College Students Motivation: A Study of Comparing E-learning and Blended Learning in Covid-19 Epidemic

Zhuofei Bian[1, †] Yuchen Song[2, *, †] Shize Zhang[3, *, †]

[1]*School of Foreign Studies, Beijing Information Science and Technology University, Beijing, China*
[2]*School of ECPS, University of British Columbia, Vancouver, BC, Canada*
[3]*School of Neag, University of Connecticut, Storrs, Ct, United States*
[*]*Corresponding author. Email: [2]yuchen09@student.ubc.ca, [3]shize.zhang@uconn.edu.*
[†]*Those authors contributed equally.*

ABSTRACT
With the outbreak of the Covid-19 pandemic, different teaching methods are adopted by higher education institutions to adapt to this global change. Since e-learning and blended learning methods reduce the demand for face-to-face courses, they became a mainstream teaching method applied by higher education in this special period. Meanwhile, some issues about lacking motivation, which is a significant factor for learning, during the Covid-19 period were reported by several scholars even with new teaching methods. As a result, this article mainly focuses on these two methods and compares the impact of blended learning and E-learning on students' learning motivation. By reviewing the previous literature, it is found that the long-term teaching method of e-learning would make some students lack the sense of being in the community, which leads to the reduction of learning motivation. While blended learning can improve learning motivation to a certain extent.

Keywords: *E-learning, blended learning, motivation, Covid-19*

1. INTRODUCTION

With the epidemic of Covid-19, most colleges had to conduct teaching activities online. As a result, E-learning and blended learning had applied as mainstream for

However, learning motivation, which is important for students' self-efficacy and hence academic achievement and performance, was reported to decline during the covid-19 period due to lack of social interaction and self-expression [1]. In this difficult learning situation, studying away from the traditional classroom, both college students and teachers reported a lack of learning motivation concerning laboratory activities and the research process [2]. It can combine the importance of motivation on higher education's efficiency and the current condition that e-learning and blended learning have become normal. The impacts and characteristics of E-learning and blended learning on learning motivation and potential strategies that may help them adapt to cultivate students' motivation during epidemic period worth further studying. Scholars have researched either E-learning's or blended learning's impact on motivation in recent years, especially after the epidemic appeared. However, only a few articles compare them together and even less analyse their effect conjunctively on learning motivation. As this is a new topic during covid-19 with a bunch of new research, it needs a systematic arrangement and comparison.

This study reorganized past and current literature before and during the Covid-19 period about the effect of e-learning. It blended learning on motivation to compare them and try to determine which method may be more helpful for maintaining and enhancing motivation. The literature on e-learning and blended learning was introduced and analysed separately, and their effect on motivation was strengthened and compared after separate introductions. Furthermore, these e-learning and blended learning studies were compared vertically across time, especially before and after the pandemic, with themselves and horizontally with each other.

2. E-LEARNING

2.1. The concept of E-learning

The term E-learning has become very popular, but like the phrase 'distance learning', it can be referred to many different ways of the learning environment. In the

present paper, we use it to represent any learning environment without a physical classroom, which separates the educator and trainees. And, with the help of network technology, it can provide learners with more choices in time, place and pace [3]. However, there are many similarities in motivational problems in E-learning, which lead this method to face big challenges. For example, studying by E-learning will make learners feel isolated and cannot centre their attention for a long time [4]. However, with the outburst of the Covid-19 pandemic, E-learning became an important way of study. Therefore, the technology has been updated. To gain learners attention and improve their motivation, they use lots of interesting graphics, animation or any kind of event that introduces incongruity or conflict, which can attract them. Also, the system has another requirement to effectively increase learners' motivation, which is to build relevance. That means it can make the learning content connected to their past experiences. Hence, hey will feel more acceptable [5]. What's more, learning on the internet will help students be more flexible and easier to acquire more knowledge, practice and experience, since learners can watch record without taking note all the way and it will be more networked, which help young learners study new knowledge with the word they familiar with [6, 7]. Also, Rosenberg [8] believes that E-learning is a series of solutions that use network technology to transmit and strengthen knowledge and work performance. However, we want to study it because compared to the previously known blended-learning, will the positive of E-learning exceed the negative in learner's motivation is still a gap in the academic field.

2.2. The impact of E-learning on student's learning motivation

In recent years e-learning has been studied by many researchers [9]. Based on Keller et al. [4], her team conducted further research on E-learning and motivation. The results of the empirical studies have approved those electronic products are helpful for teaching. Tarans' [10] study of ThedIcs motivations in eLearning presents ten types of techniques, these are using for and keeping students' attention, and they are agreed as the most important elements in obtaining motivation while learning online. The hypotheses are that E-learning can really enhance students, and they asked 383 participants to take classes on the network. Through experiments, they found that when the E-learning format became a novelty, students' attention was much greater than in the classroom, and their motivation was enhanced.

