From Face-to-Face to Face-to-Screen: Unveiling the Gaps in Student Confidence During Pandemic-Era Online Learning

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ABSTRAK

Pandemi COVID-19 membawa tantangan signifikan terhadap sistem pembelajaran, khususnya dalam mengubah pola belajar mahasiswa. Penelitian ini bertujuan untuk mengeksplorasi motivasi, emosi, dan perilaku belajar mahasiswa selama tahun pertama pandemi. Penelitian menggunakan pendekatan survei dengan melibatkan 383 mahasiswa program Pendidikan Guru Sekolah Dasar. Data dikumpulkan melalui kuesioner yang mencakup efikasi diri, nilai tugas, kebosanan, frustrasi, strategi elaborasi, strategi metakognisi, kepuasan belajar, dan pengalaman mahasiswa terhadap interaksi tatap muka virtual. Analisis data dilakukan secara deskriptif untuk mengungkap pola dan hubungan antarvariabel. Hasil penelitian menunjukkan bahwa, meskipun mahasiswa menggunakan strategi pembelajaran berbasis pengaturan diri, mereka tetap merasa tidak yakin dengan kemampuan untuk memahami materi secara mandiri tanpa bantuan dosen. Sesi tatap muka virtual lebih sering dimanfaatkan sebagai sarana mencari perancah, bertanya, dan mengonfirmasi pemahaman terhadap materi. Temuan ini mengindikasikan bahwa pembelajaran daring darurat selama pandemi belum memenuhi standar model pembelajaran daring yang ideal. Mahasiswa cenderung mempertahankan pola belajar konvensional, menunjukkan ketergantungan tinggi terhadap bimbingan dosen, dan kurang percaya diri dalam hasil belajar mandiri mereka. Simpulan penelitian ini menyoroti perlunya pendekatan pembelajaran daring yang lebih terstruktur dan mendukung kemandirian belajar mahasiswa. Strategi ini harus mencakup pelatihan pengaturan diri yang lebih efektif untuk meningkatkan kepercayaan diri dan kualitas pembelajaran daring di masa mendatang.

ABSTRACT

The COVID-19 pandemic posed significant challenges to educational systems, particularly in reshaping students' learning patterns. This study aims to explore the motivation, emotions, and learning behaviors of students during the first year of the pandemic. A survey approach was employed, involving 383 undergraduate students enrolled in Elementary Teacher Education programs. Data were collected using a questionnaire that assessed self-efficacy, task value, boredom, frustration, elaboration strategies, metacognitive strategies, learning satisfaction, and students' experiences with virtual face-to-face interactions. Descriptive analysis was conducted to identify patterns and relationships among variables. The results revealed that although students employed self-regulated learning strategies, they remained uncertain about their ability to independently comprehend material without lecturers' guidance. Virtual face-to-face sessions were frequently utilized as a scaffold to ask questions and confirm their understanding of the content. These findings indicate that emergency online learning during the pandemic did not meet the standards of an ideal online learning model. Students tended to maintain conventional learning patterns, exhibited high dependency on lecturers' guidance, and lacked confidence in their independent learning outcomes. This study concludes that structured online learning approaches are necessary to foster students' learning autonomy. Such strategies should include enhanced self-regulation training to improve confidence and the overall quality of online education in the future.

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1. INTRODUCTION

The COVID-19 pandemic changed the conventional instructional delivery strategy, shifting from face-to-face lectures to distance learning (DL). Many educational institutions were forced to pause traditional operations, with the Asian region among the earliest to organize Online Learning (OL) despite a limited understanding of these changes (Alzahrani et al., 2023; Marin & Bocoş, 2021). The shift to online platforms occurred suddenly due to emergency circumstances. The implementation of OL was conducted using existing capabilities and infrastructure without following a set of design procedures to test the feasibility of use, assess student characteristics, or evaluate student and teacher readiness, alongside other technical and non-technical aspects (Tartavulea et al., 2020; Teräs et al., 2020). Learning that had been carried out face-to-face was rapidly converted to OL, with the primary goal of ensuring that learning continued in emergency situations and that learning materials could still be delivered to students to achieve educational objectives (Chang et al., 2020; Thongsri et al., 2019).

