IMPACT OF ONLINE TEACHING STRATEGIES ON STUDENT ENGAGEMENT IN HIGHER EDUCATION DURING GLOBAL LOCKDOWN IN RIYADH

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ABSTRACT

The coronavirus outbreak made all colleges and university struggling to continue education to switch from brick-and-mortar campuses to virtual classrooms. This resulted in the largest "online movement" in the history of education. It transformed the higher education globally to switch from the conventional face to face teaching method to online teaching method through the integration of technology. Faculty were instructed by their academic heads to organize their lectures through Zoom app and incorporate online tools to keep student engaged, but many faculty were being exposed for the first time to these online teaching tools. This study involved a survey from faculty of higher educational Institutes in Riyadh to know the challenges faced by them in online teaching during global lockdown and discuss the strategies adopted by them to keep student engaged. Correlation Analysis, Regression analyses and ANOVA was implemented to analyze the relationship of variables of online teaching strategies with student engagement. The findings of the study will enable online instructors and institutions to better design their courses, serve students' needs, and position themselves in a competitive global market.

Keywords: Online Teaching Strategies, Student Engagement, Global Lockdown, Coronavirus Crises, Covid-19, Faculty Challenges and Opportunities.

INTRODUCTION

The coronavirus pandemic globally, affected the personal and professional lives of millions of people, including students, educators, and education researchers. All educational institutes closed their doors and quickly moved online in an effort to stop the spread of the coronavirus, which causes a disease known as COVID-19. A complete lockdown was announced by the government in all countries, as a preventive strategy to fight against the Covid-19 virus. The priority was to keep people safe by following social distancing. All face-to-face classes were cancelled and the education delivery shifted from face to face to online teaching. As a result, education changed dramatically. This increased the focus of educational institutes on digital learning. Teaching was undertaken on digital platforms, whereby most of the educational institutes adopted the method of e-learning through online education. It leads to a great transformation from face to face teaching to online teaching. A new model of education suddenly emerged that involved the integration of information technology in education. It changed the way of teaching. It enabled faculty to reach students through chat groups, video meetings and also document sharing. As a result, At all levels of education, instructors, institution leaders, and policy makers faced an unprecedented challenge, trying to ensure that high quality and equitable teaching and learning continues under rapidly changing and unpredictable conditions. However,

the use of these digital technologies required all faculty and students to have access to devices and internet connection. It became important not only to reach students through use of video tools such as Panopto, Webex and Zoom but also to keep them engaged by adopting effective teaching strategies. It increased the responsibility on faculty to be competent in their role and possess the skills necessary to positively impact student engagement through online learning environment. The present study discussed the challenges faced by faculty in online teaching process and also focuses on examining the positive aspects of teaching strategies adopted by them to support student engagement during global lockdown. Following were the objectives of this study:

1. To identify the challenges and opportunities in online teaching process during global lockdown.
2. To analyze the effect of online teaching strategies adopted by faculty on student engagement.
3. To suggest effective online teaching strategies that can foster student engagement.

LITERATURE REVIEW

Online Teaching Strategies-Independent Variable

Online education is also termed as *"distance education, "elearning", "online learning", "blended learning", "computer-based learning", "web-based learning", "virtual learning", "tele-education", "cyber learning", "Internet-based learning" and "distributed learning".* Scale of Online teaching strategy included the following 4 items: Instructor Strategy, Student interaction strategy, student motivation strategy and Institutional Strategy.

Instructor Strategy

It included the role of instructors, instructor skills required, course delivery system, teaching pedagogy and instructional tools. Easton (2003); Menchaca & Bekele (2008); Kennette & Redd (2015); Kim & Thayne (2015) have emphasized instructor presence as among the most critical of factors related to student success online. Beaudoin (2002) and Dennen (2008) explained the role of faculty to monitor student progress and address any early signs of difficulty or disengagement. Smith et al. (2005) remarked that engaging students in learning is principally the responsibility of the teacher, who acts as the designer and facilitator of learning experiences and opportunities. Garrison (2009) stated that high-quality faculty makes online education effective; it directly impacts the development of a learning community and interaction in online environments. Swan et al. (2008 & 2009) highlighted the significance of an active role played by instructor, which increases the cognitive and social presence of students in online teaching. Roblyer et al. (2010) focused on direct skills for the instructor to build confidence in online environments and transferable skills by enhancing online teaching skills. Brindley et al. (2009); Crawford-Ferre & Weist (2012); Gabriel & Kaufield, (2008); Keengwe & Kidd (2010) and Rao & Tanners (2011) viewed online instructors as facilitators who should foster a merger between diverse theories and live experiences. Keengwe & Kidd (2010) advised that online instructors should have clear and structured strategies for setting up and managing, obtaining and utilizing required resources, charting the sequence of activities, and structuring timelines. To enhance the quality of online teaching and learning, of all the tasks, they ranked direct instruction as a top priority, emphasizing the importance of the faculty role. Other top priorities included (1) curriculum setting up and development; (2) course design that utilizes content such as PowerPoint lecture notes, reflective personal insights, minilectures, etc.; (3) design and

