

Exploring Students' Engagement in Distance Learning During the Pandemic Of COVID-19: A Correlational Exploratory Design

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Abstract

This study aims to examine the students' level of engagement in distance learning during the pandemic of COVID-19. Among all learning models, students' engagement is considering a challenging factor, however this is particularly true in a remote learning environment. To obtain the research aims, a quantitative method, precisely Correlational Exploratory Design is conducted. Thus, a questionnaire is designed to collect the essential data from students. A total of (359) participants from Taibah University across different departments and programs were participated and completed self-report measures. The questionnaire consists of two main parts: first demographic questions, second different types of engagements (cognitive, behavioral, emotional, and social engagement) in distance learning. Making sense of these variables, enables reconsidering the decision-making regarding improving how distance learning is practiced for more successful and meaningful delivery. The result demonstrated that social engagement domain has been the only indicators of differences between gender in which female were more socially engaged than male, thus enhancing students' social engagement is a critical area to be considered. Moreover, the participants in this study measured cognitive engagement with 'strongly agreed' measure. While behavioral and social engagement were just agreed. However, emotional engagement was reported by them as natural. This finding indicated that the students were ready to shift to distance learning during COVID-19 and they need emotional support during this time. This study suggests recommendations on how to improve students' engagement.

Keywords: Students' engagement. Distance Learning. COVID-19, Quantitative method.

1. Context of Research: Distance Learning in Saudi Higher Education

The coronavirus (COVID-19) was first identified as a contagious disease in January 2020 (Sahu, 2020). For this purpose, the health authorities recommended that educational institutions to be closed (Moawad, 2020). However, "the implementation of distance education became the only choice for educational institutions to continue their academic activities during the COVID-19 pandemic" (Hassan et al., 2021, p. 2). Distance learning platforms have been used to facilitate learning during this COVID-19 crisis. There were many challenges for these platforms to be succussed (Moawad, 2020). Therefore, it is important to understand how students learn and interact with the new learning experience.

Saudi Arabia was one of the recognized countries that provide online resources and training for educational institutions and families to use distance learning during this difficult time. There are many Saudi studies conducted to understand how students perceive the experience of fully adopting distance learning during the COVID-19 crisis. A study by (Al-Nofaie, 2020) showed that the students had high motivation levels towards using distance learning since they were aware of the importance of completing their degrees even though they may prefer in-class learning. (Bahanshal & Khan, 2021) studied the effect of COVID-19 on Education in Saudi Arabia and E-Learning Strategies. The result showed that most participants had positive attitudes toward E-learning and they were prepared to shift to online mode. Moreover, (Alshahrani, 2021) studied the readiness of using e-learning during the COVID-19 Pandemic. The study showed that the students were ready to shift to e-learning systems. The study also indicated that there was clear evidence that "universities originally adopting a blending learning system are more ready than their peers." (p.159). However, (Mahyooob, 2020) showed that students could not effectively interact with teachers during virtual classes.

1. Demographic Characteristics Impacts on Distance Learning

Demographic characteristics refer to attributes that describe the status of people or a person such as age, gender, ethnicity, or income. Prior studies have explored students' differences in distance learning among other factors

affecting academic performance. (Yu, Huang, Han, He, & Li, 2020) concludes that demographic information such as gender, level of study, and age has been a subject study in many research aimed to explore its impact in distance learning practice. Similarly (Ismail, Mahmood, & Abdelmaboud, 2018) reveals that students' demographic characteristics are among the most significant factors affecting the level of students' academic performance in distance learning. Subsequently, the need to ensure that learners are effectively and adequately engaged in the distance learning, exploring the impact of demographic characteristics impacts on students' engagement towards distance learning is a fundamental part of this study.

2. Students' Engagement in Distance Learning

Student engagement is defined as “the student's psychological investment in an effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote” (Lamborn, Newmann, & Wehlage, 1992, p. 12). Because online students have fewer opportunities to engage with the school, it is critical to understand their engagement in distance learning. According to (Martin & Bolliger, 2018), Students' engagement in online courses improves their motivation and performance, as well as their sense of isolation. In this paper, we adopt Balwant's definition which is defining engagement as the involvement in academic activities that are highly motivated and enjoyable on emotional, behavioral, and cognitive levels (Balwant, 2018). There are various types of engagement (Cognitive engagement, behavioral engagement, emotional engagement, and social engagement), that will be reviewed to understand how students can achieve success in distance learning.

1.1 Cognitive Engagement in Distance Learning

Cognitive engagement refers to making all the necessary efforts to comprehend difficult ideologies. Cognitive engagement can be defined as “the integration and utilization of students' motivations and strategies in the course of their learning” (Richardson & Newby, 2006) p. 23). According to (Yundayani, Abdullah, Tandiana, & Sutrisno, 2021), research on cognitive engagement and distance learning examined students' cognitive abilities, motivations, and experiences. The finding of their study also showed that the students were taking more ownership of their education in distance learning environments. Moreover, one study showed that higher-level thinking is encouraged by distance learning when students write reflections using asynchronous technology (Erdođdu & akirođlu, 2021). In a study to identify the role cognitive engagement played in distance learning, the researchers suggest that online course instructors, tutors, and designers should offer students tailored motivational scaffolding depending on their motivational profiles (Riaz, Batool, Naeem, & Qayyum, 2021). The demands of each student must be examined in order to determine the learning tactics and motivations used by the learners in the distance learning platforms (Park & Yun, 2018).

Cognitive engagement affects how much time and effort one puts into their schoolwork and is a useful indicator of what motivates them. Park and Yun (2018) described self-regulation learning as a top type of cognitive engagement because students develop their learning solutions. According to this study, students had different strategies that enabled them to succeed in their online classes. Additionally, the study aimed to determine whether the students were enrolled in online courses from various programs that used differentiated learning and motivational tactics. The researchers concluded that there was a substantial variation in the students' strategies based on their programs. According to (Cho, Cheon, & Lim, 2021), self-regulated learning considers the pinnacle of cognitive engagement, in which students discover their answers. Interacting with the subject, students, and instructors has a favorable impact on students' progress in distance learning. Students' cognitive engagement would rise because of a well-designed distance course.

