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Exploring the Effect of Remote Teaching on Preservice Special Education Teachers Motivation During COVID-19 Pandemic

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Abstract

The study aimed to explore the impact of remote teaching on the motivation towards learning of special education students in a private university in the UAE. The researchers administered a 22-item questionnaire to 150 special education students and analyzed the data collected to determine the level of their motivation towards remote teaching. The results of the study revealed that the motivation of special education students towards remote teaching was moderate. The study also found that there was no significant difference in motivation levels based on gender, academic year, and job status. The findings of this study can be beneficial for designing and implementing teacher education programs that cater to the needs of special education students. Furthermore, the study provides valuable insights into the effective use of remote teaching in special education. The implications of the study suggest that educators need to develop specific strategies to increase the motivation of special education students towards remote learning. For example, educators may consider the use of interactive and engaging teaching methods, such as gamification or multimedia tools, to increase student engagement and motivation. Finally, the study recommends further research to explore the impact of remote teaching on the academic performance of special education students. Further research can help to identify effective teaching strategies that can enhance student learning outcomes and contribute to the development of effective teacher training programs.

Index Terms: Special education, Motivation, Remote teaching, Technology, COVID-19.

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1. Introduction

The outbreak of COVID-19 in early 2020 caused a rapid shift in the global education system, moving from traditional in-person classes to remote teaching. The pandemic resulted in lockdowns and restrictions, making it necessary for academic institutions to find alternative ways to continue education. To overcome this challenge, institutions turned to remote teaching where students and teachers interact through technology. This change was a rapid one, but it was necessary in order to maintain the continuity of the learning process during these unprecedented times.

This new mode of education is commonly referred to as e-learning, and it is a form of remote teaching. Although some institutions had already begun exploring e-learning prior to the pandemic, its full potential is only being realized now. E-learning offers numerous opportunities and benefits to students, including convenience (Poole, 2000), flexibility (Chizmar & Walbert, 1999), time-saving, teamwork, and the ability to collaborate with others across geographical barriers (Hung, Chou, Chen, & Own, 2010). It also empowers students to have greater control over their learning activities and to make choices regarding their coursework, such as the pace, depth, breadth, time management, and location (Stansfield, McLellan, & Connolly, 2004).

While e-learning has proven to be an effective solution to the challenges posed by the pandemic, it is not without its drawbacks. As Chung, Subramaniam, and Dass (2020) have noted, remote teaching cannot replicate the personal interaction and social engagement that is present in traditional in-person classrooms. This lack of human connection can lead to decreased student engagement, interaction, and a suboptimal learning experience.

Online learning in the UAE

Higher education institutions in the UAE have invested significantly in e-learning since 2000, which encompasses all forms of education delivered wholly or partially through digital means (Ati & Guessoum, 2010). While a few institutions provide exclusively online courses, others have adopted blended or hybrid methods (Moussa-Inaty, 2017). Various factors, such as the need to prepare students for a rapidly changing and technology-driven world (Vrazalic, MacGregor, Behl, & Fitzgerald, 2009), traditional cultural values that prefer gender segregation (Naaj, Nachouki, & Ankit, 2012), and the desire to cut costs in multi-campus institutions, have influenced the adoption of e-learning in the UAE (Naaj et al., 2012). However, the rate of e-learning adoption remained low until the COVID-19 pandemic, failing to reflect

the substantial investments made in this learning modality (Daouk & Aldalaien, 2019).

Unfortunately, there is a paucity of academic research focused on e-learning in UAE higher education institutions (Daouk & Aldalaien, 2019; Thabet, Hill, & Gaad, 2020). Most of the existing research has an attitudinal focus, seeking to understand how instructors and students perceive the use of various online, blended, and hybrid learning modalities and the challenges they encounter. Several studies, such as those by Schoepp (2005), Thabet et al. (2020), and Hussein et al. (2020), have demonstrated that faculty members generally hold a positive attitude and appreciate the benefits of integrating digital technology into the educational process. Other studies, such as those by Dougherty, Butler, and Hyde (2011), Naaj et al. (2012), Moussa-Inaty (2017), and Fidalgo, Thormann, Kulyk, and Lencastre (2020), have explored students' perceptions of various online learning formats in the UAE. Interestingly, despite students' overall satisfaction with their academic performance and achievements, all of these studies have come to the same conclusion: they still prefer face-to-face instruction.

