

# MOTIVATION AND BARRIERS OF ONLINE LEARNERS IN THE ERA OF COVID-19

A Perspective of Study in Vaasa Universities

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# ABSTRACT

The outbreak of corona virus (henceforth COVID-19) since the later part of 2019 have brought about untold economic, social, technical and more importantly personal wellbeing of diverse people around the world. The impact of COVID-19 has increased the demand and importance of virtual learning.

This paper focuses on the motivation and barriers to online learning. The responses of 256 students from the Vaasa region in Finland were analysed using descriptive statistics and factor analysis. Our results indicated that the main motivation for online learning depended on students' choice of delivery model of the lectures. Students who preferred face-to-face learning environment viewed involvement and fear of being left out as the key motivation for online learning. The main barriers for online learning were instructional issues followed by lack of social interaction. The type of educational program and geographic area also affected barriers for online learning.

The results of our study have implications for institutions planning to improve their online learning environment. By providing an additional insight into the preferred choice of delivery modes, motivation, and barriers of on learning, our study can assist institutions of developing the right policies and implementation tools for online learning. For example, our findings suggest that educational institutions must provide online training facilities, equipment and virtual teaching pedagogical skills for teachers before they embark online teaching.

## Keywords

Motivation, Barriers, Online Learning, COVID-19

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# 1. INTRODUCTION

The COVID-19 global pandemic inarguably forced many educational institutions around the world to switch to online mode of facilitating learning. Contact teaching and rigorous laboratory activities in academia ended suddenly with faculty heads, school principals and rectors scrambling for solutions beyond what is normal. At the same time, online tools and platform gained popularity overnight with increasing number. The sudden spike in the number of users instigated an increased number of security breaches and privacy concerns. Whether we like it or not, online learning which has never been a new thing has now taken on a new persona, and it is here to stay thus the next step is for educational institutions, educational ministries and general stakeholders in academic and pedagogical activities to think outside the box and promote ad hoc and transitional solutions to officially integrate online learning as part of the curriculum design on program and course deliverables.

Covid-19 has increased the importance of online learning activities in many institutions, and it is vital to understand how the different delivery modes and motivation of online learning are related to the barriers. The purpose of this study was to identify and categorise the different types of motivation for online learning, and to assess their relative impact on students' barriers to online learning. Understanding students' perceptions of barriers, the different types of barriers and their relative importance will enable the management of many institutions to focus upon the most critical potential barriers to the implementation of successful online learning environment.

## 2. LITERATURE REVIEW

### What is online learning?

Online learning has been one of the most proficient way to disseminate knowledge in our digital age. The popularity of online learning is mainly due to its flexibility of delivery, the lack of confine parameters posed by contact teaching and the ability to be anonymous devoid of sigma of age, gender and any pre-conceived notion of not belonging to a particular class or group. Online learning, for instance, has made it possible for people in the working class to gain added knowledge within their own period and without the need to travel to a distant physical location in other to acquire such knowledge (Harandi, 2015; Karaman, 2011)

Furthermore, most online learning platforms are not time sensitive; it gives students a relative flexibility with time. Thus, students have the opportunity to study at their own pace in this way, no matter where you live, or what time of the day or week best suits to your calendar, you are able to join. Students with children need flexibility with their studies and online learning gives such students a chance to go forward with their studies as planned. They may study when children are sleeping or early in the morning, literally whatever suits them best. All you need is a computer, a good internet connection and the willingness to learn. Furthermore, online learning may contribute in improving the organizing skills of students because they have more responsibility over their timing and studies. More so, it is an avenue where teachers

and educational institutions are able to reach a much wider audience with seemingly fewer physical restrictions.

