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Introduction

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Dear Readers -

JCIHE is an open access, independent, double-blinded peer-reviewed international journal publishing original contributions to the field of comparative and international higher education. The JCIHE is the official journal of the Comparative and International Education Society (CIES) Higher Education Special Interest Group (HESIG). The mission of the journal is to serve as a place to share new thinking on analysis, theory, policy, and practice, and to encourage reflective and critical thinking on issues that influence comparative and international higher education. JCIHE showcases new and diverse international research that uses rigorous methodology that focuses on theory, policy, practice, critical analysis, and development analysis of issues that influence higher education. JCIHE has as its core principles: a) comparative research; b) engagement with theory; and c) diverse voices in terms of authorship. To focus on international voices, Vol 15, Issue 3 includes authors from: Australia; Canada; India; Malaysia; Myanmar; Turkey; United Arab Emirates (UAE).

I am pleased to share with our readers eight new empirical articles, one essay, and a book review for issue 4. Jessica Schueller reviews Melissa Whatley's *Introduction to Quantitative Analysis for International Educators.* In this issue, the articles and essays share three main themes that provide new contexts for the field of comparative and international higher education: Student Learning Strategies; Faculty Learning Strategies; and Institutional and Pedagogical Contexts.

Student Learning Strategies

Three articles examine issues related to student learning. Merlin Joseph and N.T. Sudhesh find that the academic lifestyle of international students in India and academic motivation are significant predictors of student learning and of their academic success. Ajay K. Garg, Raymundo C. Rosada, Jr. and Jay Ariken examine the lived experiences of international students during the COVID-19 in Vancouver BC, Canada and find that student understanding of COVID-19 risks were strong but their financial health and well-being levels differed among the student population. The latter influenced their overall learning abilities. Thinh Huynh and Ly Thi Tran examine the impact of digitalization on the teaching and learning of international students in HEIs in Australia during COVID-19 as well as the challenges they experienced. Cherry Kyaw San and Khin Mar Htw find that short-term study abroad for undergraduate students has a noted impact on their intercultural development in terms of changes in attitudes, knowledge and comprehension, skills,

desired internal outcomes, and desired external outcomes, with an emerging aspect 'recommendation' based on 'cultural reflection'. Yidan Zhu, Yun Xia, Yan Yu, and Yufei He detail the student experience as participants in a COIL class in China.

Faculty Learning Strategies

Four articles examine issues related to faculty learning. Mahmut Ayaz, Bilge Gök, and Salih Gülen, examine the role of the electronic portfolio as a faculty learning tool. The electronic portfolio is used to define self-efficacy beliefs and academic achievement levels of pre-service elementary teachers studying in Universities in Turkey. David Dalton, Hassan Khalifa, Sami Mejri and Amani Omer showed how the emergency response to COVID-19 in teaching and learning forced faculty in the UAE to think of innovative ways to engage invisible learners which, in turn, was physically and emotionally draining on the faculty. Yidan Zhu, Yun Xia, Yan Yu, and Yufei He detail the faculty experience as teachers and participants in a COIL class in China. Finally, Sanfeng Miao identifies patterns of gender inequality in Chinese higher education.

Institutional and Pedagogical Contexts

One article examines institutional and/or pedagogical contexts within higher educational institutions. Muhammad Muftahu explores governance in Commonwealth of Asia higher educational institutions (HEIs) to use good practices in the management of other HEIs within Commonwealth nations of Malaysia, Singapore, and India.

Articles

Merlin Joseph, Christ (Deemed to be University, Banglore, India) **and N.T. Sudhesh** (Deemed to be University, Banglore, India). *Academic Stress, Social Support, and Adjustment Among International Students in India*

This article examines the relationships between academic stress, academic lifestyle, academic achievement, and social support, using a correlation, quantitative approach to understand these relationships. International students from various colleges and universities across India participated in the study. Analysis revealed significant relationships between these contexts and adjustment was categorized into academic lifestyle, academic achievement, and academic motivation. Multiple regression analysis showed academic lifestyle as a significant predictor of perceived academic stress. Academic motivation was directly proportional to an increase in academic stress ($p<0.05$). Findings also found a significant difference in students' academic motivation based on gender. The findings of this study call for adopting a holistic approach to reduce international students' academic stress and adjustment concerns. Recommendations to institutions are made based on the findings.