1.2 Behavioral Engagement in Distance Learning

Behavioral engagement is termed as the participation, attention, persistence, effort, and positive conduct of students in their learning activities (Koko, 2019). Behavioral engagement denotes the efforts and participation an individual exerts to participate in the distance learning platform such as attending the class and asking instructors to expound where they have not understood. According to (Riaz, Batool, Naeem, & Qayyum, 2021), behavioral engagement explains that many elements are present in student engagement in the classroom setting. Collaborative learning with peers is also a right way of improving the behavioral engagement of learners as they get to share their knowledge.

Technology tools may also affect the student's distance learning platforms. A study by (Tang & Hew, 2022) founded that using asynchronous technology tools promoted reflection. The researchers also indicated that online classes made students collaborate more with their peers. (Koko, 2019) implied that more interaction with online discussion positively impacted the performance of students learning through the online platform. The study's findings established that the flexibility in distance learning is expected to encourage students to engage more with learning content in their own pace, leading to high learning performance. The study deduced that for distance learning to work, the stakeholders had to come together and assist each other. Furthermore, students, in distance

courses, can participate step by step in the learning process. They are in the position of learning by doing. Students would use the online resources, which would push them to analyze and integrate the content of their work and share their personal views. This develops their ability to construct their own knowledge and share their thoughts, experiences, and cultures with their peers (Milman, 2020).

1.1 Emotional Engagement in Distance Learning

Emotional engagement is termed to involve affective reactions such as enjoyment, rejection, sense of belonging, interest, joy, satisfaction, attitude, anxiety, boredom, and frustration to students (Henritius, Löfström, & Hannula, 2019). The socio-emotional communication that establishes the social presence in distance learning is essential for the engagement of students. The use of humor in distance learning can positively impact reducing the levels of stress and increasing further the students' attention. During this COVID-19 pandemic, most students have difficulties in their distance learning process due to their emotional engagements in studies. The punctuation marks can express emotions on the students' keyboard during their interactions in online lessons. These emotions can be used to create a more social atmosphere in the distance learning classroom and create connections with fellow students (You, 2022).

Emotional engagement denotes the reaction of students towards their peers, instructors, and other academicians. Emotional engagement is all about making the distance learning programs interesting through participation in group discussions. (Hughes, Wickersham, Ryan-Jones, & Smith, 2002) state that distance learning can fail due to many issues that may limit the students' success and instructors in the online platform. To improve student performance and engagement, instructors must ensure students engage in collaborative learning with their peers.

Emotional engagement is the right way of ensuring students are engaging with the course material as more time spent interacting with the course material increases students' performance (Salta, Paschalidou, Tsetseri, & Koulougliotis, 2022). Instructors need to ensure all students do not feel isolated or left out of the online platform classes. By encouraging group work and participation in all classes, students can get emotional engagement with their peers as they have been availed with a grading rubric which enables them to engage in collaborative learning (Hughes et al., 2002).

1.2 Social Engagement in Distance Learning

Social Engagement denotes the process of engaging or getting involved in interactive online activities. Students who engage in distance learning are more likely to be socially active with their peers, instructors, and academicians (Bernard et al., 2009). According (Martin & Bolliger, 2018), “engagement strategies are aimed at providing positive learner experiences including active learning opportunities, such as participating in collaborative group work, having students facilitate presentations and discussions, sharing resources actively, creating course assignments with hands- on components, and integrating case studies and reflections” (p. 206). To boost social engagement in distance learning, there are three basic engagement techniques that have been identified: student-content, student- instructor, and student-student. These techniques help students become active and more engaged in their online courses (Bernard et al., 2009).

(Salta et al., 2022) study showed that students mostly engaged in student–faculty interaction. The study also found that most students in online classes collaborated at least sometimes. The study suggested future studies to find out what promotes engagement in the online environment. (von Goble, 2022) study indicated that instructors should consider designing interactive online assignments where students can engage with the content and with each other. The study also showed when instructors create multiple channels such as e-mails to students and discussion forums in which the instructor interacts, students have higher engagement in the course. (Dumford & Miller, 2018) study indicated that students “were less likely to engage in collaborative learning, student-faculty interactions, and discussions with diverse others, compared to their more traditional classroom counterparts” (p. 452). The study suggested that faculty should find ways to encourage student engagement across a variety of delivery types. (Martin & Bolliger, 2018) found that instructor’s presence is the most important element in online courses. The study concludes that instructors who were responsive and supportive and who listened and communicated with students were very appreciated by the students.

RESEARCH AIMS AND QUESTIONS

There has been little known how higher education students in Taibah University in Saudi Arabia interacted and engaged with their online courses during the coronavirus crisis. Hence, this research will address gaps in the literature by examining students’ engagements in distance learning in higher education in Saudi Arabia. As such, this study and its results may provide implications for designing best practices in online environment and provide suggestions for future studies. Therefore, this study was designed to first determine the significant relationship between student engagement in distance learning and their demographic characteristics. Second to investigate the

extent of which students are engaged with the experience of distance education based on (Behavioural, cognitive, emotional, and social) influences during the COVID-19 pandemic in the one Saudi university.