Due to ease of access to information, people with busy business life are able to access materials so far as they have the pre-requisite electronic tools. Online learning gives the opportunity for different learners including some who are unable or unlikely to join traditional classroom to have access to a relatively quality education. By expanding the basic infrastructure including computer and internet service from schools to convenient locations accessible to all sort of people, facilitating learning becomes easier (Vainionpää, 2006). Online learning also promotes equality, for instance for socially reserved (i.e. *shy people*), it may be easier to communicate with teacher and students in an online learning context than it would be in face-to-face (i.e. *contact teaching*) learning environment. Online learning is not gender biased, there is no age limits in acquiring new information or learning via online platforms thus the elderly can also take advantage of online learning including becoming adept in the use of social media platforms, which have become one of the most used collaborative tools in the online learning eco-system (Vainionpää, 2006). Furthermore, online learning environment provides the flexibility for learners to control the amount of social contacts and the quality of interaction. In addition, online learning offers learners a wide range of possibilities for mutual interaction with different kinds of tools for both written and oral communication (Vuopala, 2014). Thus, with effective and interesting communication tools, online learning can promote students' community skills.

According to Myllylä et al. (Torp, Myllylä, Mäkelä, & Leikomaa, 2009), an active discussion in an online learning environment contributes to cognitive conflicts which are important for learning, and for which it is essential that forum messages are written using own words and thoughts rather than applying a mere copy and paste theory. From the student's point of view, another advantage of online learning is that in the online environment, the student could often receive more personal guidance than in class (Suominen & Nurmela, 2011). Therefore, online learning environment gives the opportunity to offer supervision outside the classroom as well as the ability to reuse the content and material of the course. This means that it is easier to go back to the material and documents studied during the course and thus the ability to utilize feedback obtained from students to improve the quality of the materials in use for teaching (Vainionpää, 2006). It is obvious that people often move to big cities to study. In media, we often read and watch issues pertaining to rural depopulation. With an ever-increasing supply of online learning platform and materials, we can meet this challenge of depopulation especially in the rural communities. Nevertheless, online learning provides an equal opportunity for those living far away from big cities (Vainionpää, 2006). According to Harandi (2015), '*practical and application based online program is likely to motivate learners especially if it achieves the desired objectives*'. Nevertheless, online learning poses some inherent challenges due to the nature of its delivery. Therefore, in discussing the impacting factors for instance the factors affecting learners' engagement and motivation in an online course goes a long way to promote positive learning experience (Gedera, Williams, & Wright, 2015). Furthermore, the dynamics of online learning in developing countries is a cause for concern, especially during this global pandemic brought about by COVID-19. Reasons in support of the aforementioned concern includes but not limited to the type of communication infrastructure in place in developing countries.

## What is the impact of COVID-19 on online learning?

COVID-19 is a new strain from a large family of viruses transmitted between animals and people that cause mild to severe disease, which can be fatal. Some notable symptoms include but not limited to fever,

cough, and shortness of breath, sore throat, and breathing difficulties. It is noted that in some severe cases infection can cause pneumonia or severe acute respiratory syndrome especially with those with other chronic underlying health conditions, and at worse even death (WHO, 2021).

Over 1.2 billion learners have been affected globally due to temporary or total closures of educational facilities in response to the pandemic. These closures have affected even normal examination routines leading to massive cancellation of entrance examination among others in many countries as well as forcing some educational institutions to circumvent the normal protocols for selection of students through entrance examination, such as International Baccalaureate, Advance Placement Exams General Certificate Exams and similar related assessment protocols (Mustafa, 2020). Furthermore, the school closures have resulted in short term consequences affecting students, teachers and their immediate families as well as potential long-term societal and economic consequences including massive labor sector layoffs, student debts payment uncertainties, spike in digital learning, homelessness and food insecurity among others (Karp & McGowan, 2020; Lindzon, 2020; Mitchell & Jamerson, 2020)

It is evident that there has been a tremendous surge in online learning in response to school closures, thus it is no surprise UNESCO have urged the implementation of distance learning programs as well as open educational platforms with the hope of minimizing the disruption of education in general (UNESCO, 2020). Considering the psychological and physiological effects on learners the question arises as to how such learners can be motivated to enable, them adopt this new normal with little or no negative impact.

## Factors affecting motivation of online learners.

Studies showed that although online learning played a significant role in learning, motivating online learners have not received greater attention (Jones & Issroff, 2005; Miltiadou & Savenye, 2003). This could be due to the focus put on students' process of acquiring knowledge while ignoring other socio-emotional factor (Kreijns, Kirschner, & Jochems, 2003).