Mahmut Ayaz, Ministry of National Education, Turkey, **Bilge Gök,** Hacettepe University, Turkey, and **Salih Gülen,** Muş Alparslan University, Turkey. *The Effect of Electronic Portfolio Use on Pre-Service Elementary Teachers' Academic Achievement Levels and Self-Efficacy Beliefs Regarding the Teaching Process*

This article examines the level in which technology is used in the education of teacher candidates in higher education in Turkey. In the quasi-experiment, it is hypothesized that technology is important in the education of these students because technology affects the cognitive development of teacher candidates. One method is seen as the most useful, the electronic portfolio. A mixed method approach involving 61 participants lasted for 14 weeks with volunteer pre-services teachers. Through parametric test techniques, descriptive and content analysis, findings from this study showed that the use of e-portfolio positively affected the self-efficacy beliefs and academic achievement levels of pre-service elementary teachers. In addition, a linear relationship was found between self-efficacy beliefs and their academic achievement. The findings showed the importance of having infrastructure and technological competencies for teacher candidates.

David Dalton Khalifa University of Science and Technology, United Arab Emirates, **Asli Hassan** Khalifa University of Science and Technology, United Arab Emirates. **Sami Mejri** Khalifa University of Science and Technology,

United Arab Emirates, and **Amani Omer,** Woxsen University, India. *Capturing the Personal and Pedagogical Experiences of Faculty During Emergency Response Teaching at a Research University in Abu Dhabi*

This article examines the teaching experiences and emotional well-being of faculty at a research university in the United Arab Emirates. The study took place during COVID-19 and thus examined the implications of emergency response teaching on instruction and learning. 400 faculty answered a questionnaire and 26 faculty were interviewed. Results showed evidence of a range of pandemic-related, negative impacts in terms of feeling challenged and frustrated. Faculty were forced to think of newer and more innovative ways to engage invisible learners which was physically and emotionally draining. Preemptive approaches in pedagogy were suggested for future emergency situations.

Muhammad Muftahu, National Higher Education Research Institute, Universiti Sains Malaysia. *The Governance and Management of Higher Education in the Commonwealth of Asia: Sharing the Asian Experience for the Common Good in the Commonwealth of Africa*

This article critically explores governance in higher education systems in the Commonwealth of Asia to examine how good practices can be applied to the management of higher education in Commonwealth nations, especially in the Commonwealth of Africa. Systematic secondary research was conducted through a keyword search strategy. Using the gathered data, discussions were made on the various governance and management aspects in three Commonwealth Asian countries namely Malaysia, Singapore, and India. In each case study, focus was placed on university autonomy, quality assurance, university-based research development, funding, institutional differentiation, and governance reforms proved salient for discussion. The article shares good practices for the common good and generates a contextual application of higher education governance practices between the Commonwealth of Asia and the Commonwealth of Africa.

Thinh Huynh School of Education and REDI, Deakin University, Australia, and **Ly Thi Tran** School of Education and REDI, Deakin University, Australia, *Digitalization of the Teaching and Learning for International Students in Higher Education: A Systematic Review*

This article examines digitalization in the international higher education sector during COVID-19 pandemic and how it was underlined by migration to online delivery across different educational contexts. The article examines systematically articles on the impacts of digitalization on the teaching and learning of international students in higher education. Each article underwent a four-step refined process: initial search, filtering, screening, and in-depth review. Thirty-five identified articles examined 1) the main forms of digitalization of teaching and learning for international students, 2) the digitalization-related experience of international students in learning, 3) the opportunities of digitalization of teaching and learning for international students and 4) the challenges of digitalization of the teaching and learning for international students.