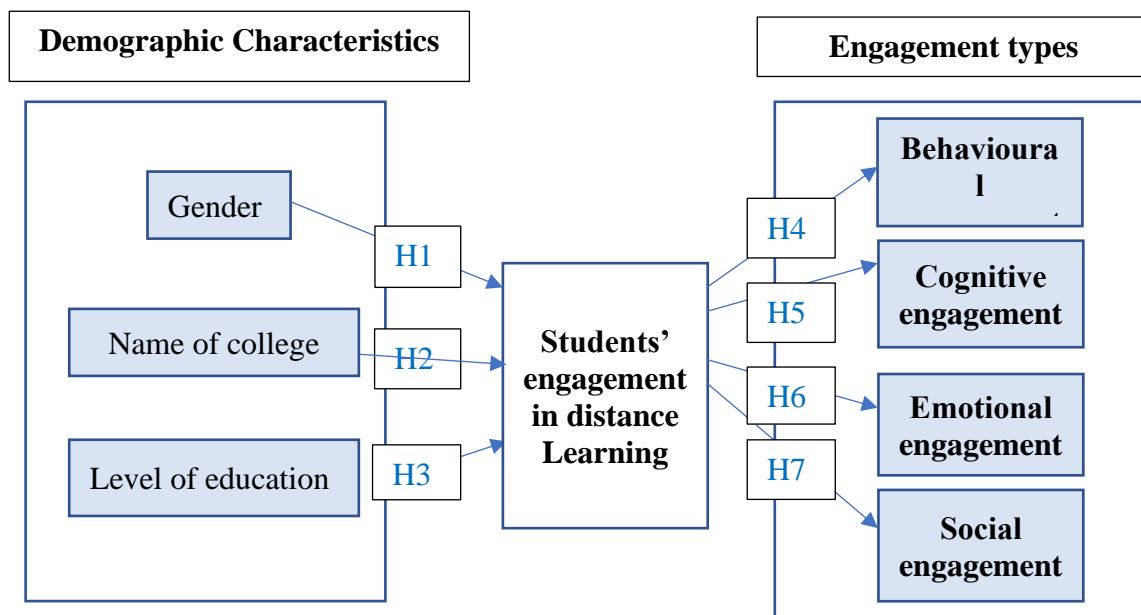
RQ1: what deterrents Saudi university students’ (Behavioural, cognitive, emotional and social) engagement in distance learning based on their demographic characteristics?

- H1: there is a significant difference in students level of engagement in distance learning and their gender
- H2: there is a significant difference in students level of engagement in distance learning and their name of college
- H3: there is a significant difference in students level of engagement in distance learning and their level of study

RQ2: To what extent Saudi university students are engaged with the experience of distance learning based on (Behavioural, cognitive, emotional, and social) influences?

- H4: distance learning has a positive effect in students’ behavioural engagement
- H5: distance learning has a positive effect in students’ cognitive engagement
- H6: distance learning has a positive effect in students’ emotional engagement
- H7: distance learning has a positive effect in students’ social engagement

Research framework



3.1 Methodology

To test the previous hypotheses and answer the research main questions, quantitative methodology has been found a constructive method. It is statistical representation of data that is collected and analyzed in numerical methods. It is useful when studying large group of people and thus generalize the finding to larger group (Swanson & Holton, 2005). Particularly, quantitative, correlational exploratory design is approached which is “a procedure in which the researchers hypothesizes a causal model and then empirically tests the model to determine how well the model fits the data” (Johnson & Christensen, 2013, p. 368), p.368). Therefore, it is a suitable method to test the relationship among the study’s variables and their degree of association (Creswell, 2002). Creswell, 2002 asserts that “a correlational design in which the researcher is interested in the extent to which two variables co-vary” (p. 363). As a result, it is an appropriate design that aligns with the research fundamentals.

3.2 data collection: The tool of the study

The researchers used the anonymous questionnaire as a tool to collect data, due to its suitability of the study aims, its curriculum, and its society, and to answer its questions. The questionnaire is considered one of the most important means of collecting data and codified information, and the most reliable. Participation was voluntary, and all responses were anonymous. After reviewing the educational literature and previous studies related to the subject of the current study and considering the data and questions of the study and its objectives, the tool (the questionnaire) was designed, and it organized into two parts. The following is a presentation of how it was constructed, and the procedures used to verify its authenticity and reliability: The first section: It contains an introductory introduction to the aims of the study, and the type of data and information that researchers want to

collect from members of the study sample, while providing guarantees of confidentiality of the information provided, and pledging to use it for scientific research purposes only. The second section: It consists of (12) items, divided into four main axes, the following table clarifies the number of expressions of the questionnaire, and how they are distributed among the axes.

Table (1) axes and terms of the questionnaire

Axis	Number of items
Behavioural engagement	3 items
Cognitive engagement.	3 items
Emotional engagement	3 items
Social engagement	3 items
Questionnaire	12 items

Validity for the tool of the study

Truthfulness of the study tool means making sure that it measures what was prepared as intended to include the questionnaire for all the elements that are included in the analysis on the one hand, and the clarity of its expressions on the other hand, so that it is understandable to everyone who uses it. The researchers have made sure the study tool is validated by:

Validate the internal consistency of the tool

To verify the validity of the internal consistency of the questionnaire, the Spearman's Correlation Coefficient was calculated to determine the degree of correlation of each of the questionnaire expressions to the overall degree of the axis to which the item belongs, and the following tables show the correlation coefficients for each of the axes including their terms.

Table No. (2) Spearman correlation coefficients for first-axis expressions with the overall grade of the axis

(Behavioural engagement)			
Item number	Item	correlation coefficient	Sig.
1	I set aside a regular time each week to work on Blackboard.	.801**	< 0.01
2	I took notes while studying the Blackboard.	.857**	< 0.01
3	I revisited my notes when preparing for Blackboard assessment tasks.	.889**	< 0.01
(Cognitive engagement.)			
Item number	Item	correlation coefficient	Sig.
1	I often searched for further information when I encountered something in the Blackboard that puzzled me.	.684**	< 0.01
2	When I had trouble understanding a concept or an example, I went over it again until I understood it.	.800**	< 0.01
3	If I watched a video lecture that I did not understand at first, I would watch it again to make sure I understood the content.	.779**	< 0.01
(Cognitive engagement.)			
Item number	Item	correlation coefficient	Sig.
1	I often searched for further information when I encountered something in the Blackboard that puzzled me.	.684**	< 0.01
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3	If I watched a video lecture that I did not understand at first, I would watch it again to make sure I understood the content.	.779**	< 0.01
(Emotional engagement)			

Item number	Item	correlation coefficient	Sig.
1	I was inspired to expand my knowledge in the Blackboard.	.831**	< 0.01
2	I found the Blackboard interesting.	.892**	< 0.01
3	I enjoyed watching video lectures in the Blackboard.	.895**	< 0.01
(Social engagement)			
Item number	Item	correlation coefficient	Sig.
1	I often responded to other learners' questions.	.827**	< 0.01
2	I contributed regularly to course discussions.	.876**	< 0.01
3	I shared learning materials (eg, notes, multimedia, links) with other classmates in the Blackboard.	.710**	< 0.01

**Significant at 0.01

It is clear from the previous table that the values of the correlation coefficient for each of the items with their dimension are positive, and statistically significant at the level of significance (0.01) or less, which indicates the validity of the internal consistency between the statements of the first axis, and their suitability to measure what was prepared to measure it.