facilitation of meaningful group and class activities; (4) establishment of schedules and timelines for required assignments; (5) providing guidelines and strategies enabling students to properly use the technologies related to online learning. Cheung & Lee (2010) suggested teachers should adopt effective online teaching methods into online courses to help students achieve better learning performances.

Student Interaction Strategy

Garrison et al. (2006) stated that one of the factor affecting online learners is to develop social bonds. It makes student feel secure and brings openness in his communication to deal with their peers. Effective instructor–student communication in online learning environments relies on timely and clear interactions through a variety of formats (Easton, 2003), including email, chat, live class questions, and assessment and feedback provision, collaborative activities such as discussion boards, instructor presence, and using a variety of instructional methods, receiving guidance by faculty mentors, feedback from student and peer evaluations, sharing of best practices among faculty in established e-college (online) communities or forums, and orientation programs for instructors transitioning into an online role. Muilenburg & Berge (2005), in their study found lack of social interaction to be the largest single barrier to student success online. The student-content interaction refers to the way that students get information and course materials, which can be in the form of texts, videos, audios, computer programs, web resources, etc. (Sher, 2009). The causes of student dissatisfaction were found lack of timely feedback or slow communication from instructors. In the absence of more immediate feedback methods available to on-campus instructors (e.g., face-to-face consultation), the assessment and feedback provided in online learning environments needs to be as clear and valuable as possible to promote student understanding (Darabi et al., 2006). Brindley et al. (2009); Bryant & Bates (2015); Sadera et al. (2009); Sher (2009); Whipp & Lorentz (2009); Yang et al. (2014) all these studies have illustrated the strong correlation between social interaction, sense of community, and their roles in achieving success in online learning. Whipp & Lorentz (2009) focused on the ways to maintain effective interaction by instructors in online courses. They suggested that instructors should provide timely, clear, and concise responses to students, ask challenging questions, elaborate and explain on specific issues in discussions, and summarize contents weekly,' offer direction and guidance to all students to participate. Live, *"virtual"* classrooms may also involve remote but instant methods of feedback between student and instructor, facilitated through live chat, video/webcam interactions, and small-group *"break-out rooms"*. Roblyer et al. (2010) highlighted the need to develop the student rapport in online settings. It can be built by effective monitoring of student progress, anticipation and resolution of key learning queries. Thistoll & Yates (2016) found that teaching practices including communication of deadlines and assessment requirements have been found to positively influence student engagement and course completion.

Student Motivation Strategy

Brindley et al. (2009) outlined more strategies in great details, including facilitating learner readiness for group work; providing scaffolding for developing skills; establishing a healthy balance between structure (clarity of task) and learner autonomy (flexibility of task); nurturing the establishment of learner relationships and a sense of community; monitoring group activities actively and closely; making group tasks relevant for learners; choosing tasks that can

be best suited for being performed by a group; and providing sufficient time for collaborative learning activities. Vonderwell & Savery (2004) characterized the main factors underlying readiness for online study. Tallent-Runnels and colleagues (2006) focused on important components of online education. They found that the learners' characteristics, the course delivery system, specific instructional tools, and the instructors play an important role for success of online education. Eom et al. (2006) tested a variety of variables and their impacts on student. They found that understanding how best to gauge student readiness or preparedness for online study is a critical institutional responsibility. The need of student support services in intensive online environments .According to their study technology cliches or lack of support services can act as a significant barrier to student engagement in learning. The *"four pillars"* of supporting student success when providing fully online courses, include online-friendly academic supports (assistance with navigating technology (Cheung & Lee, 2010), health and well-being facilities (Anderson & Schönborn, 2008) and a sense of belongingness, or community (Kumar & Heathcock, 2016). Oomen-Early & Murphy (2009) focused on sense of belonging as a key component that impacts student engagement and can act as a buffer against attrition.

