# The Role of Online Learning During and Post COVID-19: A Case of Psycho-Social Study

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**Abstract**

To prevent Coronavirus (COVID-19) pandemic, distance (online) learning has quickly become the acceptable alternative option to classroom learning. This is because distance learning does not only provide a safe learning environment for students during COVID-19, but also effective social learning environment (Beck, 2015). The current study is based on Deci and Ryan's Cognitive Evaluation theory (1985), as it applies to home education and has been found that the whole home learning process is based on a student's intrinsic motivation to learn (Riley, 2016). The primary aim of the study is to examine how two basic psychological needs of competence and relatedness enhance learners' intrinsic motivation to learn at home during COVID-19 pandemic, as pointed out by the Cognitive Evaluation theory (1985). Secondly, it aims to find out to what extent distance learning can replace the classroom learning once the COVID-19 pandemic ends. A quantitative Intrinsic Motivation Inventory (IMI) scale was administrated with 120 undergraduate students to assess the two basic student psychological needs: competence and relatedness. A stimulated recall method was employed through using a videotaped replay where 10 female students' online learning action was recorded. The results indicated that focusing on the two basic learners' psychological needs, competence and relatedness, can significantly enhance leaners' intrinsic motivation. These, in turn, can significantly enhance students to learn during COVID-19. The current study findings provide valuable insights into online learning based on learners' intrinsic motivation.

## 1. Introduction

Under the Vision 2030 policy document, a completely paper-less school system was envisioned; and in tune with this covenant, all textbooks in 2018 were made available to school students via a digital portal. The administration pro-actively took up the spread of e-learning by establishing e-learning units in universities and institutions of higher education; namely, a National Centre for e-learning, and the launch of capsule programs to fulfil learners' needs (Al-Shehri, 2016). The outbreak of the COVID-19 pandemic on a global scale, however, completely changed the base of learning from school premises to the virtual world. As the ongoing challenge of containing the

spread of the Coronavirus necessitates suspension of contact classes, and the measure has proven to be useful as the millions constituting the student community were effectively removed from the infection chains that the virus characteristically forms. The immediate urgency of 'getting online' triggered by the Covid19 pandemic, added to the burden and workload of university faculty and staff as they had to train and teach their students from home even with all the logistical and technological difficulties. Motivation, which plays a dominant role in student performance in online courses (Stark, 2019), however, can play a significant role in tiding over the extraneous obstacles. In support of this, Deci and Ryan's (1985) Cognitive Evaluation Theory, which applies to home-based education, found that the whole home learning process is based on a student's intrinsic motivation to learn. Moreover, many studies (Artino, 2008; Keller, 2008; Park & Choi, 2009; Luanganggoon, 2020) have pointed out the significance of motivation in online learning. These studies also provide an understanding of psycho-social factors that is required for creating effective online learning environments. The goal of the current study is to explain some of the key aspects relating to learners' intrinsic motivation that may enhance their online learning experience during the COVID-19 phase by focusing on two basic psychological needs; namely, competence and relatedness. This paper, then, in Section 2 sheds light on the online learning and the important role of students' intrinsic motivation in online-learning. In Section 3, the research objectives and methods for the current study are outlined. In Section 4, an overview of the results and the discussion are offered. Finally, Section 5 concludes with a summary shown the key findings of the current study and some suggested implications.

## 2. Literature Review

### 2.1 Online Learning

The word online learning has a wide range of interpretations but is frequently used. For the purposes of this study, online learning applies to Internet-mediated learning. In an online learning scenario, students are distant from the teacher, and they use technology for accessing learning materials, to interact with the teacher, and for peer interaction (Khater, El-Nagar, El-Bardini, & El-Rabaie 2020; Al-Ahdal, 2020). Online learning involves different tools, content, pedagogical approaches, roles, corporate systems and means of participation, monitoring and assistance. Online learning will, then, benefit students, specially who face certain practical problems. In reaction to

the Covid 19 pandemic, the accelerated closure of face-to-face classing has presented teachers with a considerable grasp of the distinction between online education and other modes of learning. Hannahan (2020) enunciates that the Covid-19 crisis has been a significant one because it jolted teachers to reflect into the status quo and explore new approaches to imparting quality education. Kim (2020) has linked online learning directly to institutional resilience and academic continuity. Greenhow (2018) states that online learning may even be better than in-person classroom learning provided it is 'done right'. However, there are contradictory studies on the success of online learning as compared to contact classes, particularly for the low achievers (Harrington, 1999); and the concerns with drop-out rates (Boston & Ice, 2011). In the post digital truth, one can argue that, online is no longer a helpful representation of the actual experience of students (Marschall, Cho & Savin, 2020), particularly where Internet-connected devices are used so frequently.