The validity of the study tool:

The validity of the study instrument was confirmed by using the validity factor of Cronbach's Alpha (α), the next table shows the values of the parameters of the validity of each of the questionnaire axes.

Table No. (3) Alpha Cronbach coefficient to measure the validity of the study instrument

Axes of the questionnaire	N	constancy
Behavioural engagement	3	0.824
Cognitive engagement	3	0.659
Emotional engagement	3	0.845
Social engagement	3	0.773
General constancy	12	0.877

It is clear from the previous table that the general validity coefficient is high as it reached (0.877), and this indicates that the questionnaire has a high degree of validity reliable. that can be relied upon in the field application of the study.

3.3 Quantitative data analysis

Quantitative analysis was performed whereas descriptive correlational technique employed to the collected data. Correlational research means to the discovery of relationships between variables. "Investigators use a correlation statistical technique to describe and measure the degree of association between two or more variables" (Creswell, 2002, p. 361). To check the significant difference that found in factors that determines Saudi university students' engagement based on their demographic information, Mann-Whitney and Kruskal-Wallis tests have been used. To know the extent of Saudi university students engagement with distance education based on (Behavioural, cognitive, emotional, and social), iterations, percentages, arithmetic mean, standard deviations, and ranks for the responses of the members of the participants have been calculated on the terms of Saudi university students are actually engaged with the experience of distance education based on (Behavioural, cognitive, emotional, and social

3.4 Research participants

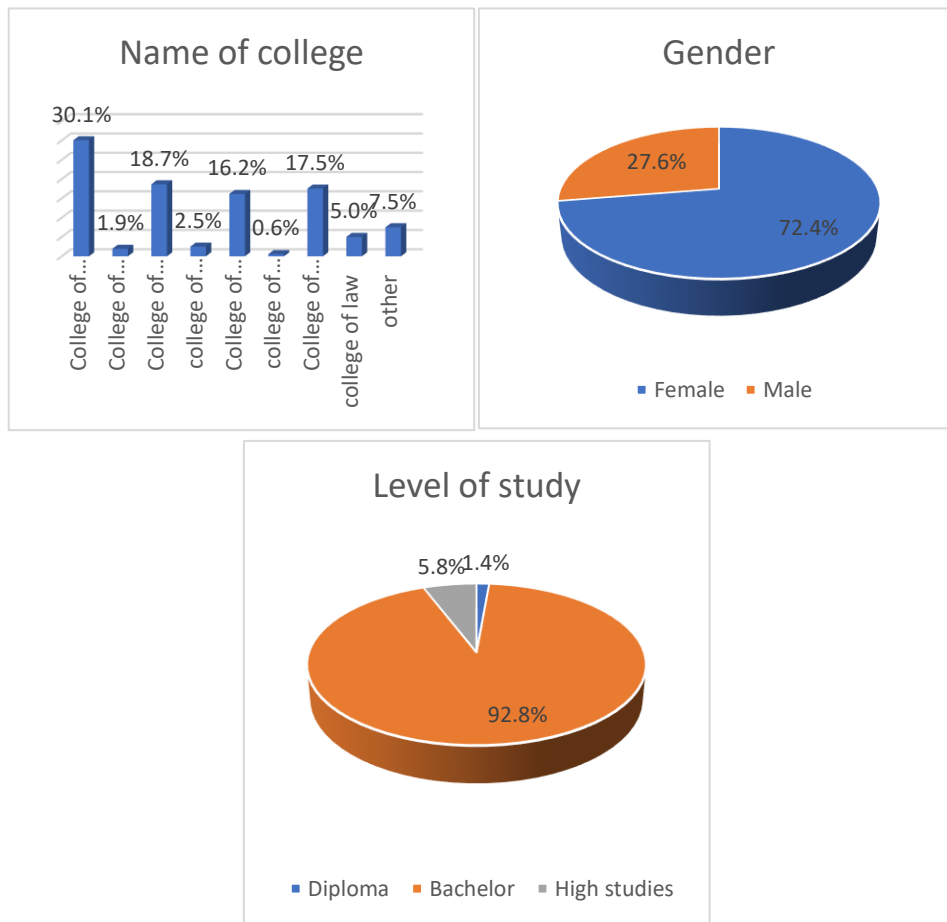
The sample consisted of online students at Taibah university cross various courses and study level. A random technique was used for recruiting participants to ensure the generalizability of the research. A "simple random sample" was used to select a representative sample whereby the selection of the population's members was done equally; thus, the chance of being selected was equal across the target population (Johnson & Christensen, 2013). A total of (359) participants completed the online survey.

Characteristics of the individuals in the study sample:

		Count	%
Gender	Female	260	72.4%
	Male	99	27.6%

Name of college	College of Computer Science and Engineering	108	30.1%
	College of Business administration	7	1.9%
	College of arts and Humanities	67	18.7%
	college of science	9	2.5%
	College of education	58	16.2%
	college of family science	2	0.6%
	College of applied Medical Science	63	17.5%
	college of law	18	5.0%
	other	27	7.5%
Level of study	Diploma	5	1.4%
	Bachelor	333	92.8%
	High studies	21	5.8%

The previous table indicate that 72.4% of the sample study were females. 30.1% of them study at Computer Science and Engineering college. 92.8% of them have a Bachelor. as indicated in the following figures:



Findings: hypothesis testing

- **H1: there is a significant difference in students level of engagement in distance learning and their gender**

Gender		N	Mean Rank	Mann-Whitney	Sig.
Behavioural engagement	Female	260	186.44	11196.000	0.054
	Male	99	163.09		
Cognitive engagement	Female	260	177.30	12167.000	0.416
	Male	99	187.10		
Emotional engagement	Female	260	180.30	12791.500	0.929
	Male	99	179.21		
Social engagement	Female	260	189.15	10491.500	0.006
	Male	99	155.97		

$$\alpha = 0.05$$

No significant difference in **behavioral engagement, cognitive engagement, emotional engagement** because the sig. value of Mann-Whitney test (0.054, 0.416, 0.929) frequently greater than 0.05, so we accept the null hypothesis which refer to no significant difference in **engagement** with level of confidence 95%. However, there was found a significant difference in **social engagement** because the sig. value of Mann-Whitney test (0.0006) less than 0.05, so we reject the null hypothesis and accept the alternative one which refer to there was found a significant difference in **social engagement** with level of confidence 95%.