Institutional Strategy

Garrison et al. (2006 &1999); Aragon (2003) and Garrison & Arbaugh (2007) stated in their findings that there is an institutional and faculty responsibility to create an inclusive, supportive structure where students can engage in social interactions and a sense of (online) community can be fostered. Pascarella & Terenzini (2005) emphasised on meaningful connections with the institution as a key ingredient in student engagement, they highlighted the need of active engagement in academic materials, and with instructors and peers, as a core component of successful learning for students. The integration of technology tools into classrooms is a growing trend worldwide. Koehler et al. (2013) suggested the TPACK model representing integration of technology, content knowledge, and pedagogy. Crawford-Ferre & Wiest (2012) stated that online faculty must be given the adequate training related to the online design and instructions. Crawford-Ferre & Wiest (2012) and Gabriel & Kaufield (2008) however, have found that most online faculty has not received adequate training and support from their institutions. Rao et al. (2014) suggested following institutional strategies to engage the students: universities must train faculty and students, provide the adequate technical support; give the faculty the release time for the online course development, with instructor-student interactions. They also suggested strategic instructions as a tool to keep students engaged. Roby et al. (2013) has also suggested that there are benefits to including students and instructors' input into the development and implementation of online courses, which can assist in keeping students engaged and thus achieve success.

Student Engagement-Dependent Variable

Student engagement refers to the students' commitment to learning. Engagement surveys define student engagement as involvement in activities and conditions that are linked with high-quality learning. Bomia et al. (1997) defined classroom engagement as students' willingness, need, desire, and compulsion to participate in, and be successful in; their learning processes. Student engagement is a multidimensional construct that can be measured with all the dimensions dynamically interrelated. Student engagement typically includes three dimensions:

- Behavioral engagement, focusing on participation in academic, social, and co-curricular activities
- Emotional engagement, focusing on the extent and nature of positive and negative reactions to teachers, classmates, academics, and school
- Cognitive engagement, focusing on students' level of investment in learning.

Christenson et al. (2001) believed student engagement be a malleable characteristic and a more appropriate focus for interventions. Gurung & Schwartz (2011) stated that engagement is an essential part of optimizing learning outcomes. Appleton et al. (2006) study has linked student engagement with improved academic performance and it has repeatedly demonstrated to be a robust predictor of achievement and behavior in the schools. Appleton et al. (2006) considered Student engagement as a construct that resonates with most consumers of education, including students and parents and presents an attractive focus for researchers and educators, in that compared to other predictors of academic success that are static. Oomen-Early & Murphy (2009) stated that a number of factors and situations can act as barriers to effect student engagement in online study, and online environments have long been known to face higher attrition rates than on-campus modes of study. Gettinger & Walter (2012) stated that student engagement is positively related to persistence and academic performance. Gurung & Schwartz (2011) suggested that student engagement provides an alternative metric for measuring learning experiences and success in education.

The literature review revealed that effective online teaching strategies play a significant role to support students who are facing challenges in the online setting. From the content analysis of the review, it was found that no specific research work is being done so far in the universities in Saudi Arabia to study the impact of online teaching strategies on the student Engagement during global lockdown. Hence the present study was undertaken to discuss best practices and strategies for greater effectiveness in online teaching. It is hoped that findings of the study will promote effective practices that can enhance universities and faculty success in transitioning to teach online.

MATERIALS AND METHODS

The type of research was descriptive in nature. Both primary and secondary data were used in this research. Secondary data included online research journal and suitable websites while primary data included a self designed structured questionnaire in the form of a survey. The population of this study comprised of the faculty members of various colleges in Riyadh city, Kingdom of Saudi Arabia. Data was collected randomly from 250 faculty members of various colleges of Princess NourahBint Abdulrahman University, King Saud University, Alfaisal University,Al Yamahah University, Prince Sultan University with the help of self designed questionnaire . Pilot testing was done to check the authenticity of questionnaire. The responses were recorded on a 5 point Likert scale ranging from strongly disagrees to strongly agree. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree). The independent variable was online teaching strategies. Following four items were included in the scale of online teaching strategy: Instructor Strategy, Student interaction strategy, student motivation strategy and Institutional Strategy. Dependent variable was Student Engagement. Student engagement scale typically included three dimensions: Behavioral engagement, focusing on participation of students in academic, social, and co-curricular activities during online teaching: Emotional engagement, focusing on the extent and nature of positive and negative reactions of students towards teachers, classmates, academics, and institute during online teaching and Cognitive

engagement, focusing on students' level of investment in learning during online teaching process. The data received from the respondents was analysed with the help of statistical software program SPSS 22. To analyse the data, descriptive statistics like mean and standard deviation were used. To analyse the relationship between the variables the data was analysed through Correlation Analysis, regression analysis and ANOVA.