Likewise, Alfallaj (2020) analysed Saudi EFL students' views regarding the positive and negative effects of tech-enabled classes. He used the survey approach with 120 students from two Qassim University affiliates by administering a questionnaire to collect data. The results revealed that students shared a positive opinion for the usage of intelligent devices in EFL learning since they were inseparable from their devices and welcomes the opportunity to use them in the classrooms. In the meantime, they saw how they could efficiently use their smart devices as EFL learning tools, making learning an everyday habit. The findings have consequences for the right incorporation of ICT into language learning. In another study, Al-Ahdal and Alqasham (2020) looked at how EFL learning is greatly enhanced with digital tools and also fosters autonomy as it creates opportunities for individual effort**.**

**2.2 Role of learners' Intrinsic Motivation in Online Learning - Cognitive Evaluation Theory**

Studies show that, motivation plays an important role in learning, in general; and in online learning (home/distance learning), in particular (Paris & Turner, 1994). Highly motivated learners are more willing to face challenges in their studies, more actively engaged in the learning process; and thereby gain more enjoyment (Schunk & Usher, 2012). Successful home-learners have long had an association with concepts of independence, self-direction and, perhaps most importantly, intrinsic motivation (Moore, 1989), which has been identified as an essential characteristic of online learners (Shroff, Vogel, Coombes & Lee, 2007). Cai, Reeve, & Robinson (2002) and Cogan (2010) found that, home-educated school-aged students academically outperformed their

classroom-educated peers, attaining both higher test scores and graduation rates. However, several studies identified that, the dropout rates become higher in university level courses delivered online compared with those delivered in class, due to poor motivation, feelings of isolation, and use of complex technology (Artino, 2008; Keller, 2008; Park & Choi, 2009). Therefore, it has been shown from this review that, even though the above studies look at different age levels and contexts, home, or online, learning requires motivation, which leads students to do better than that of classroom learning.

As the current study directly links to motivation, Deci and Ryan's (1985) Cognitive Evaluation theory could be closely pertinent. It is a sub-theory of Self-determination theory (Ryan & Deci, 2000b), which is designed to demonstrate the relationship between two forms of motivation: intrinsic and extrinsic. Intrinsic and extrinsic motivation have been widely investigated and different definitions have been given to distinguish between these two terms (Heckhausen & Rheinberg, 1980; Krapp, 1999; Rheinberg, 2000). However, all these definitions share the view that *intrinsic* comes from *within,* while *extrinsic* comes from *outside* as a motivation type (Heckhausen, 1991). People can be considered as extrinsically motivated if they behave as causes of subject or rewards outside them, whereas a case of intrinsic motivation means feeling self-determined, on other words, as causes of their own behaviour. Intrinsic motivation is defined as attaining innate satisfaction from performing an activity, and applies to students who perform educational tasks with a passion, interest and energy that leads to learning development (Deci & Ryan, 1985; Ryan & Deci, 2000a). Intrinsic motivation is more strongly associated with home education than traditional classroom learning, since the entire home learning process revolves around a student's level of intrinsic motivation; and as Riley (2016) assumed it can be difficult to develop intrinsic motivation in traditional classrooms due to curriculum and time constraints.

Cognitive Evaluation theory focuses on two factors to facilitate students' intrinsic motivation to learn at home, the social and the environmental, by focusing on three basic psychological needs: competence, autonomy, and relatedness. The current study focuses on two of these factors; namely, competence and relatedness, because they are more relevant.

### 2.2.1 Competence and Relatedness

One of the main psychological needs is competence, which requires positive feelings towards performing activities and successful experiences, because it is related to the concept of challenge.

