Cross-cultural impacts of COVID-19 on higher education learning and teaching practices in Spain, Oman, Nigeria and Cambodia: A cross-cultural study

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Adapting new learning and teaching practices during COVID-19 pandemic has impacted students' learning in higher education. Using a cross-sectional research methodology, the study attempted to understand the cross-cultural impacts of COVID-19 on higher education students in Cambodia, Nigeria, Oman and Spain to determine the changes that COVID-19 has brought about in higher education students; examine how students' learning behaviour and attitudes have changed during COVID-19; identify the challenges they have experienced; and identify the changes that have taken place in learning and teaching in the selected countries. A total sample of 242 students was randomly selected from four higher education institutions in each of the selected countries. The study provided a cross-cultural understanding of how COVID-19 has affected students' well-being, behaviors and learning. The results show that COVID-19 had adverse effects on the well-being of students in the four countries. Students received inadequate social support and security protection from others and instructors when they needed it. Omani students received less social support compared with the other three countries. COVID-19 had the worse effect on students' employment in the four countries. The effect pressed much concern on Nigerian students who experience a great job loss. Students from the four countries were required to put a lot of effort and energy to fulfil the requirements in the program.

Practitioner Notes

1. COVID-19 has had a significant effect on student wellbeing, behaviour, and learning.
2. Across Spain, Oman, Nigeria, and Cambodia student wellbeing has declined during the pandemic.
3. Omani students were perceived to receive less social support compared to Spain, Nigeria, and Cambodia.
4. Nigerian students felt the greatest job insecurity.
5. Students applied greater energy into their studies than in pre-pandemic contexts.

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Keywords

COVID-19, Cross-cultural investigation, higher education, learning and teaching practices, students' behaviours and attitudes.

Introduction

A new coronavirus emerged in December 2019 in Wuhan, China, and has since spread rapidly throughout the world causing a major impact on society (Cifuentes-Faura, 2021). As of April 1, 2021, there were more than 129 million infected and more than 2.8 million deaths worldwide. COVID-19 has affected education, leading to many changes for both teachers and students (Dhawan, 2020). Although higher education institutions' responses differed, the majority of institutions have opted for emergency remote teaching (Crawford et al., 2020; Hodges et al., 2020), using the available online platforms (Mishra et al., 2020; Kaup et al., 2020).

Teachers had to adapt their classes to online modality and use new technologies (Tandon, 2020; Tartavulea et al., 2020; Yao et al., 2020) although few possessed the necessary skills in handling online teaching (Van der Spoel et al., 2020). Teachers in higher education had to adapt the curriculum and their instructional strategies (König et al., 2020). Teachers also had to modify the way in which final examinations were administered, with the aim of covering all the content taught and to prevent fraud when the test was taken remotely (Bernardo, 2020). Prior to the pandemic, universities committed to including sustainability in curriculum and sustainable teaching practices (Matilde-Lafuente et al., 2020, Cifuentes-Faura et al., 2020), the importance of transmitting the Sustainable Development Goals may have been put on the back-burner during this pandemic, giving priority to keep education undisrupted. Students had to redistribute their time and study in a different way (Adnan & Anwar, 2020) and this new modality generated confusion for students.

Given the situation caused by COVID-19 in education and the confusion that has arisen, it is important to analyse the changes that have occurred in the educational systems and higher education institutions to understand how students have coped during the pandemic. This paper attempted to understand the cross-cultural impact of COVID-19 on students in higher education in Spain, Nigeria, Oman and Cambodia. The choice of these countries is due to the fact that it is an extreme comparison, four very different countries from different regions (Shelley et al., 2019). Comparing the impact of COVID-19 on these countries can inform and assist higher education institutions globally in responding to these crises and future emergencies. This study is guided by the following research questions:

 What is the impact of COVID-19 on higher education students' well-being, classroom adaptation, perceived social support, emotions, self-efficacy and job turnover in Nigeria, Spain, Oman and Cambodia?

1. How has COVID-19's impact on higher education students' well-being, classroom adaptation, perceived social support, emotions, self-efficacy and job turnover differed in the four countries?