Hypothesis

H_o *There does not exist a significant relationship between online teaching strategies & student engagement.*

H_1 *There exist a significant relationship between online teaching strategies and student engagement.*

RESULTS AND DISCUSSION

Table 1
CHALLENGES IN ONLINE TEACHING

Descriptive Statistics	Mean	Std. Deviation	N
Quality in online teaching	4.22	0.752	250
Student expectations in online teaching.	4.01	0.794	250
Exposed for the first time to incorporate online tools	4.14	1.064	250
Faced major changes in your work habits and working hours	3.96	0.791	250
Difficulty to achieve the student learning outcomes	4.22	0.899	250
Student orientation and support	3.98	0.838	250
Social Interaction	4.10	0.970	250
Monitoring student progress	4.14	0.817	250

Table 2
OPPORTUNITIES IN ONLINE TEACHING

Item Statistics	Mean	Std. Deviation	N
Reframe attitude towards digital learning	4.08	0.654	250
To learn more about digital tools and how to best leverage them	4.28	0.822	250
Become more modernize in my approach in giving instructions to students	4.26	0.855	250
Accelerated the integration of technology in Higher Education	4.08	0.738	250
Created awareness in me and students towards various digital educational platforms and in using new tools for online learning	4.02	0.766	250

The above Table 1 has been ranked on the basis of individual variable mean. It was found that during online teaching process in global lockdown the faculty faced the following challenges: maintaining quality in online teaching, meeting student expectations in online teaching, many faculty were exposed for the first time to incorporate online tools and faced major changes in their work habits and working hours. They found it difficult to achieve the student learning outcomes through online teaching process. They found it difficult to maintain student orientation and get the support of all students during teaching through online, as many students behave very passive learners instead of active learners. So, social interaction was also one of the major challenges identified during online teaching. The teachers as well as students who were tech savvy easily adapted to the new teaching-learning environment but those with

unavailability of infrastructural resources and lack of experience in using technology struggled to cope up with the changed pedagogy. The major challenge was handling technical issues, and monitoring of student progress. Due to lack of physical presence of the teacher, students had more distractions in participation in online session, they had the chance of logging on through their smart phones and skip the online sessions and watch a recording later.

On the basis of individual variable mean following opportunities were identified in online teaching process during global lockdown: It reframed the attitude of faculty towards digital learning, Faculty got an opportunity to learn more about digital tools and how to best leverage them, They became more modernize in their approach in giving instructions to students. The Online teaching process accelerated the integration of technology in Higher Education (Table 2). It created awareness in faculty and students towards various digital educational platforms and in using new tools for online learning.

Table 3
RELIABILITY STATISTICS

Online Teaching Strategies		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
0.865	0.868	4
Student Engagement		
0.827	0.829	3

Reliability test (Table 3) of online teaching strategies scale was done through Cronbach's Alpha. Following four items were included: Instructor strategy, student interaction strategy, student motivation strategy and Institutional strategy. Cronbach's alpha was determined as 0.865. The alpha value which was detected as higher than the threshold value of 0.7 proves that research scale was clearly understood by the participants and the question in the scale were not inaccurate.

Reliability test of student engagement scale was done through Cronbach's alpha was determined as 0.827. Following 3 items were included: Behavioral engagement, emotional engagement, cognitive engagement. The alpha value which was detected as higher than the threshold value of 0.7, proves that the research scale was clearly understood by the participant and the question in the scale were not inaccurate.

Table 4
CORRELATION ANALYSIS

		Total Online teaching strategy scale	**Total Student Engagement**
Total Online teaching strategy scale	Pearson Correlation	1	0.619**
	Sig. (2-tailed)		0.000
	N	250	250
Total Student Engagement	Pearson Correlation	0.619**	1
	Sig. (2-tailed)	0.000	
	N	250	250
** Correlation is significant at the 0.01 level (2-tailed).			

From the above Table 4 it was found that there exists a significant positive correlation

between online teaching strategies adopted by the faculty and the overall student engagement, r=0.619, p<0.01. Hence null hypothesis is rejected and alternate hypothesis is accepted that there is a significant relationship between online teaching strategies and student engagement.