Early in the COVID-19 pandemic, many national universities adopted OL with minimal institutional support, relying on freely available applications that were easy for students to use and straightforward for teachers to operate. This approach allowed for the continuation of essential educational activities, such as the delivery of teaching materials, assignment distribution, and assessment of learning outcomes (Badiozaman, 2023; Çelik et al., 2022). Emergency conditions compelled all educational stakeholders to accept the prevailing circumstances, with students in higher education expected to learn independently while adapting quickly to OL (Iglesias-Pradas et al., 2021; Krejci et al., 2020). The transition to OL was initially viewed as a temporary solution, implemented with the hope that the pandemic would soon subside, allowing for a return to conventional learning methods. In this emergency, the primary objective was to ensure that schools remained operational and that learning focused on the delivery of material and assignments to students (Alqabbani et al., 2020; Marin & Bocoş, 2021).

Online learning is not new and its role is increasingly important as it becomes part of the development of teaching professionalism (Gudmundsdottir et al., 2020). However, at the early of the COVID-19 pandemic, the presence of OL replaced conventional learning that had been done causing a lot of disruption to learning because it happened very suddenly and without planning (Alqabbani et al., 2020) and lacking supporting tool (Achmad et al., 2023). Online learning is digitalism, so OL is naturally different from conventional learning in the form of face-to-face (Marin &; Bocoş, 2021). Online learning implementation requires the availability of technical and infrastructure aspects (Iglesias-Pradas et al., 2021), various resources and uses related to the feasibility and effectiveness of the OL platform (Jensen et al., 2020) and teachers who are competent to teach OL (Badiozaman, 2023). Various research findings prove that OL success is related to certain student characteristics that affect OL readiness (Alzahrani et al., 2023; Joosten &; Cusatis, 2020). One of the very real differences between these two platforms is the role of the teacher. Conventional learning is characterized by teachers who are very receptive to supporting the learning process by organizing and providing scaffolds to students.

One of the very real differences between the two platforms is the presence of teachers. The conventional learning process that interacts face-to-face is characterized by teachers who are very receptive to supporting the learning process by organizing and providing scaffolds to students. A scaffold is a metaphor to describe various types of assistance provided by a learner to a learner whose nature is when the learner is constructing knowledge towards a higher understanding (Maybin et al., 1992). Scaffolding is the form and quality of intervention of someone who is more expert (teacher) to students. In OL, teachers and students are not physically present so various interactions that are very intense because they meet physically in face-to-face learning are suddenly eliminated or become very limited. The scaffolding that teachers can provide because of the nature of face-to-face learning is lost and replaced with technological instruments that are unlikely to replace humanistic interaction. This is an ontological limitation that must be accepted as one of the variables of learning conditions in OL. A meta-analysis of the role of scaffolding in OL in the last 10 years shows that scaffolding has a positive impact on OL performance, exerting a greater impact on affective learning domains for all levels of education and various subjects or disciplines (Zuo et al., 2023). In the context of this study, the question arises, what problems do students face in OL when the scaffolding that has been given by teachers is mostly missing or very limited and occurs for about 1 year due to the COVID-19 pandemic.

Early of the COVID-19 Pandemic, Students and teachers try to adapt to various relatively new things such as technical OL applications, digitization of learning content, learning management, time management, communication aspects and so on that are carried out with minimal devices. Online Learning is carried out in virtual spaces which technically require students to be more independent in managing, supervising and evaluating their learners (Dabbagh & Kitsantas, 2016; Tellakat et al., 2019). The findings of various studies show that learning Online Learning has several characteristics that are different from conventional learning and certain student characteristics so that learning runs well.

Learning characteristics in online environments include learner support, course design and organization, content design and delivery, interaction between students and instructors, and assessment (Bedenlier et al., 2020). These elements are critical to the success of online learning but differ significantly from those in conventional learning environments. Student readiness to engage in online learning, which includes factors such as self-regulation and competence in information and communication technology (ICT), plays a crucial role in determining the effectiveness of online education (Alzahrani et al., 2023; Heilporn et al., 2021).