Cherry Kyaw San University of Mandalay, Myanmar **Khin MarHtw** Yadanabon University, Myanmar. *Exploring the Impact of Study Abroad on Students' Intercultural Competence: The Case of Myanmar*

This article examines the impact of short-term study abroad programs on the development of Myanmar undergraduate students' intercultural competence. Focus was on how programs influence student attitudes toward the native culture, the host culture and cultural differences, and their intercultural interaction. The main findings show that short-term study abroad enhances students' intercultural development in terms of attitudes, knowledge and comprehension, skills, desired internal outcomes, and desired external outcomes, with an emerging aspect 'recommendation' based on 'cultural reflection'.

Yidan Zhu Department of Counseling, Leadership, Adult Education, & School Psychology (CLAS), Texas State University, San Marcos, USA, **Yun Xia**, College of Liberal Arts, Shanghai University, Shanghai, China, **Yan Yu,** College of Liberal Arts, Shanghai University, Shanghai, China, **Yufei He** College of Liberal Arts, Shanghai University, Shanghai, China. *Crossing Boundaries through Collaborative Online International Learning (COIL) during Covid-19: A Participatory Case Study in China*

This article describes participatory case study of a COIL program in a Shanghai University class. The article explores how students, foreign professors, and professors in China prepare, understand, and experience online

teaching, learning, and assessment in a COIL program. Findings show the issues in organizing COIL programs, enhancing teaching, and learning through intercultural communication; and barriers that arise. Using an insiders' perspectives, the authors argue that a cultural gap regarding teaching and learning styles can affect COIL programs in Chinese universities, posing challenges for both students and teachers.

Ajay K. Garg, School of Public and Global Affairs, Fairleigh Dickinson University Vancouver, BC, **Canada Raymundo C. Rosada, Jr.** School of Public and Global Affairs, Fairleigh Dickinson University Vancouver, BC, Canada and **Jay Ariken** Institute of Technology Development, Canada.

This article examines the lived experiences of international students during the COVID-19 pandemic in Vancouver BC, Canada. The research shows how international students viewed the COVID-19 pandemic, their personal, social, economic, health and hygiene, and schooling experiences. A questionnaire was given to the students and weighted means and Fisher's Exact Hypothesis Testing on Association were used to analyze the responses. Findings show that international students had a solid grasp of the potential risks COVID-19 posed and accepted the associated lockdown requirements. Students' nationality played a vital role in their perception of their financial health and well-being. Students were insecure with their accommodation, expenses, and scheduling. Lastly, they also felt alone, and economically challenged.

Essay

Sanfeng Miao, Michigan State University, USA. *Gender Disparity in Chinese Academia: A Conceptual Analysis Through Organizational Theory Lens*

This essay conducts a literature review to examine the challenges that women academics face in Chinese higher education. Some of these challenges include underrepresentation and marginalization. Findings show a tendency in the scholarly discussions that separates gender from the social and organizational processes. Using three major organizational theory perspectives, this conceptual paper addresses the issue of academic gender disparity through analyzing organizational culture, organizational management, and the way higher education institutions interact with the external environments.

JCIHE Support

I want to thank several individuals who were instrumental in the publication of this issue. First, I want to thank the JCIHE Senior Associate Editors, Hayes Tang, University of Hong Kong and Bernhard Streitwieser, George Washington University who have been supporting JICHE with their support, insight, and creativity. I also want to thank Peter Ghazarian, Ashland University, Social Media Editor for sharing JCIHE through social media and Ray Mitic, University of North Dakota, Book Review Editor, for overseeing the book review process. Finally, I want to thank the senior leadership team of the CIES Higher Education SIG, Dante Salto, (University of Wisconsin-Milwaukee), HE-SIG Co-Chair and Maia Chankseliani (University of Oxford, UK), Co-Chair.

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Finally, JCIHE is dependent on the volunteer efforts of many scholars in the field of comparative and international higher education. I want to give special thanks to the JCIHE Peer Reviewers for the Volume 15 Issue 3: Thank you for the time you give to making sure that the articles are publish ready.