Shroff [11] believes that intrinsic motivation plays a big role in student motivation. In an age of increased use of technology-delivered education and with an emphasis on lifelong learning, intrinsic motivation becomes even more important. Hodges [12] noted that increased conceptual learning, creativity, flexibility, positive emotional health, and higher self-esteem have all been associated with the intrinsically motivated activity. But few people know and use E-learning, so their study selected some students, six in-depth interviews with students are analysed and results. The final research structure suggests that E-learning is now ubiquitous in our lives and is becoming a choice for more and more learners, as this form of class can improve their motivation.

In the current education process, although the development of learning and the study of the school dominated, with the development of science and technology and the outbreak of the outbreak, the school invested a lot of resources in E-learning technology to maximize the advantages. While the great advantage of using such technology in connection with on-site courses is that it increases flexibility through resources that facilitate learning anytime and anywhere [13]. However, E-learning's most essential advantage is to give teachers and students a "possibility" rather than a "ready to use" resource [14]. Larsen [15] divided the participants into three groups, each with overlapping parts. By comparing different forms of class, it was clear that E-learning, a form of teaching, helped students get their motivation [16].

Through previous research, E-learning, as a very popular teaching method, has many restrictions. For example, students will feel isolated, and some students will feel that they are not real in the classroom. But in the long-term, E-learning greatly enhances student motivation through various forms of class mode and class flexibility.

3. BLENDED LEARNING

3.1. The concept of blended learning

Blended learning is a system that combines face-to-face instruction along with computer-mediated instruction [17]. During the lockdown period of the covid-19 pandemic, blended learning was commonly modified as covering main course materials and assessment online and conduct laboratory, sub-group discussion and research in face-to-face form with respecting epidemic prevention regulation [18]. In the circumstance of Covid-19, this blended instruction offer flexibility on conducting curriculum considering the health and safety of students and professors. Meanwhile, it can also provide chances and sources for students and professors in a small group to communicate or do lab and research in small groups to reduce the risk of contact covid-19 as much as possible. Additionally, it may provide a most similar learning environment for students and professors as a traditional teaching environment before the epidemic and maintain the efficiency and motivation of their learning and academic performance [19].

However, the modification of blended learning is a little different before and during the Covid-19 period, which may lead to differences in motivation factors. As a result, these differences need to be compared and see how they influence motivation before and during the pandemic. According to Colpitts et al. [20], though students from higher education institutions learning curriculum in blended learning before and during covid-19, they still demonstrated that there were stronger group bonding and cohesiveness, more effective support from institutions and professors and more efficient to pursue their diploma combine with online studying and offline researching before the epidemic. Meanwhile, Colpitts et al. [20] also illustrated that these students found it difficult balancing competing for academic demands and maintaining scholarly activities with their research activities affected less or more during the Covid-19 period. The loss of social cohesiveness and schedule imbalance may lead to a lack of motivation [21, 22]. In addition to the differences in students' feelings, with a comparison of some other literature focused on blended learning published before and during the pandemic, the blended learning curriculum is also subtly different during an epidemic. Before the epidemic, Kim [23] illustrated that blended learning and its curriculum usually include at least one purely physical-based traditional class with some pure e-learning type and some blended courses with the respect of methodology for conducting a blended learning project including scope and objectives of the program, analysis and addressing of the relevant issues and courses under the overall objectives set and assess the results of the blended learning program. Meanwhile, Singh [24] illustrated that the blended learning should be conducted respecting Khan's octagonal framework and combine several forms of learning tools such as real-time collaboration software, self-paced web-based courses, electronic performance support systems and knowledge management systems and event-based activities, including face-to-face lecture, traditional instructor-led training and online and offline training together. Consistent with these concerns, some common blended learning models were designed by several scholars before Covid-19. For instance, Lewin et al. [25] conduct blended learning for medicine students by providing online basic medicine lessons and case studies before practical clinical courses, which enable students to have flexible discussions during online lectures and thus cultivate a solid knowledge base before face-to-face clinical studying. Mirriahi et al. [26] designed the blended course systematically with the integration of traditional education and online activities, accessible online and offline resources and support and a scientific online and offline assessment. Nevertheless, with the epidemic, the curriculum design concern shifted. We can refer to Colpitts [20], and Dahmash [27], the lack of faculty support, less efficient feedback from instructors and less participation and involvement may decrease students' motivation and thus decline the effectiveness of the learning. To address these problems and adapt to epidemic social distance rules, some scholars pointed out that blended learning during the epidemic focus more on peer instruction and flipped learning [28] and cancel most traditional classes with only small group activities. Peer support could help reduce the influence of lack of school's support and stimulate social work between students to help cultivate their motivation. With less traditional courses, on the contrary, the motivation may decline.