However, the abrupt transition to online learning during the COVID-19 pandemic did not allow for adequate preparation in these areas, particularly in terms of self-regulation—a key requirement for building understanding independently in an online setting. Unlike conventional learning environments, where students can rely on direct scaffolding from teachers to guide their learning process, online learning often lacks this immediate support. This absence of scaffolding, coupled with the need for higher technological proficiency, creates a challenging environment for students, especially when the shift to online learning is sudden and unplanned. This condition posed significant problems for students, leading to potential issues in their emotional well-being, cognitive strategies, and overall learning behaviour. Understanding these challenges is essential for developing strategies to support students more effectively in future online learning environments, especially in scenarios where such a transition might again be necessary. Therefore, this survey research aims to explore the various problems faced by students during two semesters of online learning amidst the COVID-19 pandemic, focusing on their emotional responses, cognitive strategies, and learning behaviours due the lack of support from the lecturers. By examining these aspects, the study seeks to identify specific areas where students struggled and to provide recommendations for improving online learning practices in the future, ensuring that such challenges are mitigated in any subsequent transitions to online education.

2. METHOD

This study utilized a survey research design to explore the experiences of elementary school teacher education students during their transition to online learning amid the COVID-19 pandemic. The survey approach allowed for the collection of quantitative data on student behavior, emotional responses, and cognitive strategies in an online learning environment. The population for this study consisted of students enrolled in the Elementary School Teacher Education program at a university. A total of 383 students participated, divided into two cohorts. The first cohort included students in their 2nd and 3rd semesters at the onset of the pandemic, while the second cohort consisted of students in their 4th and 5th semesters. This sample was chosen to represent students at different stages of their teacher education program, providing insights into how students at various levels were impacted by the sudden shift to online learning. Data was collected through a structured questionnaire administered online to the participating students. The questionnaire was designed to capture information on students' self-regulation strategies, emotional responses, perceptions of online learning, and the challenges they encountered. The questionnaire was distributed via the university's LMS, Virlenda, ensuring accessibility for all participants. The survey consisted of 36 items using a 7-point Likert-type scale to measure participants' consent responses. The variables assessed included cognitive appraisal, which comprised self-efficacy and task value; academic emotions, encompassing boredom and frustration; self-regulated learning behavior, which consisted of elaboration strategies and metacognition mechanisms; and satisfaction with learning. Additionally, the questionnaire included statements to assess students' perceptions of virtual face-to-face lectures, consisting of three Likert-scale items and two open-ended questions. The questionnaire was developed using Google Forms, and its link was distributed to all students via WhatsApp over a two-week period during strict social distancing and periodic lockdowns.

Motivational beliefs were evaluated based on two aspects: self-efficacy and task value (Artino & McCoach, 2008). The self-efficacy questionnaire included five statements designed to measure students' confidence in their ability to independently learn material at their own pace in a self-paced online format. The task value questionnaire, comprising six items, aimed to measure students' perceptions of the relevance, importance, and usefulness of online courses. Negative achievement emotions were measured using the Achievement Emotions Questionnaire (AEQ) (R. Pekrun et al., 2005; Reinhard Pekrun et al., 2011), which included nine items. This instrument captured negative academic emotions such as boredom and frustration. Boredom was assessed with five statements to determine students' disengagement with online platform lectures, while frustration was measured with four statements focusing on feelings of annoyance and irritation experienced during online learning.

Self-regulated learning strategies were assessed through students' self-reported cognitive learning strategies and metacognitive practices while studying on the online platform. The elaboration strategy questionnaire aimed to evaluate students' ability to create summaries and paraphrase learning materials, while the metacognition strategy questionnaire assessed their use of planning, monitoring their

learning outcomes, evaluating self-performance, and setting personal goals. These aspects were measured using the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1993), which consisted of four statements for elaboration strategies and nine statements for metacognition strategies. Satisfaction with online learning was assessed using a questionnaire adapted from Anthony R. Artino (Artino, 2009). This aspect measured students' perceived fulfillment of their learning needs through the online learning platform and their likelihood of recommending the platform to others. The satisfaction questionnaire consisted of three items. Additionally, the study explored students' preferences regarding virtual face-to-face lectures or video conferencing. Statements included preferences such as liking to see the faces of lecturers and friends during virtual sessions, as well as opting to turn off the camera. The survey also included two open-ended questions asking students to describe what they liked and disliked most about virtual face-to-face lectures. This mixed-method approach provided both quantitative and qualitative insights into students' experiences and perceptions of online learning environments.

