVID 19 n (220)

Item	Frequency	Percent
Blended learning was used	73	33.2
Virtual classes were used	86	39.1
Developing internationalization at home was used	9	4.1
Different teaching methods were used	12	5.5
Teaching strategies were not clear yet	17	7.7
New teaching strategies were not used	23	10.5
Total	220	100.0

Table 5: The percentage of the faculty plan covered courses during COVID 19 pandemic.

Items	Frequency	Percent
All or most of the plan	133	60.5
A good amount	56	25.5
Some, but not much	26	11.8
Very little or none	5	2.3
Total	220	100.0

According to the student's responses, most of the faculty covered the plan by 60.5% in table (5).

Table 6: The similarities and differences in **teaching methods between traditional classes and virtual classes**

Items	Frequency	Percent
The teaching strategy methods through online classes was similar to traditional classes	103	46.8
The teaching methods focused on fewer subjects compare to traditional classes	91	41.4
The focus was depend on the students attendance rather than academic achievements	26	11.8
Total	220	100.0

Most of the students answered in table (6) there is no difference between teaching strategy methods through online classes compared to traditional classes with 46.8%, while 41.4% mentioned that faculty members focused on fewer subjects in the courses compare to traditional classes.

Table 7: The learning resources were used to support the students learning during COVID 19.

Item	Frequency	Percent
Instructional packages (textbooks, worksheets, printouts)	40	18.2
Radio education	4	1.8
Online resources that used by students	50	22.7
Online instruction delivered by the teachers	97	44.1
Other modalities	28	12.7
Educational television	1	0.5
Total	220	100.0

From table (7), the results showed that most resources used to support the students learning during COVID-19 were provided by online instruction through teacher's guidance with 44.1%.

The results in table (8) demonstrated that most of the students highly agree with continuing academic learning during COVID-19 pandemic and ensuring collaboration between students that lead to teamwork with 51.4% and 35.9% respectively. On the other hand, 44.1% of the students agree with quality assurance to complete the learning process.

Table 8: The percentage of students who willing to continue the academic learning during COVID-19.

To what extent were the following areas sufficiently addressed during the period when students were not able to attend university?												
Statement	Highly agree		Agree		Not, sure		Very little		Not at all		TOTAL	
	F	P	F	P	F	P	F	P	F	P	F	P
Ensure the continued of the academic learning of students	113	51.4	66	30	31	14.1	4	1.8	6	2.7	220	100
Ensuring student collaboration that lead to team work	79	35.9	78	35.5	22	10.0	30	13.6	11.0	5.0	220	100
Quality assurance and the preparations required to complete the learning process	75	34.1	97	44.1	33	15	12	5.5	3	1.4	220	100

DISCUSSION

COVID-19 has impacted all aspects of our lives, including education and the economy. Governments have issued stay-at-home directives, which led colleges and universities to shut down across the world. Therefore, online classes have become a crucial component in the continuity of education.

According to the result in table (2), the study showed that (58.2%) of the students believed that the study became difficult when it was changed to online as a result of COVID-19, compared to (42.7%) of the students who chose the online method to be easy. This result agrees with Chiu-Lan Chang and Ming Fang, they found the main problems of the first aspect of online instruction including some teaching contents are not suitable for online instructions, students' autonomous learning ability is weak, and students do not form good habits of online learning (Chiu-Lan Chang and Ming Fang, 2019). In this study, 65.5% of students believe that distance learning will become important in the future as a result of the Corona pandemic, on the contrary, 26.8% of students do not believe that (table 3). This outcome is similar to Anjali et al 2020 who discovered in the research that 47% of students want online classes to be made part of their curriculum after the coronavirus, 15 students want their theory lectures to be replaced by online classes. Conversely, 3 students want these classes in addition to routine theory classes (Anjali Verma1 and Surender Verma, 2020). The data in table (4) showed that (89.5%) of students indicated that their universities have taken strategic actions as a result of the Corona pandemic, such as blended learning, virtual modalities, and developing internationalization at home. Compared to 10.5% of universities, they did not take any strategic measures. According to Mohammad et al 2020, among the respondents, (41.8%) reported having little or no online teaching/learning experience before the pandemic, and (62.5%) preferred blending online and face-to-face instruction. The reported challenges to online medical education during the COVID-19 pandemic included issues related to communication (59%), student assessment (57.5%), use of technology tools (56.5%), online experience (55%), pandemic-related anxiety or stress (48%), time management (35%), and technophobia (17%). Despite these challenges, most of the respondents (70.7%) believed that the COVID-19 pandemic has boosted their confidence in the effectiveness of online medical education. Consequently, 76% of participants intended to integrate the online expertise garnered during the pandemic into their practice (Rajab et al. 2020).