Several factors affect online learning. In a study about the student's perceptions concerning motivation factors in online courses, Sievi (2010) listed five main themes and factors in order of priority:

- Learning-teaching process (which are usually seen in the roles of an instructor)
- Participation and attention (which are seen in the recipient of knowledge or learners)
- Online learning environment
- Technical infrastructure and
- Time management.

Other factors that influence the learner's motivation in e-learning and distance learning environment are developed in a framework by Kim and Frick (2011). These factors are categorised into three major factors (e.g., internal, external and personal factors) based on suggestions by Song (2000):



## Internal factors

Internal factors are related to the content and features of the course been taken online and how they can influence the learners' motivation (Kim & Frick, 2011). Keller's ARCS model of motivation tackled four important areas in the student's motivation: attention, relevance, confidence and satisfaction (Keller, 1983). However, it is worth paying attention to factors that can decrease the learner's motivation. This is explained by a cognitive load theory, which suggests that cognitive overload can negatively affect the students' motivation by impeding their attention of the study material (Hartley, 1999). On the other hand, Clark and Mayer indicate that the learner's control in e-learning environment which can be summarized into sequencing, pacing, and access to the learner's support is another important motivation factor (Clark & Mayer, 2016).

## External factors

According to Kim et al. (2011), external factors concern aspects about the learning environment and encompasses various motivation theories. Additionally, an investigation by Schramm, Wagner, and Werner (Schramm, Wagner, & Werner, 2001). revealed that the level of satisfaction of online learners is high when students have at their disposal the proper tools and technology. Other critical external factors are organizational climate (Alkin, 1992) and organizational support (Mungania, 2004)

## Personal factors

Apart from internal and external factors, personal factors and variables also play a major role in motivating online learners. Some studies show that learning style can influence learning motivation and suggest adapting instructional strategies with the learning style that a learner prefers (Cuneo & Harnish, 2002). However, other researchers did not see any significant correlation between the students' learning style and their online learning satisfaction and motivation (Klingner, 2003).

## Motivation models and theories

Different models and theories were studied with the aim to increase the student's attention and motivation.

### Keller's ARCS motivational and instructional model

The ARCS model is a motivational design process and instructional model developed by John Keller (Keller, 1983). ARCS is an acronym that stands for Attention, Relevance, Confidence, and Satisfaction. The assumption behind this model is that the learners are motivated to learn if only they are sure they will succeed or if there is a value in what is been learnt. That is why ARCS is an expectancy model (Keller, 1987). It points to the role the instructor or learning material need to play in keeping the motivating level of the students high by (1) attracting and keeping the learner's attention, (2) showing why the learner needs to know the topic or content been presented, (3) helping the learners believe that their effort will

be rewarded if they put in effort, and (4) cultivating in the learners a sense of reward and achievement (Keller, 1987).

## Self -determination theory in an online learning context

Another theory that is worth considering in the online learning environment is the self-determination theory (SDT). According to Deci and Ryan ” (Deci, Edward L. & Ryan, 2012), SDT “is an empirically derived theory of human motivation and personality in social contexts that differentiates motivation in terms of being autonomous and controlled”. This theory distinguishes motivation into three main categories (Ryan & Deci, 2000):

- **Intrinsic motivation:** it is the motivation that drives a person to perform an act for self- satisfaction and internal reward.
- **Extrinsic motivation:** it is the motivation to do something because it gives a reward and it comes from influences outside the individual. A typical example for extrinsic motivation is an individual who plays football for an award whereas for the intrinsic motivation the person plays just for fun or self-enjoyment.
- **Amotivation:** it is the state where the learner lacks any intention to act. People who are amotivated either do not take action or perform a task without any intent.

A second sub-theory named Organic Integration Theory (OIT) was later introduced by Deci and Ryan (Deci, E. & Ryan, 2015) to illustrate different motivational types arranged from left to right based on the motivation level of oneself (from nonself-determined to self-determined) as seen in Figure 1. below.