The collected data was analysed using descriptive and inferential statistical methods to determine the relationship between 4 aspects of measurement, except for 2 open-ended questions regarding Virtual Face-to-Face lectures which are analysed descriptively. The questionnaire consisted of 36 statements and was supplemented with several questions about the implementation of Virtual Face-to-Face lectures. Descriptive statistics were used to summarize the data, providing an overview of students' experiences and challenges during online learning. Inferential statistics, including correlation and regression analyses, were conducted to examine the relationships between different variables, such as the impact of self-regulation strategies on students' satisfaction with online learning. The analysis aimed to identify significant predictors of successful online learning outcomes and areas where students faced the most difficulties.

3. RESULT AND DISCUSSION

Result

The results of descriptive statistical calculations and correlational analysis are shown in Table 1. As indicated in Table 1, Boredom and frustration were statistically significantly associated (r_{383} = 0.75, $p<.001$), as were both variables for measuring the behaviour of self-regulatory learning strategies, elaboration strategies and metacognition strategies (r_{383} = 0.67, $p<.001$). The same is seen in both variables that build motivational confidence, namely self-efficacy and task value (r_{383} = 0.51, $p<.001$). Student boredom was not related to metacognition strategies nor elaboration strategies (r_{383} = -0.13, $p<.001$ and r_{383} = 0.04, $p<.001$). This can be interpreted that students have made independent learning efforts or not, not related to boredom. This finding is different from previous findings that the boredom of OL students is negatively related to self-regulation learning strategies, or the greater the boredom of students, the less self-regulation students have in learning (Artino & Jones, 2012). Student boredom had a negative relationship with satisfaction (r_{383} = 0.49, $p<.001$). The two variables that build motivational confidence, namely self-efficacy and task value, have a relationship with satisfaction (r_{383} = 0.497, $p<0.001$) and (r_{383} = 0.51, $p<.001$).

Tabel 1. Descriptive Statistics Cronbach's Alpha, and Pearson's Correlation of Measured Variability (N = 383)

Variable	Alfa Cronbach	1	2	3	4	5	6	7
Sefl-efficacy	1.00	-	0.51	-0.38	-0.44	0.24	0.26	0.50
Task value	1.00		-	-0.36	-0.45	0.41	0.26	0.51
Boredom	1.00			-	0.75	0.05	-0.13	-0.98
Frustration	1.00				-	-0.04	-0.20	-0.52
Elaboration	0.94					-	0.66	0.23
Metacognition	0.93						-	0.38
Satisfaction	0.85							-
M		3.30	5.07	4.45	3.62	5.19	5.04	2.90
SD		1.40	1.17	1.46	1.30	1.09	1.05	1.19

Note: All subscales utilized the following response scale: 1 (completely disagree)-2 (Mostly disagree) - 3 (tend to disagree) - 4 (Neutral) - 5 (Trend to disagree)- 6 (Mostly disagree)- 7(Completely agree). The correlation is calculated at the significance level p < 0.001

Table 2 shows the mean (M) and standard deviation (SD) of the 36 questionnaire items shown in Table 3. Motivational confidence is measured by task value and self-efficacy. As indicated in Table 2, overall students agree that this lecture is important (task value*)*, where the total M = 5,071), but this is different from the aspect of self-efficacy The average total number for self-efficacy (M = 3.302, SD = 1.203) which can be interpreted that in general students tend not to be sure they can learn the

material independently. The two statements that give the lowest lift are as follows: (1) The statement "I believe I can study without a lecturer to help me" where the value M = 2.997. This adoption can mean that most students are not sure that they can study without the help of lecturers at OL; Self-efficacy is even lower indicated by the statement (2) "I am confident that I can understand the most difficult material presented online lectures independently" with a value of M = 2.73, This number can be interpreted that in general students are increasingly unsure that they can understand the most difficult material in online learning without the help of lecturers. Nevertheless, students admitted that they had tried independent learning (total M elaboration strategies = 5.193; and total M Metacognition strategies = 5.039).