Competence results in the development of intrinsic motivation when students explore their environment (Ryan &Deci, 2008). As Riley (2016), a sense of competence arises when students feel autonomous in controlling their lives and learning. This also refers to overall feelings of positivity (Deci & Ryan, 1985) fostered in an environment of optimal challenge.

Another psychological need is relatedness, which is related to connectedness, whereby students feel connected to their learning society (Stanley & Plucker, 2008). Riley (2016) notes that it is a feeling wherein learners feel connected or affiliated to their educators and learning environment. Research shows that the more parents and teachers are involved with their students' education the more highly motivated and self-directed the student become (Vallerand, Pelletier, & Koestner, 2008). This connection has the potential to make students more successful both academically and personally, due to its important role in increasing their engagement in the educational setting. Thus, the current study has predicted that, students need to feel positive towards what they do and engaged with their community, during current circumstances and Corona crisis, to become intrinsically motivated learners, which lead ultimately to learning development.

### 2.3 Research Gap and Significance

The global outbreak of the COVID-19 pandemic necessitated a shift in the education base from classrooms to home computer screens, changing to reality what had so far been a conjecture in academics. Online learning, consequently, was seen as a viable alternative where students could learn effectively as well as be safe. Till the development of this new situation, universities in KSA took a few online classes a week; and those too more in the nature of fun activities than hardcore lesson delivery. But the new online learning initiatives have ushered in a completely technology driven education system. With so many new challenges, the motivation to study is bound to be affected, especially with the complete social isolation of student community not only from their institutions and teachers, but also from their peers. Large scale non-campus education is certainly new to both teachers and students creating a need for further investigations into the role of online learning during and Post COVID-19. There was a need, particularly, to evaluate the factors of competence and relatedness which translate to learners' ability to succeed in learning autonomously and yet feeling the essential connectedness to the teachers and peers. The current study addresses students' needs to feel positive towards what they learned and engaged with their teachers, during Corona crisis, to become intrinsically motivated learners that lead to learn. The

findings of this study are likely to make an important contribution to the existing knowledge by emphasizing the link between positive motivations, students' potential learning, and their educational achievements through distance learning, which may gradually even become a substitute for classroom learning after COVID-19.

## 3. Research Methodology

### 3.1 Research Objectives

This study had a three of objectives, centred around a focus of students' intrinsic motivation and online learning during COVID-19. Thus, it sought to answer the following three research questions:

1. How far were the students able to learn via the virtual lectures?
2. How far did the online classes ensure that the learners felt connected to the learning process, their teachers and peers?
3. Can online learning be continued in the post COVID-19 period, given the current learner engagement and motivation?

### 3.2 Research Instruments

One hundred and twenty students with an equal number of males and females from Qassim University were isolated out of a convenience sample of 160 students in the study: all participants were enrolled for the same major courses at the university. The median age of the respondents was 23.5 years, and they answered a self-report scale over two days. The Intrinsic Motivation Inventory (IMI) scale is a multidimensional measurement device with seven sub-scales to measure participants' enjoyment, perceived competence, effort, usefulness, felt pressure and tension, perceived choice, and relatedness. The IMI scale has been widely used in several studies examining the students' intrinsic motivations (e.g., Ryan, Connell, & Plant, 1990; Ryan, Koestner & Deci, 1991; Deci, Eghrari, Patrick, & Leone, 1994, Ryan &Deci, 2008; Riley, 2016). For the purpose of the current study, the IMI scale used to test the only two basic participants' psychological needs namely competence and relatedness. It consisted of 20 items in all, divided into three main parts as follows: i. personal information and available facility of technology use containing five items; ii. students' competence including six items; iii students' relatedness containing nine items. The scale typically ranges from Very true, True, Somewhat true, to Not at all true (see Appendix A).

Ten of the female participants who also took part in the current study. They were requested to videotape their learning actions across a period of two weeks. These were later analysed by the researcher and the results are stated in this study.