One of the rare studies that looks at how students at a university in Dubai feel about emergency online learning is Almuraqab's (2020) study on online learning in the UAE during the COVID-19 epidemic. According to the study, roughly 47% of respondents said this method of learning was beneficial. Its advantages included location flexibility, easy access to high-speed technology, and time and effort efficiency. Yet, the biggest barrier was determined to be a lack of proper assistance from teachers and peers.

Motivation in Learning

Motivation is defined as "a theoretical concept that explains the reasons behind the initiation, direction, intensity, longevity, and quality of behavior, particularly behavior that is directed towards achieving a specific goal" (Brophy, 2010:3). The interplay of individual cognitive and emotional processes, and the interaction between the learner and their learning environment, play a role in determining motivation, and these factors can either facilitate or hinder motivation, depending on the context and social factors at play (Schuck et al., 2014).

Motivation, referred to as the "driving force of learning" (Paris & Turner, 1994), influences the content, method, and timing of learning (Schunk & Usher, 2012). According to Ryan and Deci (2000a, 2000b), motivated learners are capable of engaging in challenging learning tasks and are more likely to actively seek out effective strategies, enjoy the learning process, and demonstrate better persistence and creativity in their learning. According to Ghergulescu & Muntean

(2012), motivation is a mental state or energy that drives the pursuit of knowledge, instigates learning, and sustains participation in the learning process. It can also be seen as an internal or external influence on the learner that influences their behavior and performance and guides them towards a specific goal or objective. From a cognitive perspective, motivation is an internal state that activates the thoughts, knowledge, consciousness, and focus of the learner. It drives the learner to persist and maintain performance in order to achieve a balance of cognition and mental well-being. Additionally, motivation is a state of psychological arousal that compels the learner to utilize their full potential in educational settings that cater to their interests and lead to self-actualization.

Motivation is an inner drive that impacts a learner's actions and accomplishments. It involves the learner's natural desire to learn and the pleasure they derive from the learning process. Furthermore, it encompasses the perceived significance of the task to the learner, which influences their behavioral intention. Students who are motivated tend to participate in self-regulated activities that assist them in achieving their goals (Kemp et al., 2019). Additionally, it has been found that learners who lack motivation and self-regulation in online learning may encounter difficulties in meeting deadlines and may not produce high-quality work. This is due to the fact that motivation and self-regulation play a critical role in determining a student's learning outcomes. When students have a high level of self-regulation, they are able to manage their own learning effectively, set objectives, and make informed decisions about the content they need to focus on. Conversely, a lack of motivation and self-regulation may lead to decreased engagement and poor academic performance (Albelbisi & Yasop, 2019). Fairchild, Jeanne Horst, Finney, & Barron (2005) confirm that motivation plays a critical role in shaping a student's attitude and actions towards learning in any educational environment. Active learning, as outlined by Pintrich & Schunk (2002), is a combination of two intangible elements: cognition and motivation.

Ryan and Deci (2000) suggest that students who display both intrinsic and extrinsic motivation generally perform better academically than those who lack motivation. Intrinsic motivation has a beneficial effect on a student's development, including their cognitive, physical, and social growth. Deci and Ryan (1985) further point out that intrinsic motivation is linked to lower dropout rates, better quality of learning, and the use of effective learning strategies.

Extrinsic motivation pertains to the pursuit of rewards and recognition, such as high grades, awards, or prizes, as opposed to intrinsic motivation, which is driven by the individual's inherent interest and enjoyment of the learning process. Garrison's model

(1997) suggests that motivation to learn is influenced by both the perceived value of learning and the expected success in learning. Motivation is generally viewed as a reciprocal relationship with responsibility, where students must exhibit a strong desire to learn and take an active approach to maintain their motivation (Candy, 1991). Ryan and Deci (2000) have found that students who are motivated in their learning experience a sense of autonomy and freedom in determining their learning path, even in remote teaching environments.

Research Problem and Questions:

With the many technological and cognitive advancements affecting education, it is imperative to examine ways to enhance learner effectiveness and performance in the new remote teaching environment. Given the critical role that motivation plays in ensuring consistent and high-quality work, this study aims to explore the motivation of university students and its impact on their academic success. To this end, an attempt will be made to answer the following questions:

1. What is the degree of motivation of special education students towards remote teaching?

2. Are there statistically significant differences in the degree of motivation towards remote teaching as a function of gender?