Tabel 2. Descriptive Statistical Variable (N = 383)

Statements	M	SD
Self-efficacy		
Even in the face of technical difficulties, I am certain I can learn the material presented in an online course	3.683	1.277
I am confident I can learn without the presence of an instructor to assist me.	2.997	1.478
I am confident I can do an outstanding job on the activities in a self-paced online course.	3.819	1.435
I am certain I can understand the most difficult material presented in a self-paced online course.	2.728	1.326
Even with distractions, I am confident I can learn material presented online.	3.131	1.448
Total	3.302	
Task value		
It was personally important for me to perform well in this course.	5.513	1.359
This course provided a great deal of practical information.	4.505	1.387
I was very interested in the content of this course.	4.526	1.308
Completing this course moved me closer to attaining my career goals.	5.057	1.573
It was important for me to learn the material in this course.	5.712	1.258
The knowledge I gained by taking this course can be applied in many different situations.	4.997	1.333
Total	5.071	
Boredom		
While completing this online course…		
I was bored.	4.853	1.438
I felt the course was fairly dull.	4.898	1.505
My mind wandered.	4.819	1.469
I was uninterested in the course material.	3.568	1.459
I thought about what else I would rather be doing.	4.280	1.464
Total	4.448	
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Total	4.448	
Frustration		
While completing this online course.		
I felt frustrated.	4.503	1.651
I was angry.	3.639	1.532
I felt as though I was wasting my time.	2.866	1.610
I was irritated.	3.702	1.664
Total	3.620	
Elaboration Strategy		
While working through this online course…..		
I tried to relate what I was learning to what I already know.	5.335	1.069
I tried to make all the different ideas fit together and make sense to me.	4.989	1.058
I made up my own examples to help me understand the important concepts.	5.105	1.166
I tried to connect what I was learning with my own experiences.	5.269	1.115
Total	5.193	1.093
Metacognition Strategy		
While working through this online course….		
If I became confused about something I read, I went back and tried to figure it out.	5.379	1.182
If course material was difficult to understand, I changed the way I studied it.	5.081	1.192
I asked myself questions to make sure I understood the material I was studying.	5.099	1.169
I tried to think through each topic and decide what I was supposed to learn from it, rather than just reading it over.	5.034	1.105
I tried to determine which concepts I didn't understand well.	5.104	1.095
I set goals for myself in order to direct my activities.	5.105	1.187
If I got confused during online activities, I made sure I sorted it out before proceeding on to the next section of the course.	4.945	1.238
I kept track of how much I understood, not just if I was getting through the material.	4.858	1.158
I stopped once in a while and went over what I had learned.	4.605	1.055
Total	5.039	
Satisfy		
Overall, I was satisfied with my online learning experience.	3.861	1.588
This online course met my needs as a learner	3.712	1.600
I would recommend this online course to a friend who needed to learn the material	3.898	1.554
Total	**3.872**	

Note: All subscales utilized the following response scale: 1 (completely disagree)-2 (Mostly disagree) - 3 (tend to disagree) - 4 (Neutral) - 5 (Trend to disagree)- 6 (Mostly disagree)- 7(Completely agree). The correlation is calculated at the significance level p < 0.001

Table 2 also indicates that learning with an OL platform causes boredom (M total = 4.448) even if not to the point of frustration. An interesting thing is indicated in the measurement of satisfaction is at a total value of M = 3.872 or close to the value of 4.0 or neutral. Likewise, the same thing with the other two statements, namely: (1) This online course meets my needs as a student (M = 3,712) and (2) I will recommend this online course to friends who need to learn the material (M = 3,898). The implementation of social distancing and periodic lockdowns causes students not to be allowed to come to campus so that with the video conference, lecturers and students can still meet virtually. Virtual Face-to-Facelectures facilitate virtual real-time live communication. This part of the questionnaire aims to provide data related to facial expressions. In conventional learning, teachers' facial expressions are nonverbal communication behaviors that are highly considered and provide an important contribution to pedagogical interactions (Jakonen & Evnitskaya, 2020; Sitompul, 2012). Student answers are shown in Table 3.