Students' learning in higher education: Influential factors

Many factors can contribute to students' learning and success in higher education, such as well-being, engagement and belonging, motivation and self-efficacy. Students' well-being is associated with learning achievement. Several researches has shed light on students' mental health and well-being during COVID-19 to propose some preventive measures and recommendations for higher education (Kecojevic et al., 2020; Lyons et al., 2020; Savage et al., 2020). In their attempt to explore the impact of COVID-19 on undergraduate medical students, Abdulghani et al.'s (2020) cross-sectional study found that COVID-19 led to increased stress levels and changes in learning attitudes and strategies of medical students. Along higher stress levels, COVID-19 had a negative influence on students' social connectedness in Australian

medical students (Lyons et al., 2020). Similarly, the government imposed lockdown during COVID-19 reduced university students' well-being and increased their stress levels in the UK (Savage et al., 2020). COVID-19 led to higher anxiety levels and depression among college students in the USA which resulted in students being unable to focus on their academic work (Kecojevic et al., 2020).

Also, COVID-19 influenced students' engagement in learning. Students' engagement deals with students' involvement in the learning process by meeting three psychological traits to achieve higher levels of motivation and performance: autonomy, competence and relatedness (Deci & Rayan, 2000). Students' reduced engagement in online teaching and learning during COVID-19 resulted from the sudden unplanned shift to online delivery (Hill & Fitzgerald, 2020; Cifuentes-Faura, 2020a; Alghamdi, 2021) and from students taking multiple roles, such as assisting their peers and learning to cope in a new situation (Cifuentes-Faura, 2020b; Klasen et al., 2021).

For reducing stress levels, Abdulghani et al. (2020) found that students used different coping strategies, such as exercise, watching films, playing computer games, sitting with family members, practicing religious meditation activities and learning and searching online for ways to live in COVID-19 situations. Likewise, Lyons et al. (2020) claimed that using video chats, social media, exercise and hobbies can lessen the impact of coronavirus on students' mental well-being. In an attempt to help students cope with COVID-19 impacts on well-being and psychological distress, Hood et al. (2021) designed a psycho-educational happiness course, which was found to be an effective intervention for students during COVID-19.

In order to foster better students' engagement in the learning process during COVID-19, teachers teaching in online contexts should develop students' autonomy, ensure learning and involve all students (Hartnett, 2015). Hill and Fitzgerald (2020) emphasized the need to create meaningful and contextualised activities to promote interaction between the students, the teacher and the course. For instance, they suggested the use of breakout rooms during virtual online meetings and the use of PowerPoint with voice-over. For engaging students in online learning environments, Hill and Fitzgerald (2020) suggested the use of different strategies, such as flipped classroom approach, peer teaching, interactive gaming, virtual polling, brainstorming and screen sharing.

Overall, research called for an urgent need for higher educational institutions to draft policies and interventions to support students' well-being during emergencies, provide mechanisms for social support and emotional resilience, train and provide academic support staff and counsellors, plan a preparedness plan for students' well-being with changes to curriculum and assessments (Abdulghani et al., 2020; Kecojevic et al., 2020; Lyons et al., 2020; Savage et al., 2020). Christopher et al. (2020) suggested adapting the curriculum to ensure caring presence during remote learning.

Spain, Nigeria, Oman and Cambodia: An educational background

Spain

The Spanish Government decreed a state of alarm on March 14, 2020 to halt the spread of the coronavirus. This decree made it compulsory to carry out home confinement, face-to-face classes were suspended and consequently online teaching was introduced. During the 2020-2021 academic year, and in view of the new waves of coronavirus, most Spanish universities have opted for a blended learning system, where online and face-to-face classes alternate. The aim is to reduce the number of students per classroom, and for this reason, the days of face-to-face classes are alternated.

During the pandemic, the online mode generated confusion among students. The online environment was normally for asynchronous learning and when all learning was online they didn't know how to access curriculum and teaching in real time. Assessment was also adapted to the online mode, with exams being taken virtually. To avoid further confusion for students, in Spain, the Spanish Network of University Quality Assurance Agencies (REACU) reported that new changes in content and new assessment criteria should be made public well in advance (REACU, 2020) and be included in the teaching guides of the subjects.