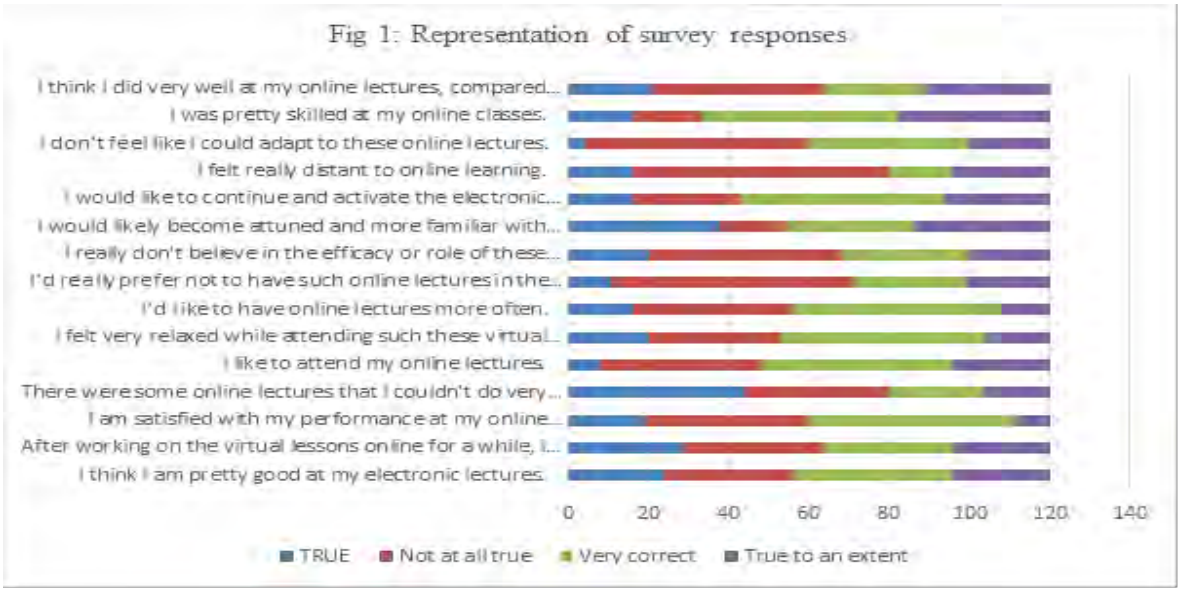
## 4. Results and Discussion

Table 1: IMI Scale Responses

| | Question | True | Not at all true | Very true | Somewhat true |
|---|---|---|---|---|---|
| 1 | I think I am pretty good at my electronic lectures. | 24 | 32 | 40 | 24 |
| 2 | After working on the virtual lessons online for a while, I felt very competent. | 29 | 35 | 32 | 24 |
| 3 | I am satisfied with my performance at my online lectures. | 19 | 41 | 52 | 8 |
| 4 | There were some online lectures that I couldn't do very well. | 44 | 36 | 24 | 16 |
| 5 | I was pretty skilled at my online classes. | 16 | 17 | 49 | 38 |
| 6 | I think I did very well at my online lectures, compared to other students. | 21 | 43 | 25 | 31 |
| 7 | I'd like to have online lectures more often. | 16 | 40 | 52 | 12 |
| 8 | I'd really prefer not to have such online lectures in the future. | 11 | 60 | 28 | 21 |

| | | | | | |
|---|---|---|---|---|---|
| 9 | I really don't believe in the efficacy or role of these virtual classes. | 20 | 48 | 32 | 20 |
| 10 | I would likely become attuned and more familiar with these online lectures if we interacted a lot. | 38 | 16 | 32 | 34 |
| 11 | I would like to continue and activate the electronic platforms such as the blackboard and other courses even post the Corona pandemic, God willing. | 16 | 27 | 51 | 26 |
| 12 | I felt really distant to online learning. | 16 | 64 | 16 | 24 |
| 13 | I don’t feel like I could adapt to these online lectures. | 14 | 46 | 40 | 20 |
| 14 | I like to attend my online lectures. | 8 | 40 | 48 | 24 |
| 15 | I felt very relaxed while attending such these virtual classes. | 20 | 33 | 51 | 16 |