Tabel 3. Descriptive Statistics of Virtual Face-to-Face Lecturer (N=383)

Statements	M	SD
When lectures are conducted face-to-face virtually: I like to see the lecturer's face.	4.947	1.375
When lectures are conducted face-to-face virtually: I like to see the faces of friends	5.216	1.416
When lectures are conducted face-to-face virtually: I turn off the camera	4.708	1.255
Total	**4.957**	**1.349**

Note: All subscales utilized the following response scale: 1 (completely disagree)-2 (Mostly disagree) - 3 (tend to disagree) - 4 (Neutral) - 5 (Trend to disagree)- 6 (Mostly disagree)- 7(Completely agree). The correlation is calculated at the significance level p < 0.001

In addition to learning carried out in LMS, OL lectures are carried out virtually so that students and lecturers can see each other's faces and communicate directly in real-time. This form of learning is called Synchronous learning (Chaeruman et al., 2018). Table 4 presents responses regarding what students liked most about virtual face-to-face lectures. The data reflects students' preferences and positive experiences during these sessions, highlighting aspects such as the ability to see the lecturer's face, engage with classmates visually, and interact in real-time.

Table 4. What Students Like Most About Virtual Face-to-Face Lecturer (N = 383)

It's nice to be able to "meet" with friends and lecturers	Better understand the subject matter
1. Seeing the faces of friends and lecturers when explaining the material. 2. Motivated me with the spirit of college even though it was online. 3. Learning is also more "delicious". 4. Know their situation. 5. Being able to establish communication is better than communication via online 6. The sense of community is there, can chat casually. 7. Lecturers are better able to monitor their students. 8. Interact directly with lecturers and friends. 9. Can see facial expressions. 10. The classroom atmosphere is crowded and also the jokes of lecturers who are teaching. 11. Practice communication skills. 12. Better understand what the lecturer said by looking at the lecturer's face.	1. It is easier to understand the material, because the material is delivered orally like a lecturer. offline. The explanation of the material is more detailed. It's just that Virtual Face-to-Face lecturer are limited by technology. 2. I can understand the lecturer's explanation directly, no longer need to give messages via cell phone because it takes a long time to understand, ask / trouble friends who understand. 3. Questions and answers are more comfortable, not embarrassed to ask. 4. Can be asked via chat to the lecturer. 5. The delivery of the material is to the point. 6. Exchange ideas and share lessons learned that day. 7. Record new material and more experience from lecturers. 8. Can disable faces during presentations. 9. Love online presentations because it minimizes nervousness during live presentations. 10. Better understand what the lecturer said by looking at the lecturer's face.

Discussions

The shift from conventional learning to online learning (OL) during the COVID-19 pandemic has highlighted the stark differences between these two modes of education. Conventional learning, characterized by direct interaction with instructors and peers, contrasts with OL, where students are required to have high levels of self-regulation and self-efficacy due to limited scaffolding from teachers. This study's findings align with previous study who argue that OL environments place significant demands on students' self-regulatory abilities because they must independently manage their learning process (Alzahrani et al., 2023; Mahmud & German, 2021). The results of this study, which indicate that students attempted to apply elaboration and metacognition strategies but still felt dependent on lecturer assistance, support prior research emphasizing the challenges students face in maintaining self-regulation in OL settings (Hwang et al., 2020; Oinas et al., 2022).