The university education system in Spain is governed by the Bologna Declaration (Neave, 2003; Marquand, & Scott, 2018). The Ministers of Education of 29 European countries signed the Bologna Declaration in 1999 to jointly develop the European Higher Education Area (EHEA) (Alonso-Sáez & Arandia-Loroño, 2017). This Declaration implies developing a teaching methodology in which not only knowledge is transmitted to students, but also skills and attitudes (Wächter, 2004). This new system seeks active and continuous learning of students, organising competencies around it (D'Ascanio, 2017). The integration into the EHEA meant a major change in the culture of Spanish universities (Palma Muñoz, 2019), and the appearance of the coronavirus may have seriously altered its development. Public and private universities have adapted rapidly to the consequences of the coronavirus. The technological advances of many of them have been instrumental in the development of teaching. Furthermore, the importance of sustainability in Spanish universities is growing (Lafuente-Lechuga et al., 2020).

Oman

To prevent the spread of COVID-19, the Omani government announced the closure of schools and universities on 14th of March, 2020 (Oman suspends schools, universities from Sunday, 2020). Consequently, higher education institutions shifted to emergency remote teaching using the available resources. While most institutions opted for online distance education, a few institutions followed blended learning modes to allow students on campus for practical courses and field projects (Abushammala & Manchiryal, 2021; Osman, 2020).

The establishment of Sultan Qaboos University, consisting of nine colleges and nine research centers, in 1986 is regarded as the official embark of higher education in Oman (Carroll et al., 2009; Al-Issa et al., 2012). Last year, a royal decree was issued to establish the University of Technology and Applied Sciences which encompass 14 old public institutions in Oman (seven colleges of technology, six colleges of applied sciences and college of education) (Ministry of Higher Education, Research and Innovation, 2020). Higher education institutions include government and private institutions (Ministry of Higher Education, Research and Innovation, 2020). Allowing local private institutions to offer foreign programmes in affiliation with international universities that resulted in more than 200 degree programmes sourced by different international universities (Carroll et al., 2009).

The National Strategy for Education 2040 (Educational Council, 2018) is an essential source for the development of policies for reforming the educational sector in Oman. The strategy stresses the importance of providing educational opportunities for attaining self-growth, interacting with the world and building social and economic transformations (Educational Council, 2018). Since the Omani higher educational system had already introduced e-learning platforms for teachers and students to go online (Al-Musawi, 2010), the shift to online learning during COVID-19 was to a good extent easy for teachers and students.

Nigeria

Universities, polytechnics, institutions of technology, and colleges of education make up Nigeria's higher education system (Afolayan, 2015). Nigeria has 190 accredited universities, 112 polytechnics, and 152 educational colleges (National Universities Commission, NUC

2020). By 2020, there were 2 million students enrolled (Olufemi, 2020). In the Nigerian university system, face-to-face teaching and learning methodologies have been used to achieve the goals of higher education until the COVID-19 pandemic began. Until now, only the distance education program offered by some Nigerian universities had some online teaching.

According to Eze et al. (2018), the conventional educational structure expected students to be on campus and to attend classes, tests, workshops, and other academic assignments in physical classrooms. According to Ifijeh et al. (2015), only a few Nigerian universities have e-learning platforms that allow for the upload and download of lecture notes, as well as the submission and grading of student assignments. The Nigerian government's initial response to reduce the spread of the virus was to close all campuses, including universities, as of March 2020, and switch to online mode of teaching. As a result of the COVID-19 pandemic, universities across Africa, including those in Nigeria, are moving largely to online or electronic teaching and learning, according to University World News (2020), though most of these initiatives are still in the early stages of implementation.

COVID-19 has thrown a twist in Nigeria's educational environment, restricting students' access to education across the world. While many private schools have begun to implement distance learning initiatives, taking advantage of the vast array of ICT-learning opportunities, the government has not announced any official plans for providing distance learning opportunities, especially for public schools, due to a lack of funds and persistent planning deficiencies (Ogunode et al., 2020). The assumption is that these students in public schools do not have structured learning plans and could be losing out on opportunities to learn. The long-term consequences of these school closures will exacerbate educational disparities (Ogunode et al., 2020).

According to the Digital 2020 Global Overview Study, approximately 60% of Nigerians are not connected to the Internet (Adeoye et al., 2020). The COVID-19 pandemic has a significant impact on learners, especially those in developing and underdeveloped countries who have not been adequately prepared or who have recently moved to online learning and have limited awareness of the new learning process (Obiakor & Adeniran, 2020).