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Academic Stress, Social Support, and Adjustment Among International Students in India

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Abstract

This study uses a correlation, quantitative approach to understand the relationship between academic stress, adjustment, and social support. International students from various colleges and universities across India participated in the study. Analysis revealed significant relationships between academic stress, academic lifestyle, academic achievement, and social support. The adjustment was categorized into academic lifestyle, academic achievement, and academic motivation. Better adjustment and quality social support systems led to a decrease in academic stress. Multiple regression analysis showed academic lifestyle as a significant predictor of perceived academic stress. The academic motivation was directly proportional to an increase in academic stress ($p<0.05$). We found a significant difference in students' academic motivation based on gender. The findings of this study call for adopting a holistic approach to reduce international students' academic stress and adjustment concerns. Also, steps to ensure social support can enrich students' academic journey in a foreign land.

Keywords: academic stress, adjustment, international students, social support

Introduction

India is witnessing a surge in international student enrollment. These international students are defined as students who are temporary residents of a country, other than their own, for various educational purposes and get viewed as culturally distinguishable from their hosts (Paige, 1990). According to the All-India Survey of Higher Education (AISHE) from the Ministry of Human Resource Development (MHRD), there were around 48,000 students from various foreign countries in India in 2019 (MHRD, 2019).

"The highest share of students come from the neighboring countries of which Nepal contributes 26.88% of the total, followed by Afghanistan, Bangladesh, Sudan, Nigeria, Yemen, and Sri Lanka" (MHRD, 2019, p.14)."India is

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gradually emerging as the preferred destination for foreign students, particularly from the South Asian region of total, 73.4% of these international students enrolled in undergraduate courses, and 16.15% in postgraduate courses" (MHRD, 2019). Students migrating from another country experience a sudden change in cultures, people, food, and environment, negatively impacting them if they are not prepared. This maladjustment can cause academic stress, further deteriorating overall health (Hussain et al., 2008; Nasir, 2011). The ever-rising numbers, coupled with the transitional concerns faced by international students, make it imperative to delve deeper into their needs. Extensive studies done in developed countries like the United States (US) have found that international students experience a variety of stressors like discrimination, language barriers, loneliness, financial concerns, and academic pressures (Msengi, 2007). There are models like Michigan State University's international coffee hour and the outreach model for international student support created to ease these difficulties (Briggs & Ammigan, 2017). The present study delves deeper into the academic pressures faced by students, with an emphasis on academic stress.

Academic Stress Faced by International Students

Chronic stress experienced due to the nature of academic demands that could be associated with depression and physical illness is viewed as academic stress (Macgeorge et al., 2005). Experiencing high levels of academic-related stress puts young people at an increased risk of developing preventable physical health problems later in life (Stults-Kolehmainen & Sinha, 2014). Jones et al. (2018) found that academic distress was primarily responsible for student anxiety and the lack of family and peer support. Deb et al. (2015) found that academic stress was positively correlated to psychiatric problems. Perceived stress was an essential risk factor for low mental health among young adults (Bovier et al., 2004). The difficulties faced by students tend to have negative consequences on their health and academic achievement (Kilinc & Granello, 2003). The transition to college is incredibly stressful for those adolescents who leave home (Larose & Boivin, 1998). Stress and burnout affect academic achievement by increasing the risk of school dropout (Walburg, 2014). Stress faced by college students arises from academic and non-academic factors, including socio-cultural, environmental, and psychological attributes (Brand & Schoonheim-Klein, 2009).

Knowledge of English and cultural distance was directly linked to the stressfulness of role demands in the students (Wan et al., 1992). Their ability to cope with those demands was primarily influenced by their English knowledge and academic and social support networks. In these cases, social support systems at college may help these students manage their academic stress, showing them that academic stress can be reduced with the presence of social support networks (Dwyer & Cummings, 2001; Shumaker & Hill, 1991). Tinto (1993) saw social support helping college students become more socially integrated and showing a decrease in the likelihood of academic stress.