Moreover, the student reliance on Virtual Face-to-Face interactions to better understand material, as reported in this study, resonates with other studies, who found that the emotional connection facilitated by seeing the lecturer's face can positively impact student engagement (Arlinwibowo et al., 2020; Malan, 2020). This aspect of virtual learning mirrors conventional settings where the instructor's presence and non-verbal cues play a crucial role in the learning process. On the other hand, the findings of another study suggest that the widespread use of digital technologies in OL can lead to frustration (Chaturvedi et al., 2021). However, this study found that students generally reported neutral feelings of frustration and boredom, which may reflect a broader acceptance of the emergency conditions imposed by the pandemic.

This study also explores the concept of self-regulated learning versus independent learning. The data suggests that students may not be fully equipped with self-regulation strategies but instead rely on independent learning, which is characterized by minimal lecturer support. This finding is consistent with previous studies who emphasize the importance of positive emotional connections in fostering student motivation and satisfaction in learning environments (Arora et al., 2021; Asanov et al., 2021). The

preference for real-time interaction with lecturers, as opposed to asynchronous communication channels like WhatsApp or LMS chat boxes, further supports the idea that students with lower self-efficacy may struggle to trust their understanding without immediate feedback from instructors. In contrast, students with higher self-regulation are more likely to set goals and continuously assess their understanding independently, aligning with the findings of previous study which highlight the importance of self-efficacy in successful OL (Ahmed et al., 2023; Makransky et al., 2019). This study adds to the existing literature by underscoring the ongoing challenges students face in adapting to OL and the critical role of instructor support in facilitating student success in these environments.

This study has several limitations that may affect the interpretation of its findings. Firstly, the research was conducted during the early stages of the COVID-19 pandemic, a period marked by rapid transitions to online learning under emergency conditions. This unique context may have influenced students' learning experiences and perceptions in ways that differ from more stable, post-pandemic scenarios. Consequently, the results may not fully reflect the experiences of students in a normalized or more developed online learning environment. Additionally, the study relied on self-reported data through questionnaires, which may introduce response biases. Students may have reported more favourable attitudes towards online learning or underestimated challenges due to social desirability or a lack of self-awareness, potentially skewing the results. Another limitation is the narrow focus on a single institution's LMS and online learning design, which may not be representative of other educational settings. The findings may not fully capture the variety of online learning experiences across different institutions or technological platforms. Moreover, the study's cross-sectional design, limited to two semesters, does not account for the long-term impacts of online learning on student behaviour and self-regulation. A more extended timeframe and a broader range of institutions would provide a more comprehensive understanding of the enduring effects and potential variations in online learning experiences.

Future research should address these limitations by incorporating longitudinal studies that track students' experiences and self-regulation strategies over a more extended period. This approach would offer insights into how online learning impacts students' long-term academic performance and adaptation processes. Longitudinal research could reveal whether the challenges identified during the early pandemic persist over time and how students' learning strategies evolve as they become more accustomed to online environments. Additionally, expanding research to include diverse educational contexts and platforms would enhance the generalizability of the findings. By comparing online learning experiences across multiple institutions and technological systems, researchers could identify best practices and common challenges applicable to a wider range of educational settings. Mixed-methods approaches, combining quantitative surveys with qualitative interviews or focus groups, would provide a more nuanced understanding of students' experiences and the effectiveness of different online learning models. This comprehensive approach could lead to more effective strategies for supporting students in online learning environments.

4. CONCLUSION

The transition from conventional to online learning during the COVID-19 pandemic highlighted significant challenges and gaps in the design and implementation of online learning environments. The shift, driven by emergency circumstances, lacked the theoretical foundation and structured development typically associated with effective online learning models. Consequently, while online learning served as a temporary solution for delivering educational content, it did not fully adhere to established online learning theories and best practices. This lack of preparation and support has impacted students' learning experiences, revealing a reliance on lecturer assistance and a lack of confidence in their independent learning abilities. The study's findings indicate that, despite efforts by students to employ self-regulation strategies, there remains a significant dependence on direct instructor support. This dependency underscores the necessity for more robust online learning designs that incorporate theoretical principles and provide adequate scaffolding to support student independence. Moving forward, it is crucial for educational institutions to develop and implement online learning models that are grounded in effective design practices and address the inherent challenges of remote education. This approach will help ensure that online learning environments are both pedagogically sound and supportive of student success.

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6. REFERENCES

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