**Figure 1: Representation of Table 1**




Factor 1: Competence

Scale items 1, 2, 3, 4, 5, and 6 dealt with competence factor. In item 1, the responses are skewed positively on the spectrum, reported being competent with their online lectures and were also satisfied with their input which can significantly enhance their online learning. Only 32 out of 120 (26%) responses reported to the contrary. It seems that this was the result of consistent exposure to online learning as per the response to item 2. An important factor in the intrinsic motivation of the participants is reflected in response to item 3 where as many as 79 or 65.8% reported satisfaction with their performance in online learning. However, that the students are still settling to the new mode of learning is reflected in response to item 4 to which 84 or 70% of the participants reported in the affirmative: That they did not do well in some of the lectures. Responding to item 5, only 17 of the respondents reported dissatisfaction with their skills in online classes, the remaining respondents reported being optimistic about online learning. The 17 negative respondents obtained can be as a result of some technical issues appeared in the online system. As Truzoli, Vigano, Galmozzi & Reed (2019) found, in a study with Italian university students that, a negative relationship existed between Problematic Internet Use (PIU) and motivation to study, as it may cause them to struggle with organization of learning productivity. 77 or 64.1% of the respondents reported feeling competent when they responded to item 6 of the questionnaire, in other words, they reported competence as being achieved in the electronic lectures.

Taking these responses together as contributory to intrinsic motivation, students' satisfaction with their performance points towards their competence with online and electronic lectures. This answers RQ1 about the extent of learning achieved in virtual lessons. Students' perception of their grasp of the content and their satisfaction with the extent of learning that took place shows that the virtual lessons seem to be workable mode of learning.

Factor II: Relatedness

Items 7, 9, 10, 12, 14 and 15 load onto the factor of relatedness of online classes. Participant response is largely positive to this factor, as 80 of them reported liking the online lectures (item 7) and 87 responses, as shown in item 15, reported feeling relaxed during the lectures. This is also reflected in response to item 9 to which 72 or 60% of the participants reported that they believe that online learning is efficacious. Further, 104 or 86.6% look forward to increased interaction opportunities in the future (item 10) while attending online lectures, showing their engagement with the classes that they feel a sense of relatedness and hence, more motivated to learn. Relatedness to the educator is reflected in item 12 where more than half the participants (N=64) reported that they fully disagreed with the statement that they felt distant to the learning process. On the contrary, a number as large as 80 or 68.3% like to attend their online lectures. As in item 14, 80 respondents would like more online lectures as compared to contact classes. In the same study, Yamin (2020) reported that, as many as 40.3% of the learners were satisfied with online learning, as it saved money and time. It may thus be summed up that the factor of relatedness is significantly achieved in the online learning platforms. This answers RQ2 and shows that the students feel connected to the learning process, their teachers, and peers which may lead to enhance their motivation and to be succeed in their online learning.

Factor III: Willingness to continue with online education mode as opposed to contact classes

Items 8, 11, and 13 of the scale concerned with the feedback on how motivated the respondents were to continue with online classes whether during or after the pandemic was past. On the suggestion of continuing with online learning (item 8), there were an equal number of responses at 60 for and against the idea. Further, 93 or 77.5% of the participants would stay with the electronic platforms even post-Covid-19 (item 11) which may be indicated to mean that students seem to be satisfied in online learning. The respondents were heavily disposed not only to

continuation of e-learning, but also recommend continuing using the Blackboard once the pandemic is over. Asked about the adaption with the technology-based education (Item 13), 74 respondents reported for, and 46 against the idea. This answers RQ3 and means that, by a majority, the participants would like the online education mode to continue even after the Covid-19 was passed. This seems to be in consistent with Harris and Martin's study (2012) reported that students are feeling more and more inclined to opt for online courses.

The videotaped online learning experiences of ten of the participants was also analysed by the researcher. In all cases, it was apparent that the students were not well engaged with the lessons and were, for the most part, busy with writing the notes instead of adopting a participative stance. This was especially the case in the lectures that were based largely on textual reading and the students were required to be passive. In online classes that had interactive activities, the students appeared more motivated and were able to relate to the learning process and the teacher. Clearly, the students found themselves in a new situation that placed the responsibility of learning squarely on their shoulders, and it seems that some of the learners are not well prepared to be as autonomous as the online learning experience demands.