As motivation is declining in the epidemic and change of blended learning during the Covid-19 period, how this method affects students' learning motivation is drawing more attention. Thus, several literatures were compared in this study.

3.2. Blended learning and motivation

Several scholars study how blended learning affect learning motivation before covid-19. Islam et al. [29] illustrated that significant improvement of students' motivation and achievement was revealed by applying the blended learning model. As e-learning method beyond the limitation of time and space and conventional learning is in the midst of the development of technology, they declared that blended learning is more efficient with its flexibility and integration of classic learning and e-learning. It reduced the distance between students and teachers as well as increase their interaction. Concerning learning motivation and learning achievement of students, they conducted a Quasi-Experimental with Nonquivalent Control Group Design to find if students' motivation and achievement were enhanced by blended learning in Nigeria. After recruiting a total of 120 participants and dividing them into four groups that were randomly assigned as a control group and experimental group, and instrument test group, scholars, collected data of student's motivation and achievement by using a questionnaire sheet and multiple-choice sheet. With analysis of the data and significance the data proved, scholars asserted that the application of learning models have a significant effect on the increase of motivation which was the basic capital for the next response of students' achievement improvement. Though this study pointed out that blended learning could enhance students' learning motivation, it limits to middle school students who may not represent higher education students.

More specifically, Sabah [30] demonstrated how blended learning affected motivation and analyzed how motivation was affected from different dimensions. The scholar aims to find motivation factors and barriers that influence students' attitudes towards long-term use of blended learning. Totally 345 questionnaires that consist of collecting demographic information and designed constructs measuring students' perception and influential factors of blended learning were collected. After analyzing data, from the perspective of motivation,

scholars pointed that control motivation may moderately negatively affect students' perceived behavior control and limited effect on students' attitude towards blended learning. Moreover, students' autonomous motivation positively affects students' attitude, perceived behavior, and subject norm, which implicated the demand for better support from instructors and faculty in blended learning. In addition, they found that more friendly and well-defined learning environment and blended learning conducted, students were more satisfied with blended learning, and their motivation, both intrinsic and extrinsic motivation, were enhanced. Thus, their research helped people learn more detailly about how different dimensions of motivation were affected by blended learning and how they reinforce or hinder students' expectation of continuous use of blended learning. Nevertheless, the detailed design of the blended learning they conduct the research and how they defined a completed or well-constructed blended learning were partly neglected in this study.

Agustina [31] indicated that the blended learning model worked better during pandemics, which improved students' learning motivation and learning outcomes. The scholars conducted a pre and post-test in the early days and control period of Covid-19 for 105 two-level students selected by cluster sampling from a Nursing Academy. The data showed that the blended learning model contributes to enhancing students' motivation and outcome of learning. However, they only focus on nursing, and the significant gender differences of participants are revealed in this article.

4. COMPARISON BETWEEN E-LEARNING AND BLENDED LEARNING

As mentioned before, more and more institutions apply the e-learning approach into the curriculum instead of the traditional face-to-face teaching approach to bring more possibilities and convenience to the transmission of knowledge. Many kinds of literature reviews have discussed the advantages and limitations of face-to-face learning and e-learning methods. Before the outbreak of Covid-19, there were many discussions about the advantages and limitations of face-to-face learning and e-learning methods. Graham [17] explains how students and instructors can benefit from face-to-face learning environments while at the same time suffering from limited time, lack of in-depth discussion, and the absence of some participants. Comparably, time and place flexibility, the opportunity for participation of all learners, and deeper reflection are dominant strengths of e-learning. E-learning has shifted the learning environment to a more social, flexible, and personal space [32]. However, according to Saghafi, Franz, and Crowther [33], the e-learning mode can not replace all activities taking place in traditional face-to-face environments in higher education. It is also believed that e-learning will not replace the traditional face-to-face method in the future [34]. Also, for some subjects, not all learning objectives can be achieved by the e-learning method. Silva and Lima [35] illustrated that design education needs face activities such as peer-learning and cannot be successful in a full online mode. Blended learning is to enhances the learning experience by selecting appropriate learning activities that optimize the benefits and reduce the limitations of face-to-face learning and the e-learning method [33].