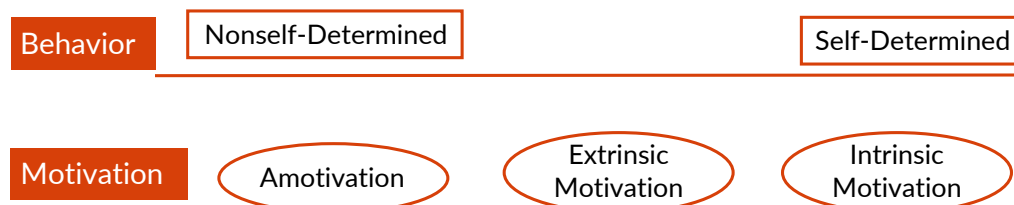


FIGURE 1. The self-determination continuum showing types of Motivation (adapted from Deci & Ryan, 2015 )

The amotivation is seen in Figure 1 at the far left of the self-determination continuum whereas the extrinsic motivation is at the far right.

Chen (2007) acknowledged that there has not been extensive researches about SDT in an online learning. However, there are few exceptions as seen in the study by Xie et al. (2006) where SDT was applied to analyse how students are motivated in an online discussion board. By means of a mixed method, they analysed the student’s intrinsic motivation (perceived interest), extrinsic motivation (value), perceived autonomy (choice) and attitude towards the class. They found a positive correlation between three SDT-based indicators (such as perceived interest, value and choice) on one side and the online participant’s attitude and determination toward the course on the other side. It can be concluded that SDT-based indicators impact positively on online learners.

Furthermore, SDT theory revealed that all humans have three basic attributes: autonomy (self-governed), competency (feeling adequate to perform a task or activity) and relatedness (feeling involved). These three constructs are applicable to aspects of online learning such as flexible learning (Moore, 1993) and learning new technology and computer-based tools (Howland & Moore, 2002).

## Barriers to online learning

Researchers have discussed different barriers to online learning (Bell, 2007; Muilenburg & Berge, 2005; Rogers, 2000). For example, Muilenburg and Berge (2005) suggested that students' barriers to online learning include time interruptions, lack of motivation to use, infrastructure, perceived skills, technical and social skills. Muilenburg and Berge found that the lack of social interaction, administrative and instructor issues, time and support and learner motivation are the key barriers to online learning. Roger (2000) suggested that the barriers to online learning can be classified as internal and external barriers. Internal barriers are connected to technological competence, whereas external barriers are determined by quality of support, lack of instructional support and technology (availability and accessibility). Learners' motivation and cultural resistance can also create barrier to online learning (Beamish, Armistead, Watkinson, & Armfield, 2002). Researchers have also suggested that demographic factors such age and ethnicity (Ke & Kwak, 2013), gender (Perkowski, 2013) and type of learning institution (Becker, Newton, & Sawang, 2013) can play a role in barrier of on learning.

In summary, this study aims to extend the existing literature by exploring how the student's preference for different types of lecture delivery mode and motivation influence their perception of barriers to online learning in different types of educational programmes.

## 3. RESEARCH METHOD

### Research Setting

The City of Vaasa is located in the Western Region of Finland. The City of Vaasa has the largest cluster of energy companies in the Scandinavian region and has about 13000 university students. The focus of study in the universities are business, engineering, and social and health studies, and educational programs are provided in English, Finnish and Swedish. In addition, many international students visit the City of Vaasa every year.

### Data Collection

The survey was sent to 700 students in 3 universities in the Vaasa region. The universities are Vaasa University of Applied Sciences, the University of Vaasa and Novia University of Applied Sciences. 267 survey responses were received, and those with large amount of missing data were deleted. After deleting, 256 valid responses were left and analysed. Of the valid responses, 120 students are studying business, 121 in engineering, 9 in social and health studies, and 6 students in the field of business and technology.

83% of the students are from Europe, 14% of the students from Africa. There were 55% (n= 140) male, and 45% (n= 116) female students.