- **H2: there is a significant difference in students level of engagement in distance learning and their name of college**

Name of college		N	Mean Rank	Kruskal-Wallis	Sig.
Behavioural engagement	College of Computer Science and Engineering	108	154.89	15.448	0.051
	College of Business administration	7	191.43		
	College of arts and Humanities	67	190.30		
	college of science	9	175.61		
	College of education	58	174.41		
	college of family science	2	117.75		
	College of applied Medical Science	63	214.20		
	college of law	18	178.50		
	other	27	191.22		
Cognitive engagement	College of Computer Science and Engineering	108	185.36	4.496	0.810
	College of Business administration	7	156.71		
	College of arts and Humanities	67	184.93		
	college of science	9	155.83		
	College of education	58	168.39		
	college of family science	2	91.50		
	College of applied Medical Science	63	176.50		
	college of law	18	200.69		
	other	27	186.31		
Emotional engagement	College of Computer Science and Engineering	108	164.37	11.766	0.162
	College of Business administration	7	142.29		
	College of arts and Humanities	67	172.32		
	college of science	9	147.11		
	College of education	58	199.41		
	college of family science	2	154.00		
	College of applied Medical Science	63	193.49		
	college of law	18	227.72		
	other	27	179.26		

Social engagement	College of Computer Science and Engineering	108	148.25	30.173	0.000
	College of Business administration	7	130.07		
	College of arts and Humanities	67	212.60		
	college of sceince	9	148.06		
	College of education	58	211.70		
	college of family sceince	2	108.25		
	College of applied Medical Science	63	167.37		
	college of law	18	222.19		
	other	27	188.30		

$$\alpha = 0.05$$

No significant difference in behavioural engagement because the sig. value of Kruskal-Wallis test (0.051) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in behavioural engagement with level of confidence 95%. No significant difference in cognitive engagement because the sig. value of Kruskal-Wallis test (0.810) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in cognitive engagement with level of confidence 95%. No significant difference in emotional engagement because the sig. value of Kruskal-Wallis test (0.162) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in emotional engagement with level of confidence 95%. There was found a significant difference in social engagement because the sig. value of Kruskal-Wallis test (0.000) less than 0.05, so we reject the null hypothesis and accept the alternative one which refer to there was found a significant difference in social engagement with level of confidence 95%.

- **H3: there is a significant difference in students level of engagement in distance learning and their level of study**

Level of study		N	Mean Rank	Kruskal-Wallis	Sig.
Behavioural engagement	Diploma	5	196.30	1.889	0.389
	Bachelor	333	177.95		
	High studies	21	208.62		
Cognitive engagement	Diploma	5	152.30	0.471	0.790
	Bachelor	333	179.97		
	High studies	21	187.12		
Emotional engagement	Diploma	5	205.10	4.262	0.119
	Bachelor	333	176.90		
	High studies	21	223.19		
Social engagement	Diploma	5	200.80	12.719	0.002
	Bachelor	333	174.85		
	High studies	21	256.71		

$$\alpha = 0.05$$

No significant difference in **behavioural engagement** because the sig. value of Kruskal-Wallis test (0.389) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in **behavioural engagement** with level of confidence 95%. No significant difference in **cognitive engagement** because the sig. value of Kruskal-Wallis test (0.790) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in **cognitive engagement** with level of confidence 95%. No significant difference in **emotional engagement** because the sig. value of Kruskal-Wallis test (0.119) greater than 0.05, so we accept the null hypothesis which refer to no significant difference in **emotional engagement** with level of confidence 95%. There was found a significant difference in **social engagement** because the sig. value of Kruskal-Wallis test (0.002) less than 0.05, so we reject the null hypothesis and accept the alternative one which refer to there was found a significant difference in **social engagement** with level of confidence 95%.

RQ2: To what extent Saudi university students are actually engaged with the experience of distance learning based on (behavioural, cognitive, emotional and social) influences?

- **H4: distance learning has a positive effect in students’ behavioural engagement**

Table No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance learning based on behavioural, descending according to the Means of approval.

No.	Item	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std. Deviation	Extent	Order
		Count	%	Count	%	Count	%	Count	%	Count	%				
1	I set aside a regular time each week to work on Blackboard.	11	3.1%	29	8.1%	55	15.3%	122	34.0%	142	39.6%	3.99	1.07	Agree	1
2	I took notes while studying the Blackboard.	12	3.3%	45	12.5%	45	12.5%	125	34.8%	132	36.8%	3.89	1.13	Agree	2
3	I revisited my notes when preparing for Blackboard assessment tasks.	10	2.8%	57	15.9%	49	13.6%	129	35.9%	114	31.8%	3.78	1.14	Agree	3
Behavioural engagement												3.8867	.95954	Agree	

In the previous Table it is clear that the participants agree with the behavioural engagement with an average of (3.88 from 5.00), an average that falls in the fourth category of fifth scale categories (from 3.4 to 4.2). It is clear that the participants agree on all features of behavioural engagement, which was arranged in descending order according to the approval of the participants as follows: The item No. (1), which is: “ I set aside a regular time each week to work on Blackboard.” come first in terms of approval of the participants with an average of (3.99 out of 5). The item No. (2) came: “ I took notes while studying the Blackboard.”, in the second place in terms of approval of the participants with an average of (3.89 out of 5). The item No. (3): “ I revisited my notes when preparing for Blackboard assessment tasks.” came third in terms of approval of the participants with an average of (3.78 out of 5), as indicated in the following figure:

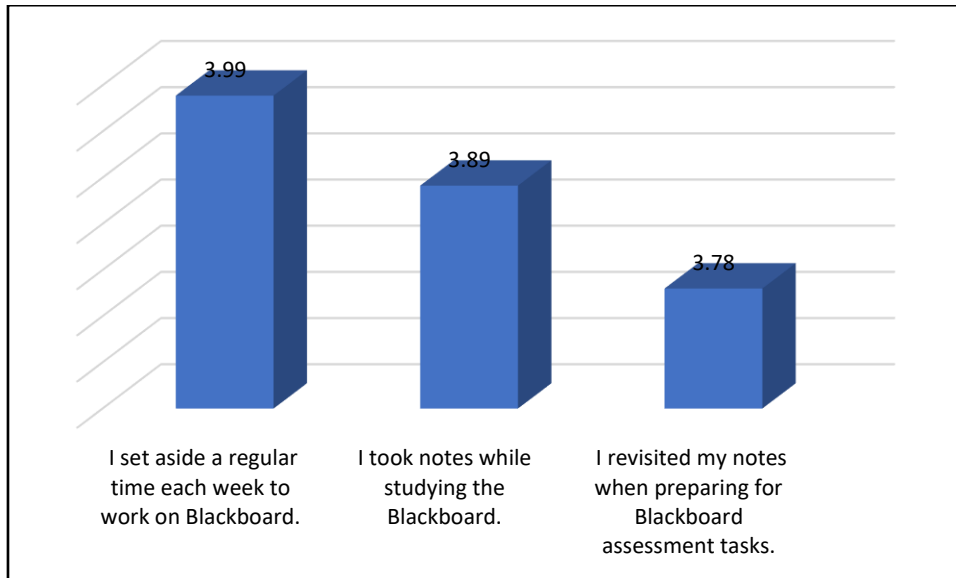


Figure No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance education based on behavioural, descending according to the Means of approval.

- **H5: distance learning has a positive effect in students’ cognitive engagement**

Table No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance education based on cognitive, descending according to the Means of approval.

N o.	Item	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std. Deviation	Extent	Order
		Count	%	Co unt	%	Co unt	%	Co unt	%	Cou nt	%				
1	I often searched for further information when I encountered something in the Blackboard that puzzled me.	6	1.7%	15	4.2%	27	7.5%	138	38.4%	173	48.2%	4.27	0.90	Strongly Agree	1
2	When I had trouble understanding a concept or an example, I went over it again until I understood it.	4	1.1%	17	4.7%	28	7.8%	148	41.2%	162	45.1%	4.25	0.87	Strongly Agree	2
3	If I watched a video lecture that I did not understand at first, I would watch it again to make sure I understood the content.	12	3.3%	33	9.2%	33	9.2%	91	25.3%	190	52.9%	4.15	1.13	Agree	3
cognitive engagement												4.2238	.74935	Strongly Agree	

In the previous Table it is clear that the participants strongly agree with the cognitive engagement with an average of (4.22 from 5.00), an average that falls in the fifth category of fifth scale categories (from 4.2 to 5). It is clear that the participants strongly agree on most features of cognitive engagement, which was arranged in descending order according to the approval of the participants as follows: The item No. (1), which is: “ I often searched for further information when I encountered something in the Blackboard that puzzled me.” come first in terms of approval of the participants with an average of (4.27 out of 5). The item No. (2) came: “ When I had trouble understanding a concept or an example, I went over it again until I understood it..”, in the second place in terms of approval of the participants with an average of (4.25 out of 5). The item No. (3): “ If I watched a video lecture that I did not understand at first, I would watch it again to make sure I understood the content..” came third in terms of approval of the participants with an average of (4.15 out of 5), as indicated in the following figure:

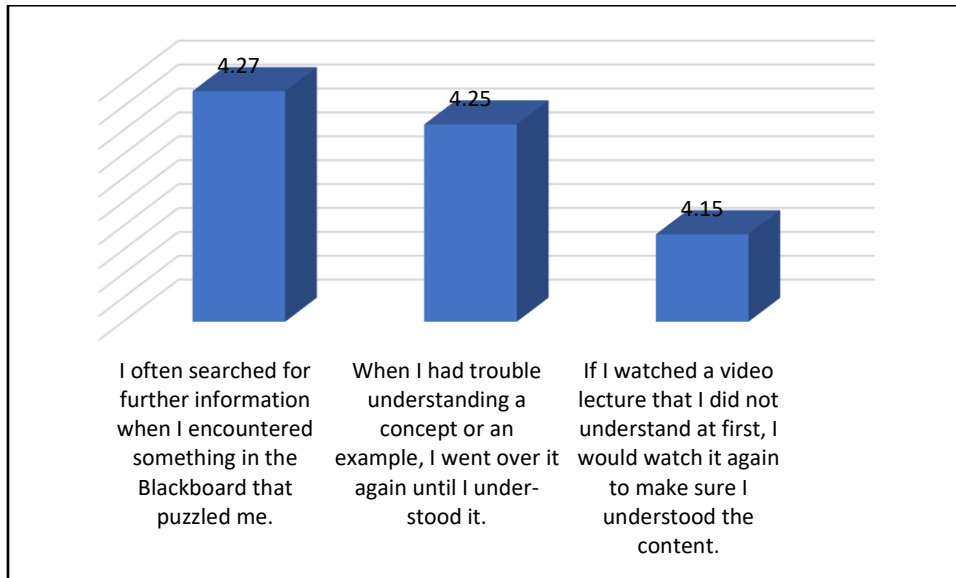


Figure No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance learning based on cognitive, descending according to the Means of approval.

• **H6: distance learning has a positive effect in students’ emotional engagement**

Table No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance education based on emotional, descending according to the Means of approval.