## 5. Conclusion and Implications

The present pandemic can be viewed as a stimulus for educational change to more versatile models and practices, which better respond to today's educational circumstances. Students are aware that, the pandemic has brought about a paradigm shift so far as thinking in education is concerned. They understand the importance of e-learning, but acknowledge that, there are challenges to overcome. The need for high-quality teaching at higher education institutions, driven by successful teaching approaches, is, now, more critical than ever before. As based on Deci and Ryan's (1985) Cognitive Evaluation theory, Competence and relatedness, being the basic psychological needs, can facilitate students' intrinsic motivation. In other words, together, with other factors such as autonomy, may enhance feelings of intrinsic motivation which drives students on to feel engaged with the learning process (Riley, 2016). The findings of the current study are consistent with earlier studies and indicated that during Covid-19 the students were able to learn via the virtual lectures, showing their competent and their engagement with the online classes and hence, more motivated to learn. This finding confirmed previous research (Vallerand, Pelletier, & Koestner, 2008; Riley, 2016).

The findings also confirmed that at least most of the university students were positively inclined towards online learning and would like the online education mode to continue even post Covid-19, perhaps because the changed socio-economic order enforced by the pandemic has enabled them to more fully appreciate the pros of this mode of learning. Therefore, as teachers they should enhance students' competence and relatedness to the learning process, their teachers and peers in order help their students to be more motivated to learn. The results of the current study have established that the university students are prepared and motivated for switch to online learning. Accordingly, it may be recommended that greater resources be divested in development of such online courses even post Covid-19 as they can be an effective solution to support the traditional classes and to promote the educational level. Such these online courses, designed and implemented professionally, can be the key to successful online learning.

### 5.1 Limitations

The IMI scale used in this study was of the self-report nature, and it was a compulsion due to the closure of universities in the globally pervasive pandemic of the Covid-19. With self-report scale, only linear responses to questions can be obtained, and why, and how the participants selected a certain option to the exclusion of the others, cannot be deduced. Therefore, future studies of this nature may preferably include interviews with participants to gain a better and wider understanding of their responses.

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**Appendix**

**Part 1:**

**Personal Information**

a. **Your email address:**
b. **Gender:**

Male – Female

c. **Age:**

18-20 years

21-30 years

31-40 years

Over 40 years old

**D- Do you have a personal computer and fast internet connection to attend your e-classes?**

Yes

NO

Other details

**C. Can you attend your online classes without being interrupted or disturbed?**

Yes

NO

Other details

**Part 2:**

a. **I think I am pretty good at my online lectures.**
- Very true
- True
- Somewhat true
- Not at all true

b. **I think I did very well at my online lectures, compared to other students.**
- Very true
- True
- Somewhat true
- Not at all true

c. **After working at these virtual lessons for a while, I felt very competent.**

- Very true
- True
- Somewhat true
- Not at all true

**d. I am satisfied with my performance at my online lectures.**

- Very true
- True
- Somewhat true
- Not at all true

**e. I was pretty skilled at my online classes**

- Very true
- True
- Somewhat true
- Not at all true

**f. There were some online lectures that I couldn't do very well.**

- Very true
- True
- Somewhat true
- Not at all true

**Part 3:**

**a. I like to attend my online lectures.**

- Very true
- True
- Somewhat true
- Not at all true

**b. I felt very relaxed while attending such these virtual classes.**

- Very true
- True
- Somewhat true
- Not at all true

**c. I'd like to have online lectures more often.**

- Very true
- True
- Somewhat true
- Not at all true

**d. I'd really prefer not to have such online lectures in the future.**

- Very true
- True
- Somewhat true
- Not at all true

**e. I really don't believe in the efficacy or role of these virtual classes.**

- Very true
- True
- Somewhat true
- Not at all true

**f. I would likely become attuned and more familiar with these online lectures if we interacted a lot.**

- Very true
- True
- Somewhat true
- Not at all true

**g. I would like to continue and activate the electronic platforms such as the blackboard and other courses even post the Corona pandemic, God willing.**

- Very true
- True
- Somewhat true
- Not at all true

**h. I felt really distant to online learning.**

- Very true
- True
- Somewhat true
- Not at all true

**i. I don’t feel like I could adapt to these online lectures.**

- Very true
- True
- Somewhat true
- Not at all true

**Thanks for your participation**!