3. Are there statistically significant differences in the degree of motivation towards remote teaching as a function of academic year?

4. Are there statistically significant differences in the degree of motivation towards remote teaching as a function of job status?

2. Literature Review

In recent years, there has been a substantial amount of academic research dedicated to online education. E-learning is a technology that enables students to acquire knowledge digitally, both online and offline, from anywhere and at any time, fostering greater self-sufficiency in learning (Mayer, 2017). The evidence is compelling that effective utilization of e-learning tools can enhance student motivation and attendance (Keller and Suzuki, 2004; Luo, Zhang, Y. and Zhang, M., 2019). Moreover, there is ample evidence to suggest that e-learning is a groundbreaking approach to education, offering students the opportunity to learn digitally through interactive and engaging software and hardware technologies (Man, Azhan, and Hamzah, 2019).

The scope of e-learning is wide-ranging and can encompass various materials, such as theoretical content, videos, tests, simulations, and other components (Bovermann and Bastiaens, 2020). Studies have indicated that computer and internet proficiency are crucial factors that influence student satisfaction with e-learning (Kumar Basak, Wotto and Belanger, 2018). Digital education is closely related to the e-learning concept (Kew et al., 2018), and all digital materials, including text, images, animation, or video, can be integrated into e-learning platforms like Moodle (Kim, Hong and Song, 2019; Vaona et al., 2018).

A comparison of student motivation between traditional classroom settings and e-learning courses was conducted by Rovai, Ponton, Wighting, & Baker (2007), revealing that students taught through e-learning demonstrated higher levels of intrinsic motivation than those in traditional classrooms. The study also found no significant differences in extrinsic motivation measures or overall motivation between the two groups. The results further suggested that graduate students were more intrinsically motivated than undergraduate students in both e-learning and traditional education.

Yustina, Halim, and Mahadi (2020) conducted a research investigation to determine the effect of the Sciences Subject on the academic motivation and challenges encountered by students at Kemper High School during the COVID-19 pandemic through e-learning. The study, which was semi-experimental in nature, evaluated students' motivations and obstacles related to remote teaching. In order to achieve this goal, the study considered 5 indicators related to academic motivation and 10 indicators related to internet-based obstacles. The results indicated that remote teaching has the potential to motivate students towards their studies, but it is perceived as less engaging and not as appealing. The obstacles in remote teaching include issues with internet tools and difficulty with practical tasks during the pandemic.

Zhou, Ren, and Tan (2019) shed light on the process of developing remote teaching websites. They evaluated students' performance in an English vocabulary memorization training course and used a website to aid in the memorization process. The students were given motivation at two different stages. The findings showed that students were less motivated when trying to memorize the information, but more motivated when they were close to finishing. This highlights the need for improvements to internet tools to enhance the performance of electronic websites and programs and increase students' effectiveness.

Nogi and Abdelkader (2019) examined the most cutting-edge techniques utilized in university education in Algerian universities and

their effect on students' motivation to learn. The study aimed to determine if these university methods have a positive impact on students' motivation. To do so, the researchers employed the qualitative method, which was deemed the most appropriate method for this type of study. Therefore, a survey was administered to 536 participants and the results showed that the use of collaborative teaching method in university education positively impacted students' motivation for learning, the discussion method had a positive impact, the presentation method had a negative impact, and the educational tools used in university education had a positive impact on students' motivation to learn. The results of the study indicated that there are notable variations in the motivation for learning among master's students based on gender (male vs. female) and the type of college. The study concluded that the innovative teaching methods used in universities have a positive influence on students' motivation to learn.

Lee, Song, and Hong (2019) looked into the drivers that prompt students to continue participating in remote teaching. They surveyed 737 students from a Korean university that uses the remote teaching system. The results showed that the six main factors that motivated students in remote teaching were psychological motives, peer collaboration, problem-solving strategies, interaction with instructors, social support, and learning management. The first factor, psychological motives, encompasses students' thoughts and emotions, including their level of attention and expectations towards remote teaching. These expectations were deemed crucial for enhancing the quality of the remote teaching experience.