Cambodia

Cambodian higher education or tertiary education is the post-secondary education (3rd level) under the Ministry of Education, Youth and Sport (MoEYS). Before 1997, higher education was not the priority of the government (Un & Sok, 2018). As a result of education reform and a privatisation initiative which allowed the private sector to invest in education, higher education has rapidly expanded from eight higher education institutions (HEIs), all of which were public HEIs in 1997 (Un & Sok, 2018), to 70 in 2009, 110 in 2014, and 125 in 2018, of which 48 are public HEIs and 77 are private HEIs. The enrolment in tertiary education increased from nearly 10,000 in the early 1990s (MoEYS, 2014) to 211,484 in 2014 and 249,092 in 2018. Higher education has been envisioned to provide necessary skills to learners to improve their living standards to contribute to national development and economic growth as the country commits to transform from a lower-middle-income country to an upper-middle income country by 2030 and a developed country by 2050 (MoEYS, 2019). In Education 2030 Roadmap, the MoEYS targets gross enrollment rate of tertiary education at 16.9% in 2023, 22.7% in 2028, and 25.0% in 2030 (Un & Sok, 2018)

The Cambodian government took significant actions and measures to respond to the COVID-19 pandemic. On March 13, 2020 it urgently announced school closure to prevent the spread of the virus in the community (MoEYS, 2020). Some universities quickly adapted blended learning methods while other HIEs took weeks to switch to online learning for the remaining weeks of the term/semester. As of June 2020, MoEYS announced to all higher education institutions to

continue online learning in the new term (MoEYS, 2020). The ministry issues e-learning guidelines that set out principles, measures, and necessary steps for e-learning for educational institutions. HEIs were required to develop internal guidelines and procedures for e-learning before they start e-learning teaching and learning. Once certified, HEIs could officially run the course online. COVID-19 pandemic has had adverse impacts on the education system. As of July 2020, it affected 26 Teacher Education Institutions and 124 HEIs, 720 teacher trainers, 16,525 educational personnel, 5,248 teacher trainees, and 222,879 students of higher education and non-formal education in Cambodia (MoEYS, 2020).

Method

Research instrument

A survey was used to find out how COVID-19 has affected students in higher education institutions. The survey consisted of two main sections: demographic information and seven Likert-scale sections. The demographic section included 11 items. The second part of the survey sought participants' attitudes towards teaching and learning during COVID-19. It included 50 items, divided into seven dimensions: Classroom adaptation, engagement and belonging, perceived social support, well-being, job turnover, classroom emotions and motivation and self-efficacy. The participants marked their responses to the main sections on a 7-item Likert scale ranging from strongly agree to strongly disagree, with one section marked on a 6-item Likert scale ranging from at no time to all of the time. The reliability coefficient of the seven dimensions ranged between 0.82 and 0.90, as measured by Cronhach's Alpha.

Research design

The study used a cross-sectional survey design. The survey items were adapted from previous studies on students' classroom adaptation (Schaufeli et al., 2006), engagement and belonging (Anderson-Butcher & Conroy, 2002), perceived social support (Kliem et al., 2005), well-being (WHO Collaborating Center for Mental Health, 1998), job turnover (Sjöberg & Sverke, 2000), classroom emotions and motivations (Titsworth et al., 2010) and self-efficacy (Usher & Pajares, 2008).

Research sample

A total sample of 242 students responded to the survey from different higher education institutions from the four countries. Slightly higher responses were from Oman (84, 34.7%) compared to the other countries with Nigeria being least represented in the sample (24, 9.9%). Female students composed 63.6% (N= 154) of the sample, whereas male students composed 36.4% (N= 88). The participants' age ranged from 18 years to 38 years and above. Almost half of the participants have been students in higher education for three to four years. Most of the participants (222, 91.7%) were domestic students. The majority of the students in the sample (201, 83.1%) studied fully online during COVID-19 and they had on campus courses prior to COVID-19, compared to smaller numbers of students who partially studied on campus (34, 14%) and who had no courses (7, 2.9%) during COVID-19. With regard to employability, more than half of the sample did not have jobs during COVID-19.