According to the student's responses to the questionnaire, table (5) presents 86% of the students chose alternative plans to cover the curriculum, while 14% of the students answered no alternative plans to cover the curriculum and this agrees with Chiu-Lan Chang and Ming Fang and their results specify that most instructors try to

prepare the contents of instructions well, however, it is still not an easy way to monitor and change the students' learning behaviors in such a short term (Chang and Fang, 2019). When asked about completing courses when universities were closed, 46.8% of the students answered that the curriculum was completed in a similar way before Corona, while (41.4%) of the students said that the professors focused on certain topics, and only (11.8%) of the students answered that there was no focus on completing a course of study (table 6).

Teaching methods differed during the suspension period. From table (7), the result showed that 44.1% of the students answered the study was online delivered by the teacher, and about 20.5% relied on the study via television and radio, while 22.7% of students used existing online instructional resources.

In table (8), about 81.4% of the students answered all problems in all fields were solved to ensure the continuity of academic learning, work collectively, ensure quality, and prepare the necessary preparations to complete the learning process, compared to (6.9%), who chose to not complete the quality assurance and the necessary preparations.

In 2020, Bao's study concluded with five high-impact principles for online education: (a) high relevance between online instructional design and student learning, (b) effective delivery of online instructional information, (c) adequate support provided by faculty and teaching assistants to students; (d) high-quality participation to improve the breadth and depth of student's learning, and (e) contingency plan to deal with unexpected incidents of online education platforms (Bao et al. 2020).

CONCLUSION

This study has been conducted to analyze the potential impact of teaching strategy methods on the perception of students during the COVID-19 pandemic. The COVID-19 pandemic crisis has had a profound effect on the whole educational system, which led colleges and universities to shut down across the world. Therefore, online classes have become a crucial component in the continuity of education. The majority of the students believed that the study became difficult when it was changed to online as a result of COVID-19. Also, most of the students fully agreed about the importance of distance learning in the future as a result of the Corona pandemic. Students indicated that their universities have taken strategic actions as a result of the Corona pandemic, such as blended learning, virtual modalities, and developing internationalization at home. According to the student's responses to the questionnaire, there were alternative plans to cover the curriculum and it was completed in a similar way to before Corona.

Most resources used to support the students learning during COVID-19 were provided by online instructions through teacher's guidance. Furthermore,

according to students' answers, all problems in all fields were solved to ensure the continuity of academic learning, work collectively, ensure quality, and prepare the necessary preparations to complete the learning process.

These results may be utilized to improve learning quality, the pros and cons of e-learning and online education quality from students' perspectives and the impacts on them.

CONFLICT OF INTEREST

The authors declared that present study was performed in absence of any conflict of interest.

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AUTHOR CONTRIBUTIONS

Gihan Abdelhalim A Ahmed and Aziza Ibrahim Noor designed the manuscript; Reda Fayyad and Aliaa Nasef contributed to questionnaire design; Khalida Sharaf analyzed and interpreted the results; Wifaq Rabih (RWM) and Sharifa Theeban wrote the discussion; Rayan Mohamed and Hwidaa Elamin contributed to literature search and reviewed the result and discussion; Gihan Abdelhalim A Ahmed wrote the conclusion and Aziza Ibrahim Noor reviewed the final manuscript draft. All authors read and approved the final version and did the same efforts equally.

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