Bryantseva, Vittenbek, Yadrov, Pastukhova, & Ivanova (2019) conducted a research on student motivation and requirements for e-learning at a university. In general, students were motivated to study remotely because they wanted to obtain a university degree. Additionally, the majority of students were looking to continue their education after graduation. The findings showed that the students' positive motivations included a desire for innovation, a sense of responsibility driven by internal motivation, the need to acquire knowledge, and a high level of motivation for remote teaching. The research also revealed that the highest levels of motivation were seen in students under 20 years old, who also had the highest levels of motivation for e-learning.

Islam et al. (2018) conducted a study with 120 students from a Nigerian university to examine the correlation between motivation and academic success in a hybrid education system. The results revealed that there was a statistically significant difference between students in the hybrid education system and those in a traditional

classroom setting. Students in the hybrid education system demonstrated higher levels of motivation and academic achievement.

Harandi (2015) conducted a study with a sample of 140 students of different specializations and academic years to explore the connection between e-learning and motivation in students. The results showed that students had a higher level of motivation for e-learning, which led to better educational outcomes.

3. Methodology

Participants

The research design employed in the study was quantitative in nature. The sample consisted of 150 special education students from a private university in the United Arab Emirates who participated by filling out a questionnaire. The 180 questionnaires that were distributed had a response rate of 83%. All participants were assured of anonymity in the study.

Table 1: Distribution of gender and years of study and the percentile of participants

Variable	Category	Frequency	Percentage
Gender	Male	29	19.3
	Female	121	80.7
Academic Level	First-year	11	7.3
	Second-year	39	26.0
	Third-year	74	49.3
	Fourth-year	26	17.3
Job Status	I work	127	84.7
	I don't work	23	15.3

As shown in Table 1, the sample group comprised of 150 participants (29 males vs. 121 females). Moreover, the sample group included 11 first-year students, 39 second-year students, 74 third-year students, and 26 fourth-year students. Regarding the job status, employees were 127 persons whereas 23 persons were non-employees.

Instrument

After an extensive literature review, the authors designed two questioners, the first one was to collect demographic information (i.e. gender, academic level and job status); whereas the second questionnaire was the motivation questionnaire which consisted of 22 items and used a 4-point Likert scale ranging from: 1. Strongly agree; 2. Agree; 3. Disagree; 4. Strongly disagree.

Validity

The questionnaire's in its primary form was presented to eight university professors specializing in the special education and psychology. They were asked to review the questionnaire, assess the items' clarity and appropriateness, and give their opinions as to whether the items were appropriate for assessing student's motivation. A consensus was reached on which items to maintain (i.e. 90 percent were maintained), and the remaining were corrected based on the reviewer's opinions and suggestions. The instrument's final form comprised of 22 items.

Reliability

The instrument's reliability was calculated using alpha Cronbach's coefficient, which yielded in a total coefficient was 0.98.

4. Data Analysis and Findings

For the purpose of answering the first question "What is the degree of motivation of special education students towards remote teaching?", Means and standard deviations of items were calculated. As shown in Table 2, students' motivation towards learning was moderate (M: 2.41; SD: 0.84). The highest mean was for item 15: "I feel comfortable gaining knowledge through remote teaching" M (2.59) and (1.34). However, the lowest mean was for item 8: "The material is presented in a desirable, attractive way" M (2.17) and a SD (1.18). Table 2 shows the Means, standard deviations, sequence, and average Means of items in a descending manner.

Table 2: Means, standard deviations, sequence, and average Means of items in a descending order

Sequence	No.	Item	Mean	SD	Average Mean
1	15	I feel comfortable gaining knowledge through remote teaching .	2.59	1.34	Moderate
2	21	I am concerned with remote teaching .	2.52	1.31	Moderate
3	22	I feel confident during remote teaching.	2.51	1.24	Moderate

4	11	I feel responsible towards learning.	2.51	1.24	Moderate
5	14	I enjoy remote teaching .	2.51	1.26	Moderate
6	9	I feel comfortable communicating with my peers during remote teaching .	2.49	1.16	Moderate
7	19	I feel more excited about dealing with a new challenge in remote teaching .	2.47	1.26	Moderate
8	18	I feel satisfied with eliminating some obstacles encountering my self-improvement in traditional learning such as embarrassment.	2.45	1.20	Moderate
9	12	I feel more concentrated about the learning process in remote teaching as some distractions of the classroom environment eliminate.	2.45	1.29	Moderate
10	13	Remote teaching makes me curious about discovering new technical skills.	2.45	1.26	Moderate