## Measurement of Variables

*Motivation (Perception) for online learning.* The dimension of motivation for online learning was adapted from (Rusli, Rahman, & Abdullah, 2020). Students were asked on their perception on the motivation online learning and evaluated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The following items were used:

(1) *I can collaborate with other students during Internet activities outside of class;* (2) *Online learning will save teachers and students time;* (3) *I feel that face- to- face with my instructor is necessary to learn;* (4) *Online learning makes teaching and learning easier;* (5) *I am interested in learning if online teaching becomes the new approach to learning;* (6) *Online learning can increase my creativity;* (7) *Online learning makes me to get the job done quickly;* (8) *I like a lot of interaction with my instructors and/or teaching assistants.*

A factor analysis using a principal component analysis (PCA) with varimax rotation shows that the 8 items loaded on two factors accounting for 71% of the variance of the underlying the variable (see Table 1). The perception for the motivation for online learning broke into two categories: Factor 1 (competency) and Factor 2 (relatedness). The first category describes motivation for online learning that is related to improving learning and creativity. The second describes relatedness that is connected to feeling of getting involved to online learning and fear of being isolated (see SDT theory presented earlier).

TABLE 1. Factor analysis of perception for motivation for online learning

FACTOR ITEMS	FACTOR 1	FACTOR 2
I am interested in learning if online teaching becomes the new approach to learning.	.869	
Online learning can increase my creativity.	.836	
Online learning makes me to get the job done quickly.	.831	
Online learning makes teaching and learning easier.	.807	
Online learning will save teachers and students time.	.798	
I can collaborate with other students during Internet activities outside of class.	.414	
I like a lot of interaction with my instructors and/or teaching assistants.		.862
I feel that face-to-face with my instructor is necessary to learn.		.576

TABLE 2. Factor analysis for barriers of online learning

FACTOR ITEMS	1	2	3	4
Fear computers and technology.	.871			
Lack online learning software skills.	.862			
Unfamiliar with online learning technical tools.	.852			
Lack of skills for using the delivery system.	.839			
Fear of new tools for online learning.	.833			
Fear of different learning methods used for online learning.	.825			
Lack of access to instructor/expert.		.829		
Lack of timely feedback from instructor.		.779		
Lack of support services such as tutors.		.678		
Lower quality materials/instruction online.		.648		
Lack of social content cues.			.828	
Lack of student collaboration.			.784	
Afraid of being isolated.			.705	
Online learning seems impersonal.			.684	
Lack of interaction/communication among students.			.539	
Incompatibility creates technical problems.				.804
Lack of consistent platforms, browsers, software.				.801
Lack technical assistance.				.597
Insufficient training to use the delivery system.				.540

*Barriers to online learning.* The dimension for the barriers to online learning was adapted from (Mullenburg & Berge, 2005). The students' responses were evaluated on a five point Likert scale : (1) *Lack of timely feedback from instructor*; (2) *Lack of access to instructor/expert*; (3) *Lack of support services such as tutors*; (4) *Lower quality materials/instruction online*; (5) *Insufficient training to use the delivery system*; (6) *Lack of interaction/communication among students*; (7) *Online learning seems impersonal*; (8) *Afraid of feeling isolated*; (9) *Lack of social context cues*; (10) *Lack of student collaboration*; (11) *Lack of consistent platforms, browsers, software*; (12) *Incompatibility creates technical problems*; (13) *Lack technical assistance*; (14) *Fear of new tools for online learning*; (15) *Fear of computers and technology*; (16) *Lack of online learning software skills*; (17) *Lack of skills for using the delivery system*; (18) *Unfamiliar with online learning technical tools* ; (19) *Fear of different learning methods used for online learning*.

A principal component analysis with varimax rotation show that the 19 items loaded on four factors accounting for 68% of the variance of the underlying the variable (see Table 2). The four factors for

perception for the barriers are: Factor 1 (Computer barrier), Factor 2 (Instruction barrier), Factor 3 (Social barrier), and Factor 4 (Infrastructure barrier). Factor 1 is represented by a barrier related to computer and familiarity of on-line tools. The second factor describes barriers related to instruction issues of online learning. Social barriers, such as lack of social content cues and lack of student collaboration as described in Factor 3. Infrastructural barriers such as incompatibility of software and lack of technical assistance are represented in Factor 4.