A case study conducted by Franz et, [33] in Australia compares face-to-face learning and e-learning method in architecture major with a qualitative comparative approach. The study was produced in both faces to face environment and an e-learning environment to compare two methods. At the beginning of the semester, all 165 students participated in a training program provided by the support team to become familiar with all materials that would be used in face-to-face environment and e-learning environment. 24 of 165 students who enrolled in the remaining ten weeks of the semester were divided into two groups to alternatively experience both the face to face and the virtual design studios for ten weeks. The e-learning group provided learning material in Blackboard, review design progress was conducted in the wiki, and ideas were shared through Facebook. In another face-to-face group, the tutor usually used a data projector, whiteboard, and markers to present ideas. There are also coordinators from the university department and several tutors who come from the industry to help facilitate this program. Data collected were analysed using an iterative process of coding informed by Grounded Theory methodology and supported in part by the software program MAXQDA. The software was used to organize and manage documents, codes, and memos. According to the collected data, it can conclude that the interaction in the face-to-face learning environment can enhance learning motivation since there is more opportunity to collaborate. At the same time, students' motivation can also increase during e-learning as some students stated that they have access to see other people's process and gain ideas or direction from it, and this process can 'push' them to work harder."

To combine the advantages of the two learning methods, the adoption of blended learning is to enhance the learning experience by selecting appropriate learning activities that optimize the benefits and reduce the limitations of face-to-face learning and the e-learning method [33]. In another three-year research comparing face-to-face, e-learning, and blended teaching methods, Dziuban, Hartman & Moskal [36] found that blended teaching always gives better success rates than the other two methods. The blended learning environment motivates students to participate in online classes more eagerly to meet and discuss virtually with their classmates. Akkoyunlu and Soylu [37] examined students' views on a blended learning environment. They

discovered that students enjoyed participating in a blended learning environment through which face to face classes was supplemented with online classes. Moreover, they emphasized the significance of communication and interaction for successful learning in online education.

During the time of the Covid-19 pandemic, e-learning has changed from an alternative approach to the only and compulsory approach all over the world. It is necessary to investigate students' motivation under the e-learning method and whether the limitations still exist. Furthermore, there may still need a long period to fully recover face-to-face teaching due to the virus still spreading globally. Exploring whether blended learning can be carried out under safe conditions is necessary to promote students' learning motivation.

According to some empirical studies during Covid-19, students' learning motivation is mostly improved by the e-learning method. In contrast, some students mentioned that they lack the sense of being in the community, which reduces learning motivation. In a cross-country study, Baber [38] found that the e-learning method during pandemics generally increases student motivation both in South Korea and India. Data were collected from 100 undergraduate students from different institutions and courses in both South Korea and India and analysed using the SPSS-AMOS package 25.0 through various statistical tests. Another study was conducted in the Kingdom of Saudi Arabia, focusing on students from the Management and Information Technology Department. Data were gathered in the shape of a self-administered survey and examined by utilizing the Statistical Package for Social Science (SPSS). In this study, students' motivation increased because they are not limited with space or time so that students are more engaged [39].

From all these studies conducted during the pandemic, a key factor that many students mentioned lead to the reduction of learning motivation is the absence of a community environment. In another study, Rovai and Jordan [40] studied a causal-comparative design to investigate the relationship of sense of community between fully online, traditional classrooms, and blended higher education learning environments. They found that blended courses create a stronger sense of community among learners than either traditional or fully online courses. Evidently, an online learning environment offers the effectiveness and flexibility that cannot be guaranteed in a classroom environment. At the same time, face-to-face classes provide the social communication that students need for learning. So, integrating these two environments into a blended format reserves the advantages of both learning platforms [37]. Hence, it can be concluded that one of the principal benefits of blended learning is providing a sense of community amongst learners [41].

Teachers and students communicate virtually via e-learning. This is the predominant feature of such a learning process, different from traditional classes in which instructors and learners engage in face-to-face interaction [42]. Generally, all the terms that describe distance education via computer technology have a unique significance: learning takes place while teacher and learner are separated. It is assumed that engagement in e-learning and virtual classes hinder e-learners from community interaction. By adding human interaction to online learning, educators have considered the human need for socialization, which will facilitate the motivation of learning [43].

5. CONCLUSION

During the period of the epidemic, e-learning was the only teaching method that most institutions could adopt. Generally speaking, e-learning can promote students' motivation to learn. However, it should be noted that from some studies, long-term e-learning learning and teaching method would make some students lack the sense of being in the community which lead to the reduction of learning motivation. Therefore, blended learning can be more adopted under permitted conditions, which can improve learning motivation while ensuring students' safety and staff. In general, since Covid-19 broke out less than two years, the number of articles about e-learning and blended learning is still not much. Moreover, most studies on how e-learning and blended learning change learning motivation only focus on specific topics, and their effects may be different in different disciplines, which needs further discussion in future research.

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