11	20	Remote teaching gives me a greater capacity for imagination and improves my critical thinking.	2.41	1.26	Moderate
12	5	Remote teaching improves my ability for solving problems and finding more accessible ways to supportive websites.	2.41	1.17	Moderate
13	16	I can interact with the teacher so easily.	2.38	1.27	Moderate
14	17	Remote teaching allows me to express my opinion without embarrassment.	2.37	1.20	Moderate
15	4	Remote teaching removes the mental pressures I encounter in the classroom.	2.36	1.09	Moderate
16	7	I feel equal during the remote teaching.	2.36	1.09	Moderate
17	2	Remote teaching provides me with the opportunity to listen to my presentations in the appropriate time and place.	2.35	1.06	Moderate
18	10	The discussion method is employed and	2.35	1.18	Moderate

		students are given the opportunity to express their opinions with absolute freedom.			
19	6	Guiding students to adopt the survey method and searching.	2.32	1.17	Low
20	3	Giving assignments and tasks that encourage for critical thinking and for finding solutions for problems.	2.30	1.10	Low
21	1	I possess the appropriate systems for remote teaching (Laptop, IPad, Mobile).	2.22	12	Low
22	8	The material is presented in a desirable, attractive way.	2.17	1.18	Low
Total			2.41	0.841	Moderate

To answer thee second question "Are there statistically significant differences in the degree of motivation towards remote teaching as a function of gender?" means, standard deviation and t-value were calculated and as can be seen in Table 3 below, there are statistically no significant differences ($\alpha \leq 0.05$) in the means of motivation towards learning as a function of gender.

Table 3: Mean, standard deviation, and t-value of the differences in the means of students' motivation as a function of gender

Gender	Frequency	Mean	SD	T-Value	Degree of Freedom	Sig.
Male	29	2.38	0.94	-0.192	148	0.848

Female	121	2.41	0.82

To answer the third question, "Are there statistically significant differences in the degree of motivation towards remote teaching as a function of academic year?" Means and standard deviations of motivation for remote teaching as a function of academic year of students were calculated. As shown in Table 4, there are no clear differences in the Means of students as a function of academic year. To determine this statistically, one-way ANOVA test was calculated (Table 5). Results showed there are statistically no significant differences ($\alpha \leq 0.05$) in the means of motivation towards remote teaching as a function of academic year ($F = 2.86$; $\alpha = 0.00$).

Table 4: Mean and standard deviation in motivation towards remote teaching as a function of academic year

Academic Year	Frequency	Mean	SD
First	11	2.97	0.91
Second	39	2.53	0.99
Third	74	2.25	0.74
Fourth	26	2.42	0.76
Total	150	2.41	0.84

Table 5: One-way ANOVA of the differences in the means of motivation towards remote teaching as a function of academic year

ANOVA	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Between groups	5.85	3.00	1.95		
Within groups	99.63	146.00	0.68	2.86	0.039
Total	105.48	149.00			

*As shown in Table 5, there are statistically significant differences between first-year and third-year students.

And finally to answer the fourth and last question "Are there statistically significant differences ($\alpha \leq 0.05$) in the degree of motivation towards remote teaching as a function of job status?" One-way ANOVA was performed and as indicated in Table 6, there are statistically no significant differences ($\alpha \leq 0.05$) in the means of differences in motivation towards learning as a function of job status.

Table 6: One-way ANOVA of the differences in the means of motivation towards remote teaching as a function of academic year

Job Status	Frequency	Mean	SD	T-Value	Degree of Freedom	Sig.
I work	127	2.37	0.85	-1.231	148	0.220
I do not work	23	2.60	0.80			

5. Discussion and Conclusion

The results of the study suggest that special education students exhibited moderate levels of motivation towards remote learning. This is concerning as it implies that motivation levels were not high enough to positively impact student achievement, which is the ultimate goal of the educational process. This finding is not unique to this study, as other studies have also reported similar results. For instance, Berestova et al. (2022) found that online learning can be demotivating for students due to the lack of technology and inadequate support.