## Assessment and Validity

Content and convergent validity were used to assess the validity of the variables of motivation and barriers to online learning. Content validity was performed by using existing measures of motivation and barriers to online learning. Convergent validity refers to the state when items measure their intended construct. Convergent validity is established using a factor analysis. A PCA with varimax rotation was used to determine the structure of the data. All the factors loading are positive and above the minimum acceptable loading of 0.30 (Nichols, 1986). The reliability of each construct (see Table 4) exceeds the minimum acceptable cut-off point of 0.60 (Nunnally & Bernstein, 1994). The average variance extracted estimates is from 0.48 to 0.71 which confirms that all constructs exhibited discriminant validity. The minimum threshold recommended for AVE is 0.50. Fornell and Larcker (1981) recommended that if AVE is less than 0.50 but composite reliability is higher than 0.60, the convergent validity of the construct is still acceptable and adequate. The composite reliability values is from 0.70 to 0.93, which exceeded the threshold of 0.70 recommended in the literature (Hair, Black, Babin, Anderson, & Tatham, 2006). As shown in Table 6, the results provided evidence for adequate levels research reliability, and the descriptive statistics of the variables used in the study are presented in Table 7.

The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) is above the recommended value of 0.6, confirming that the sample from which the data was collected was adequate. Barlett’s test of sphericity was significant. MSA for the factor analysis for motivation to online leaning and barriers to online learning are .77 and .88 respectively and are significant. Table 3 provides a summary of reliability and validity of the research variables of the study

TABLE 3. Summary of reliability and validity

VARIABLES OF STUDY	CRONBACH ALPHA	AVE	COMPOSITE RELIABILITY
Competence	0.87	0.60	0.89
Relatedness	0.63	0.53	0-70
Computer barrier	0.94	0.71	0.93
Instruction barrier	.839	0.54	0..82
Social barrier	0.80	0.51	0.84
Infrastructure barrier	0.78	0.48	0.78

## 4. RESULTS

Data were analysed using SPSS. Students were asked “To indicate the type of presentation which they learn most from”. Of the respondents, 58% indicated that face-to-face lectures are the most preferred approach of learning. 22% opted for recorded lectures view online and 20% for interactions online lectures (see Table 4). In response to the question “Which of the following mode of delivery do you typically prefer in your educational program”? 63% of the students preferred face-to-face delivery instruction followed by 28% preferring online delivery lectures (see Table 5).

TABLE 4. Please indicate which type of presentation you learn most from

TYPE OF PRESENTATION	FREQUENCY	PERCENT
Face to Face	149	58.2
Recorded lectures view online	57	22.3
Interaction online lectures	50	19.5
Total	256	100%

TABLE 5. Which of the following modes of delivery do you typically prefer in your educational program?

TYPE OF PRESENTATION	FREQUENCY	PERCENT
Face to Face	162	63.3
Online Session	71	27.7
No preference	23	9.0
Total	256	100%

Table 6 and Table 7 presents the descriptive statistics for the study. Factors were calculated for the two factors identified for perception of the motivation for learning and for the four factors related to barriers of online learning. Students perceived relatedness as the key issue for the motivation for online learning. The most important barrier to students’ learning online was the instruction barrier (M = 3.10) followed by the social barrier (M =3.04). Similarly, the important motivation for online learning is relatedness (M = 3.51).

TABLE 6. Descriptive statistics for perception for the motivation for online learning

VARIABLES OF ONLINE LEARNING	N	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
Competence	256	1.00	5.00	2.73	.80
Relatedness	256	1,00	5.00	3.51	.93

TABLE 7. Descriptive statistics for barriers to online learning

VARIABLES OF ONLINE LEARNING	N	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION
Computer	256	1.00	5.00	1.88	.92
Instruction	256	1,00	5.00	3.10	.86
Social	256	1,00	5.00	3.04	.93
Technical	256	1.00	5.00	2.80	.89