N o.	Item	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std. Deviation	Exte nt	Ord er
		Co unt	%	Co unt	%	Co unt	%	Co unt	%	Co unt	%				
1	I was inspired to expand my knowledge in the Blackboard.	37	10.30%	55	15.30%	79	22.00%	106	29.50%	82	22.80%	3.39	1.27	Neut ral	2
2	I found the Blackboard interesting.	51	14.20%	56	15.60%	60	16.70%	83	23.10%	109	30.40%	3.4	1.42	Neut ral	1
3	I enjoyed watching video lectures in the Blackboard.	85	23.70%	68	18.90%	49	13.60%	49	13.60%	108	30.10%	3.08	1.57	Neut ral	3
Emotional engagement												3.2888	1.24791	Neutral	

In the previous table it is clear that the participants Neutral with the emotional engagement with an average of (3.28 from 5.00), an average that falls in the third category of fifth scale categories (from 4.2 to 5). It is clear that the participants Neutral on most features of emotional engagement, which was arranged in descending order according to the approval of the participants as follows: The item No. (2), which is: “ I found the Blackboard interesting.” come first in terms of approval of the participants with an average of (3.4 out of 5). The item No. (1) came: “ I was inspired to expand my knowledge in the Blackboard.”, in the second place in terms of approval of the participants with an average of (3.39 out of 5). The item No. (3): “ I enjoyed watching video lectures in the Blackboard.” came third in terms of approval of the participants with an average of (3.08 out of 5), as indicated in the following figure:

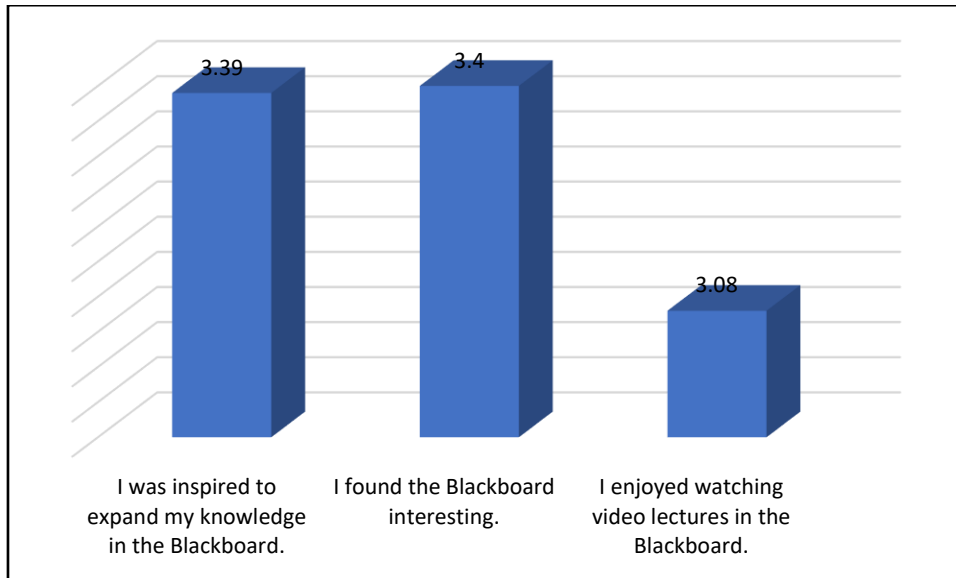


Figure No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance education based on emotional, descending according to the Means of approval.

- **H7: distance learning has a positive effect in students’ social engagement**

Table No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance education based on social, descending according to the Means of approval.

N o.	Item	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std. Deviation	Extent	Order
		Count	%	Co unt	%	Co unt	%	Count	%	Co unt	%				
1	I often responded to other learners’ questions.	20	5.6%	48	13.4%	75	20.9 %	144	40.1%	72	20.1%	3.56	1.12	Agree	2
2	I contributed regularly to course discussions.	30	8.4%	46	12.8%	72	20.1 %	114	31.8%	97	27.0%	3.56	1.24	Agree	3
3	I shared learning materials (eg, notes, multimedia, links) with other classmates in the Blackboard.	16	4.5%	25	7.0%	49	13.6 %	141	39.3%	128	35.7%	3.95	1.08	Agree	1
Social engagement												3.6890	.95433	Agree	

In the previous table it is clear that the participants agree with the social engagement with an average of (3.68 from 5.00), an average that falls in the fourth category of fifth scale categories (from 4.2 to 5). It is clear that the participants agree on most features of social engagement, which was arranged in descending order according to the approval of the participants as follows:

The item No. (3), which is: “I shared learning materials (eg, notes, multimedia, links) with other classmates in the Blackboard.” come first in terms of approval of the participants with an average of (3.95 out of 5). The item No. (1) came: “I often responded to other learners’ questions.”, in the second place in terms of approval of the participants with an average of (3.56 out of 5). The item No. (2): “I contributed regularly to course discussions.” came third in terms of approval of the participants with an average of (3.56 out of 5), as indicated in the following figure:

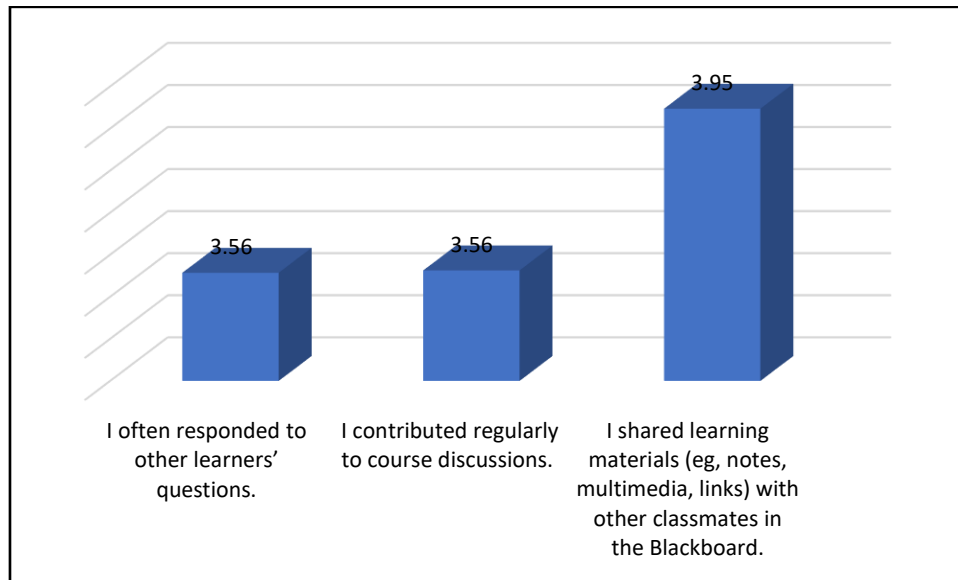


Figure No. () Responses of the participants about the extent of Saudi university students are actually engaged with the experience of distance learning based on social, descending according to the Means of approval.