Results

Simple descriptive statistics (frequencies, means and standard deviations) and a one-way analysis of variance (ANOVA) were computed to analyze the data and compare the differences of students' attitudes between the four countries with regard to classroom adaptation, well-being, perceived social support, emotions, self-efficacy and job turnout. This section presents

the results and it is divided into seven parts based on the survey dimensions: *classroom adaptation, engagement and belonging, perceived social support, well-being, job turnover, classroom emotions and motivation and self-efficacy.*

Classroom adaptation

The result revealed that students were able to adapt to their classes during COVID-19 (M= 4.95, SD=1.19), with Omani students feeling slightly uncomfortable adapting to the new learning situation (M= 4.76, SD=1.36). A one-way analysis of variance (ANOVA) indicated that there is no statistical difference between the four countries in terms of students' being able to adapt to the new teaching and learning settings caused by COVID-19 [F (3, 238) = 1.821, p=.014)] (see Table 1). In other words, students in the four countries were able to adapt to a good extent with the new teaching and learning scenarios.

Engagement and belonging

With respect to students' engagement and belonging to their programmes during COVID-19, students felt slightly engaged and belonged to their programmes (M= 5.25, SD= 1.03). Using a one-way analysis of variance (ANOVA) (see Table 1), there were no statistical differences in classroom adaptation between the four countries [F (3, 238) = 1.245, p=0.294)].

Table 1

One-way analysis of variance of classroom adaptation and students' engagement and belonging

	Sum of squares	df	Mean Square	F	Sig.
Classroom adaptation					
Between groups	7.779	3	2.593	1.821	0.144
Within groups	338.897	238	1.424		
Total	346.676	241			
Engagement and belonging					
Between groups	4.002	3	1.334	1.245	0.294
Within groups	254.995	238	1.071		
Total	258.998	241			

Perceived social support

The results revealed that students slightly agreed to perceived social support statements (M= 5.20, SD= 1.09). This indicated students somehow received underrating and security from others during COVID-19, and they could rely on others to help them when needed. A one-way analysis of variance (ANOVA) exploring the differences between the four countries (see Table 2), indicated a statistically significant difference at the p < .05 level with regard to perceived social support for the four countries [F (3, 238) = 5.388, p=0.001.]

To identify the differences between the four countries, a post-hoc multiple comparison revealed that the mean score for Oman (M= 4.90, SD= 1.21) was statistically different from Nigeria (M= 5.64, SD= 0.91) and Spain (M= 5.24, SD= 0.99). Overall, Omani students received slightly lower social support during COVID-19 compared to Nigeria, Spain, and Cambodia, respectively.

Student well-being

The descriptive statistics showed that students' well-being was negatively affected by COVID-19 across the four countries (M= 3.93, SD= 1.01), with a slightly more negative impact in Oman (M= 3.80, SD= 1.14) and Cambodia (M= 3.84, SD= 0.90). Across the four countries, the majority of students felt active, cheerful, relaxed and in good spirits less than half of the time in their studies during COVID-19. A one-way ANOVA (see Table 2) indicated no statistical significant differences at the $p < 0.05$ between the four countries [$F (3, 238) = 1.885$, $p=.113$]. In general, students' well-being was not very satisfactory in the four countries.

Table 2

One-way analysis of variance of perceived social support and students' well-being

Variables	Sum of squares	df	Mean Square	F	Sig.
Perceived social support					
Between groups	18.112	3	6.037	5.388	0.001
Within groups	266.679	238	1.121		
Total	284.791	241			
Well-being					
Between groups	5.749	3	1.916	1.885	0.133
Within groups	242.011	238	1.017		
Total	247.760	241			

Classroom emotions

Items in classroom emotions were divided into three sub-categories: instructor's support, positive emotions towards instructor and programme, and energy required for the instructor and programme. In general, students agreed that they received sufficient support from their instructors during COVID-19 (M= 4.22, SD= 1.38). In addition, students demonstrated positive emotions towards their programmes and instructors (M=4.97, SD= 1.27). A one-way analysis of variance (ANOVA) revealed no statistical differences between the countries with regard to instructor's support [$F (3, 238) = 2.670$, $p= 0.048$]. In addition, the test revealed no statistical differences in the means of items related to the positive emotions towards the instructor and the programme [$F (3, 238) = 1.286$, $p=0.280$]. However, the test indicated statistical differences between the four countries regarding energy required for the instructor and the programme [$F (3, 238) = 3.211$, $p=0.024$]. The results showed that students in Oman needed to exert more energy towards their programmes and instructors.