Table 5
MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.619[a]	0.383	0.380	4.79497	1.661

a. Predictors: (Constant), Total online teaching strategies scale
b. Dependent Variable: Total student engagement

The above model summary Table 5 shows the R value which is 0.619 same as correlation matrix. And the value of R Square is denoted as .383 which means that the independent variable online teaching strategies explained 38.3% of the dependent variable that is student engagement. Therefore, there exists a significant relationship between the two variables online teaching strategies and student engagement, hence null hypothesis is rejected. After applying the linear regression on the collected data to check the cause and effect relationship between the online teaching strategies (independent variable) and student engagement (dependent variable) the above-mentioned result has been drawn.

Table 6
ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3538.198	1	3538.198	153.890	0.000[a]
	Residual	5701.946	248	22.992		
	Total	9240.144	249			

a. Predictors: (Constant), Total online teaching strategies scale
b. Dependent Variable: Total student engagement

The above Table 6 interprets that the null hypothesis is rejected as the significance value of ANOVA turns out to be .000 which is greater than the probability standard 0.05. The probability of f-statistic shows the significance of the research. According to the standard if the p value is <0.05 so than it is significant. In this study the above given table demonstrates the p value is 0.000 which is <0.05 thus the model of the research is statistically significant. So, the independent variable of the study, Online Teaching Strategy, has significant relationship with dependant variable of the study, Student Engagement.

Table 7
COEFFICIENTS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant	27.818	2.103		13.228	0.000		
Total online teaching strategies scale	0.633	0.051	0.619	12.405	0.000	1.000	1.000

a. Dependent Variable: Total online teaching strategies

The above Table 7 coefficient entails the value B, Beta which is known as rate of change. Significance value is denoted as 0.000 which means there is a significant relationship between these two variables. By keeping other things constant, if there is 1 % variance in online teaching strategy it would result a change of 63.3% in student engagement which is a significant score. The un-standardized value of the mentioned table illustrates obviously that independent variable online teaching strategy has a positive impact on student engagement in this study.

CONCLUSION

It was found that there exists a significant positive correlation between online teaching strategies: instructor strategy, student interaction strategy, strategy, student motivation strategy, Institutional strategy and the overall student engagement. The findings of this study shall prove useful to the faculty to understand their roles in online learning environment. It can further improve their students' learning performances and behaviours.

Suggestions

To improve student engagement in online teaching, the teaching should be based on students need. Learning material or teaching notes must be provided. Instructors must invest sufficient time and energy in preparation to teach online. Online faculty must undergo adequate training in the technologies applicable to online teaching: online instructors should show readiness for online study. They should be able to impart subject knowledge through online teaching. They should possess effective communication and administrative skills. They should be able to address any early signs of difficulty or disengagement during online teaching. They should be able to monitor student progress through online teaching. They should show responsiveness by promptly replying to questions and queries during online teaching. They should be available online at all times. They should frequently check for emails and text massages. They should be able to offer direction and guidance to all students to participate. Faculty must take regular feedback after the course delivery online. Through live chat, video/webcam interactions, and small-group break-out rooms. Faculty must be able to comprehend the personalities of the group's members in online teaching. Faculty must be able to create a supportive learning environment through the feedback process. The Institute must provide proper professional training to conduct sessions online. Faculty should receive sufficient technical support from the university so that they know what to do and whom to call when certain technology problems occur. Proper evaluation practices must be adopted by the faculty to keep student busy during social isolation. The online teaching strategy adopted by faculty must help the student's participation in academic, social, and co-curricular activities/Behavioral engagement, the online teaching strategy adopted by faculty must help the students to adopt positive attitude towards teachers, classmates, academics, and university/Emotional engagement. The online teaching strategy adopted by faculty must help the student's level of investment in learning/ Cognitive engagement. Moreover, a collaborative learning environment must be created. Teachers could even adopt digital games or social network games to engage learners, develop their motivation for learning, and further improve their learning performance.

Future Implication of Research

Further research can be undertaken to explore how to use technology and software to

engage students in multiple and ongoing dialogues in a variety of online formats. Moreover, future research can be focused on in-depth analysis of online instruction practices, step-by-step implementation, and the most effective practices for different online courses.

Limitation of Research

1. Impact of Demographic profile of respondents such as age, gender, qualification, experience was not considered on student engagement.
2. Five selected University of Riyadh were taken for the purpose of the study .All University and Colleges located in Riyadh Region were not included due to time constraint.
3. The findings of the study are limited to Higher Educational Institute and colleges located in Riyadh city, KSA.
4. Respondents were selected randomly; sample was not equally taken from all the colleges or departments of selected university.

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