## Additional Analysis

To find out whether different subgroups affected the motivation and barriers related to online learning, we performed a series of ANOVA using the factor scores as dependent variable. Type of educational program, gender, and geographical, preferred mode of online learning were used as the independent variables. The type of the educational program affected only students' perception of barrier to on online learning associated with computer skills ( $p < .01$ ). Students in the business school ( $M = 2.09$ ,  $SD = .96$ ) perceived computer skills as a key barrier to online learning compared to students from the engineering and technology school ( $M = 1.73$ ,  $SD = .88$ ). The gender did not show any significant differences in either motivation or barriers to online learning. The geographical region shows a significant difference in computer skills as a main barrier to online learning ( $p < .05$ ). Students from Africa region ( $M = 2.32$ ,  $SD = 1.02$ ) view computer skills as the main barrier compared to students from Europe ( $M = 1.8$ ,  $SD = .90$ ) and Russian ( $M = 1.50$ ,  $SD = .70$ ). Our results show that the mode of delivery preferred by students show a significant difference in social and computer barrier of online learning ( $p < .01$ ). Students who preferred face-to-face mode of delivery perceived social barrier ( $M = 3.2$ ,  $SD = .91$ ; online session,  $M = 2.6$ ,  $SD = 0.84$ , No preference =  $2.7$ ,  $SD = .91$ ), and computer skills (face to face,  $M = 2.02$ ,  $SD = 1.00$ ; online session,  $M = 1.62$ ,  $SD = .70$ ; no preference,  $M = 1.88$ ,  $SD = .92$ ) to be the main barriers of online learning. Students who prefer online delivery as a mode of teaching ( $M = 3.32$ ,  $SD = .73$ ; face to face ( $M = 2.44$ ,  $SD = .70$ ; no preference ( $M = 2.98$ ,  $SD = .57$ ) perceived competence as a key motivation for online learning ( $p < .01$ ). On the other hand, students who prefer face to face ( $M = 3.87$ ,  $SD = .78$ ; online session ( $M = 2.84$ ,  $SD = .90$ , no preference,  $M = 3.08$ ,  $SD = .76$ ) view relatedness, that is the fear of isolation and being left out as a key motivation for online learning ( $p < .01$ ).



## 5. DISCUSSIONS AND CONCLUSIONS

The purpose of the study was to explore the motivation and barriers to online learning for students in the Vaasa region in Finland. Our results show most of the students prefer face to face as a preferred mode of teaching, and that motivation for online learning is linked to the student's choice of mode of delivery. Students who preferred face-to-face lecture view the feeling of being involved as the main motivation for online learning whereas students with preference for online learning perceived improving learning competence as a key motivation. This seem logical, for students who prefer face to face may participate in online learning for fear that they may be left out which is consistent with the self-determination theory (Ryan and Deci, 2015). Lack of instruction support and social interaction were the key barriers of online learning and this is consistent with the study of (Muilenburg & Berge, 2005). In addition, our results indicate that the computer skills barrier is perceived differently by students from different geographical region, and that that the type of educational program. Although, the least barrier was the lack of computer skills, students from the business school perceive lack of computer skills as a barrier to online learning compared to students from the engineering and technology school. Students who preferred the face-to-face mode also viewed computer skills as a barrier to online learning. The role of computer

The role of computer and IT related issues have grown in importance as a result of Covid-19.

and IT related issues have grown in importance as a result of Covid-19. Perhaps educators should provide specialized training for students in computer related skills related to the virtual environment. This might motivate students to improve their computer skills required for virtual learning. Furthermore, the IT industry can develop a platform for virtual teaching and learning that enhances social interactions.

Instructional support related issues were perceived as the most important barrier. This shows that schools must provide online training facilities, equipment and virtual teaching pedagogical skills for teachers before they embark online teaching. Improving instructional support may provide instructors a more creative way of delivering online courses and materials and designing courses in a way that create more social interaction among students.

More research is needed to explore how learning styles such individual, group work and project work related to motivation and barriers in different educational programs and geographical regions. Perhaps courses designed around group and project activities may improve the social interaction of students in a virtual environment. Additional research on the self-determination theory could assist in providing more insights to the motivation for online learning in a virtual learning environment.

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