Table 3

One-way analysis of variance of students' emotions

		Sum of squares	df	Mean Square	F	Sig.
Instructor's support	Between groups	14.960	3	4.987	2.670	0.048
	Within groups	444.576	238	1.868		
	Total	**459.537**	**241**			
Positive emotions towards instructor/ programme	Between groups	6.186	3	2.062	1.286	0.280
	Within groups	381.665	238	1.604		
	Total	**387.851**	**241**			
Energy required for the instructor/ programme	Between groups	10.233	3	3.411	3.211	0.024
	Within groups	252.817	238	1.062		
	Total	**263.050**	**241**			

Self-efficacy

Students' self- efficacy during COVID-19 was slightly high with minor variations across the four countries (*M*= 5.23, *SD*= 1.10). The one-way analysis of variance (ANOVA) for self-efficacy indicated no statistical differences between the four countries [*F* (3, 238) = 0.645, *p*=0.587].

Job turnover

Based on the descriptive analysis of items related to employability, COVID-19 had a minor impact on students' job turnover. Having more than half of the students represented in the sample (76%) without jobs during COVID-19 explained this low impact. A one-way ANOVA explored the differences in job turnover between the four countries (see Table 4). The results indicated a statistically significant difference at the *p* < .05 level between the four countries [*F* (3, 238) = 3.528, *p*=.016]. The post-hoc multiple comparisons test revealed that Nigeria had more job turnover impact (*M*= 3.14, *SD*= 1.95) compared to Spain, Oman and Cambodia.

Table 4

One-way analysis of variance of self-efficacy and job turnover

Variables	Sum of squares	df	Mean Square	F	Sig.
Self-efficacy					
Between groups	2.357	3	0.786	0.645	0.587
Within groups	290.045	238	1.219		
Total	**292.402**	**241**			
Job turnover					
Between groups	24.563	3	8.188	3.528	0.016
Within groups	552.350	238	2.321		
Total	**576.913**	**241**			

Discussion

The study found that students of the four countries could adapt to the sudden change in the format of teaching and learning during COVID-19. Adaptability is characterized as the ability to constructively change one's cognition, affect, and actions because of individual differences in how one reacts to changing, unfamiliar, and uncertain conditions (Martin et al., 2012). Students of the four countries, even if Omani students felt less comfortable, could adapt to the changes from traditional to digital teaching and learning. Students show their commitment to retain their continuous learning in the adoption of digital resources for learning (Eickelmann & Gerick, 2020). However, the students felt less engaged and belonged to their programmes during COVID-19. Student engagement is a three-dimensional framework that includes behavioral, affective, and cognitive components and serves as the foundation for students' connectedness to learning (Fredricks & McColskey, 2012). Students' engagement is an obstacle when universities moved to online in response to COVID-19 (Nickerson & Shea, 2020; Farooq et al., 2020). Students experience physical isolation from the class because they could not have interaction in person. Students have no physical connection with their friends and teachers and may have lower levels of engagement. Cavanaugh et al. (2004) indicated that remote instruction is as efficient as traditional classroom instruction (Cavanaugh et al., 2004), however, it raises questions about the long-term effects of remote-only instruction on students' growth (Morgan, 2015). The result of this study somewhat contradicts with Cavanaugh et al.'s (2004) findings because the degree of engagement could not be comparable to that encountered in conventional classrooms.

The absence of physical contact could lead students to experience loneliness and a sense of isolation. Social support is crucial to minimize mental and physical distress (McKinney, 2019), and a lack of social support during the pandemic increased the risk of mental health problems. The study found that with statistically significant difference, higher education students of the four countries received less social support during COVID-19. Students in Oman received marginally less social support from peers, relatives, and their institutions. This can affect the level of engagement if it remains unsolved. Brooks et al. (2020) proposed that people maintain social connections during the COVID-19 to alleviate isolation, worry, and anxiety. Social support should be provided through training academic support staff and counselors to assist students. Schools and instructors should use a variety of teaching methods and resources, such as video chats, social media, exercise, and hobbies (Lyons et al., 2020).