Discussion

RQ1: what deterrents Saudi university students' (Behavioural, cognitive, emotional and social) engagement in distance learning based on their demographic characteristics?

The main observable trend within the findings tied social engagement domain as the main indicator with a significant difference cross all categories of gender, subject of study and level of education. Whereas other engagement domains (behavioral, cognitive, emotional) showed slight differences based on demographic variables. Regarding gender female students showed higher level of social engagement than in their male fellow students. In line with previous studies showing Female socially more engaged than male in distance learning, (Nistor, 2013) asserts that males were more stable in attitudes, while females performed well in engagement. (Alghamdi, Karpinski, Lepp, & Barkley, 2020) study conclude that gender differences in overall engagement of distance learning have led to more positive online learning outcomes of females than males due to the females' stronger self-regulation than males. It is evident that students were able to build self-learning strategies that would enables behavior, cognitive and emotional engagement, however, they were not able to approach social one. Hence, indicating that social engagement has a huge consequence on students' level of general engagement leads to the importance of developing students' social experience on distance education. This finding aligns with (Altuwairesh, 2021) (Alawajee, 2021) studies indicates students' negatively experienced low-interaction and communication level in distance learning. In line with (Alawajee, 2021) findings which indicates distance learning supports students learning process by becoming more like self-educated and self-learner, thus, becoming more independent learners. Such absence of face-to-face interaction hinder students' motivation in distance learning, in which both above-mentioned studies suggested that building positive students-instructors, students-students, and students-content interactions is a vital requirement for distance learning improvement. Distance learning platforms offer many social interactions opportunities synchronously and asynchronously, such as video conferencing, online forum discussions and much more. In which communities can be constructed, sense of belonging can be shaped, relationships can be developed, and trust can be established within a safe environment. However, this study findings stated that these opportunities found to be challenging to put into practice which might be related to the fact that distance learning in Saudi higher education grew suddenly with lack of groundwork (Aladsani, 2021). (Venton & Pompano, 2021) study reveals that student's level of engagement is greater in distance class where active learning is a central component of instruction. Unquestionably, promoting student engagement is heavily associated with the instructor's role and this role is a continues one throughout the course duration and it could be taking a place in different forms such as guide, feedback, learning activities (Yu et al., 2020).

RQ2: To what extent Saudi university students are actually engaged with the experience of distance learning based on (Behavioural, cognitive, emotional and social) influences?

The second research question attempted to explore the following: To what extent Saudi university students are actually engaged with the experience of distance learning based on (Behavioural, cognitive, emotional and social)

influences? In response to this question, students expressed positive agreement about behavioural, cognitive, emotional, and social engagements in distance learning. The result showed that the students enjoyed the experience of distance learning. The findings are in line with the previous studies reported by (Al-Nofaie, 2020) (Bahanshal & Khan, 2021) (Alshahrani, 2021) (Ta'amneh, 2021) who found that the students had positive attitudes towards E-learning and they were prepared to shift to online mode. It is important to note that, Taibah University has been using the Blackboard system as eLearning tool since 2008 (Taibah University, n.d.). This indicate that faculty members and the students were ready to adopt the Distance learning during the COVID-19 crisis and the finding of this study are not surprising. Therefore, it seems that the participants enjoyed and engaged in distance learning during the COVID-19 pandemic due to existence of eLearning tools and prior experience. The participants in this study agreed on all features of behavioral engagement and strongly agreed on most features of cognitive engagement. The participants expressed Neutral on most features of emotional engagement and agreed on most features of social engagement.

The result showed that the highest engagement that students agreed with was the cognitive engagement. This indicate that students could take more responsibility for their own learning in distance environments. Also, students could have Self-regulation learning strategies that enabled them to succeed in their online classes as (Park & Yun, 2018) mentioned in their study. The study also showed that the second engagement that students had were behavioral engagement and social engagement which showed that the students are able to participate and contract their own knowledge, share their thoughts, and participate in online discussion. This finding is in line with previous study reported by (Tang & Hew, 2022) who found that the distance learning promotes reflection and interaction. Moreover, Students expressed Neutral when asked about their emotional engagement with the experience of adopting distance learning. This revealed that the students were incretin and maybe they were stress due to the first experience of fully incorporating the distance learning and they could be worried about their grades and tests. This finding is in line with previous study reported by (Mahyoob, 2020) who found that students were not satisfied with distance learning due to many obstacles including testing.

Conclusion

Due to COVID-19 crisis our life has changed including the way we teach and learn. Integrating Distance learning has had both positive and negative impacts on students. In order to understand how students engaged in this new environment, this study has attempted to investigate how students are engaged with the experience of distance education based on behavioural, cognitive, emotional, and social influences. The result showed that fully implementing distance learning at Taibah University was effective and successful solution for the students during the COVID-19 crisis. Distance learning may face different challenges, but it has the potential to replace traditional classrooms in the future. The finding of the study showed four different students' engagements towards the distance learning during the COVID-19 period. The finding indicated that there was significant different between students' social engagement. The study also revealed that students had the lowest emotional engagement.

Therefore, the distance learning is bound to succeed if the stakeholders take the necessary steps. Institutions need to invest more in distance learning platform to ensure all students can access this platform. It is also important to conduct a needs assessment for students and faculty members during remote and hybrid learning to provide resources during these challenging times of anxiety and uncertainty. The role of instructors is to create purposeful course designs that increase students' interaction and engagements. Faculty members should be advised on the way to incorporate new teaching and assessment experience to engage students during the online courses. It is essential for instructors to listen to students' concerns and offer them the opportunity to have a one-to-one conversation to reconnect and discuss any distresses that might have arisen during the adoption of distance learning. Extensive training must be provided to instructors to equipped them with the know-how necessities to enhance students' social engagement in distance education. Especially in how to incorporate social learning theories into the design of online courses that would enables the active learning. It recommended that the four level of engagement to be part of the instructional design.

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