To address this issue, it is crucial to provide a dedicated and adaptable learning environment for users. This can be achieved by leveraging the resources available on the web, which are often free. However, the study also highlights the need to address the lack of capabilities among many students to participate in distance learning. This can be addressed through training programs for both students and teachers to help them adapt to the remote learning environment.

In conclusion, the study's findings emphasize the importance of addressing the issue of motivation among special education students towards remote learning. The results highlight the need for a dedicated and adaptable learning environment, as well as training programs for students and teachers to facilitate effective participation in the distance learning process. By addressing these issues, educators can help to improve motivation levels among special education students, ultimately leading to better academic outcomes.

The study examined whether there were any differences in the degree of motivation towards remote teaching among special education students based on their gender. The findings indicated that there were no significant differences in the means of motivation towards learning based on gender.

The finding of the study suggests that male and female special education students have a comparable level of motivation towards remote teaching. This result aligns with previous research, which

suggests that gender differences may not have a significant impact on student motivation and performance in comparison to traditional face-to-face learning (Girard, Yerby, and Floyd, 2016). However, other studies indicate that females tend to be more actively engaged in online learning and have higher motivation towards it than male students (Chyung, 2007; Yukselturk and Bulut, 2009).

However, it is important to note that this study only focused on a specific population of special education students in a private university in the UAE. Therefore, the generalizability of these findings to other contexts may be limited.

Moreover, it is possible that the study did not touch upon all possible factors that could impact student motivation towards remote teaching. For instance, individual differences in personality, learning styles, and prior experiences with remote learning could also play a role in shaping students' motivation towards learning.

The study's objective was also to explore if special education students exhibited different levels of motivation towards remote teaching based on their academic year. The study found no significant differences in the degree of motivation towards remote teaching among special education students as a function of academic year. Therefore, whether in their first or last year of study, special education students demonstrated similar levels of motivation towards remote teaching. This result is in line with earlier research that has demonstrated that academic year does not significantly impact student motivation towards learning. (Bulić & Blažević, 2020).

Moreover, this study aimed to examine whether there were any differences in the degree of motivation towards remote teaching among special education students based on their job status. The results indicated that there were no significant differences in the means of motivation towards remote teaching as a function of job status. This suggests that regardless of their employment status, special education students exhibited a similar level of motivation towards remote teaching. This result is consistent with previous research which has indicated that job status does not significantly impact student motivation towards learning. Despite the literature supporting the idea that e-learning can improve overall motivation to learn (Elfaki, Abdulraheem, & Abdulrahim, 2019; Makhambetova, Zhiyenbayeva, & Ergesheva, 2021) , and that motivation for studying via the Internet may be greater than with traditional classroom methods, such as whiteboards and projectors (Hoerunnisa, Suryani, & Efendi, 2019), the findings of this study do not support these claims.

6. Limitations

Several limitations may have influenced the results obtained in the study, including the challenge of accurately determining the level of student motivation. Another limitation is the relatively small sample size, consisting only of students from one university in one country, which may limit the generalizability of the findings to other universities in different countries. These limitations are critical to consider when interpreting the results and in identifying future research directions. In addition, the sample of the study being only special education preservice teachers could be the reason of such results, as the special education field is a more hands on field rather than relying heavily on theoretical aspects. The study of students from other fields of education could have made a faire comparison of the issues faced b special education students in an online mode of instruction.

7. Conclusions

In the realm of e-learning, poor motivation is a pressing issue that warrants increased attention from the academic community. Addressing this issue requires a deliberate selection of educational materials and the organization of high-quality video conferences on platforms like Zoom or MS Teams. Moreover, self-discipline plays a crucial role in mastering the material beyond the confines of scheduled classes. While e-learning offers both positive and negative aspects, and various factors can affect motivation, the authors of this article conclude that it cannot fully replace traditional forms of education. Nevertheless, with appropriate preparation and readiness, e-learning can contribute to ensuring a high standard of education for students and should thus be embraced as a standard tool in higher education. The significance of this research lies in providing a starting point for institutions seeking to enhance student engagement in e-learning while mitigating determinants that impede motivation. Future research should explore the motivational factors of students from different countries and fields of study, as well as examine how motivation varies across different specialties.

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