COVID-19 has negative influences on students' well-being. The results indicated that students in Cambodia and Oman had slightly more negative impact than students in Nigeria and Spain. During COVID-19 students have less time to be cheerful, in good spirits, well-rested, relaxed, and calm. The pandemic causes the absence of physical classrooms and physical contact with their companions for long periods. According to Zhai and Du (2020), students are more likely to experience high levels of anxiety and isolation because of the lack of physical contact between lecturers and students, as well as student interactions among themselves (Zhai & Du, 2020). This finding informs HEIs to diversify teaching methods to enable students to interact with their peers and lecturers in remote teaching. Regarding classroom emotion and motivation during the COVID-19 pandemic, students received sufficient supports from instructors, and they demonstrate positive emotions towards instructors and the programmes. However, students from the four countries were required to put a lot of effort and energy to fulfil the requirements in the programmes. Omani students required extra support. The students of the four countries show their positive attitude toward the changing nature of learning during COVID-19. Positive academic emotions could encourage student engagement, negative academic emotions can stifle it (Zhen et al., 2017). Students' persistence and efforts in learning can be boosted by positive academic emotion (Pekrun et al., 2002).

COVID-19 has much more effect on employment than other crises (OECD 2020). The results revealed that COVID-19 influenced students' employment in the four countries. Students in Nigeria had more job turnover than students in the other countries. Job loss could affect students' engagement in their programmes as it also affects students' livelihood and well-being.

Regarding self-efficacy, students were very optimistic about the programme during COVID-19. Students expressed their confidence in his or her ability to carry out the behaviors required to achieve results. The effectiveness of students during the pandemic indicates that there were small and major differences between the four countries. As a result, optimistic academic emotions will encourage students to become more involved in their studies (Reschly et al., 2008). Negative academic emotions can thus have a negative impact on students' academic results, further obstructing student participation (Putwain et al., 2013).

Limitations and future research

Although the sample of this study is representative, the study has only attempted to understand the impact of COVID-19 on students in higher education using one data collection instrument, an online survey. Triangulating data by interviewing students or asking them to reflect on their learning practices during COVID-19 might have provided deeper understandings of the research issues. Investigating teachers' strategies of addressing COVID-19 impact on students is beyond the scope of this study. Finally, the study is limited to investigating the impact of COVID-19 on six variables only.

As COVID-19 impact on higher education still exists, future research may consider whether COVID-19 impact on students' well-being, classroom adaptation, perceived social support, emotions and self-efficacy and job turnover differ with regard to students' gender, majors, social statues and income. Future research endeavors may investigate teachers and institutions innovative strategies on addressing issues related to these variables. Following a systematic review methodology to review innovative strategies in addressing COVID-19 impact on students' well-being, adaptation, social support and self-efficacy can inform higher education institutions to develop/enhance polices and support mechanisms for emergency remote teaching during COVID-19 and any similar future pandemics.

Conclusion

The study investigated the impact of COVID-19 on higher education students' well-being, classroom adaptation, perceived social support, emotions, self-efficacy and job turnover in Cambodia, Nigeria, Oman, and Spain. The study found that the majority of students from the four countries could adapt to the new learning environment imposed by COVID-19, showing a certain level of digital capacity to cope with the new conditions. Although students were able to cope, the results indicated that they were less engaged in their studies. Students received inadequate social support and security protection from others and instructors during COVID-19. In particular, Omani students received less social support compared with the other three countries. Students demonstrated positive emotions toward instructors and their programmes. However, students from the four countries were required to put much effort and energy to fulfil the requirements of their programmes. Additionally, students showed positive attitudes towards the changing nature of learning during COVID-19. Additionally, COVID-19 influenced students' employment in the four countries, with Nigeria being the most effected. Based on the results, higher education institutions should provide extra support mechanisms for their students during crises. They need to create or modify their teaching and learning policies to include some strategies in addressing students' well-being, engagement and self-efficacy during emergency remote teaching. Institutions should train teachers on how to address students' challenges during crises and how to deliver content online to maximize learning and students' engagement and

belonging. For better students' engagement, institutions can also update their curriculum and reduce programme requirements for online delivery.

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Declarations

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