Need for Social Support

Social support was defined by Demaray and co-workers (2005) as an individual's perception that they are loved and valued by the other people in their social space. Duck (1998) claimed one's social-support system comprises people who have provided aid in the past and are helping in the present, or who are believed to be willing to provide help in the future. Social support is negatively related to academic stress (Wilks, 2008). Higher levels of academic stressors were predicted by higher levels of life stress and lower levels of social support (Misra et al., 2003). The occurrence of depression in college students decreases if students have had positive adjustments to academic life along with adequate social support (Ross & Mirowsky, 2006). Social support was seen to positively impact mental health among young adults (Bovier et al., 2004).

Similarly, support from friends and lecturers was found to moderate the relationship between attitudinal adjustment and academic performance (Othman et al., 2014). Lin (2009) concluded that students who experienced lower social support showed higher perceived stress and vice versa. Many participants in the study felt that it was the university's responsibility to help alleviate students' feelings of social isolation by advertising social events in and around campus (Girmay, 2019).

As international students are culturally very different from their hosts, they could face cultural disparity adjusting to a foreign land. Hence, a comprehensive guide can help to anticipate and understand international students' issues during their adaptation.

Adjustment Issues Faced by Students

Shaffer (1961) defined adjustment as the process through which a living organism maintains a clear balance between its own needs and the circumstances that influence the satisfaction of these needs. First-year college students who reported higher levels of homesickness showed worse overall adjustment to college and were associated with poorer social outcomes (English et al., 2017). International students experience different challenges like academic difficulties, cultural issues, and daily activities while adapting to a new environment (Cigularova, 2005; Selvadurai, 1992). According to a study conducted on Taiwanese students attending Midwestern US universities (Shih & Brown, 2000), the primary adjustment issues faced by international students were (1) lack of English proficiency, (2) inadequate financial resources, (3) problems in social adjustment, (4) problems in daily living, and (5) being lonely or homesickness. Having good family support predicted lower stress rates in students, and friend support predicted a greater level of emotional well-being (Kingery et al., 2020). Language barriers, lack of knowledge, inability to use those resources, and not having adequate social support networks can increase the problems faced by international students (Smith & Khawaja, 2011). The ability to adjust to the local food and severe climate conditions can affect the academic achievement of international students. Both emotional intelligence and cultural adjustment are essential factors that can affect the academic achievement of university students (Nasir, 2011).

The coronavirus (COVID-19) outbreak has spread rapidly and affected people's lives all across the globe. India has been severely affected by the lockdowns and social isolation, especially, in the educational sector (Sharma, 2020). COVID-19 has resulted in significant increases in stress, anxiety, and depression in college students (Husky et al., 2020; Li et al., 2020; Luo et al., 2020; Patsali et al., 2020). COVID-19 related stress has shown a strong correlation with anxiety and loneliness in international students (Misirlis et al., 2020).

Theoretical Framework

Transactional Theory of Stress and Coping

The transactional theory was developed by Richard Lazarus (Lazarus, 1966; Lazarus & Folkman, 1984), which shows that stress comes as a product of the transaction between a person (cognitive, physiological, affective, psychological, and neurological) and their complex environment. The model evaluates how significant life events and daily hassles impact one's emotions, emphasizing coping and stress. The level of stress experienced by one through their thoughts, emotions, and behaviors because of external stressors depends on the evaluation of the situation, which involves a judgment about whether their demands exceed the resources and the ability to cope when demands exceed resources (Lazarus & Folkman, 1984). As seen in this model, academic stress developed by students can be influenced by various factors in their environment.

Direct Effects Hypothesis

According to one of the most dominant social support models, people with high social support have better health than people with lower social support, regardless of stress (Cohen & Wills, 1985). The main-effects hypothesis states that social support is beneficial to an individual even if not facing a stressful condition. This hypothesis asserts that social support benefits depend on how much an individual participates in their social network, as proven in studies (Gerin et al., 1995). This theory indicates the need to promote social bonds among students to aid their adjustment.

Framework for International Adjustment (FIA)

This framework by Black et al. (1991) describes the cross-cultural adjustment process for expatriates and says that adjustment is multifaceted. According to this framework, the degree of adjustment for expatriates is based on three dimensions: their adjustment to the international workplace, their adjustment to interacting with host nationals, and their adjustment to the new environment. Determinants of these factors were divided into two categories, those having anticipatory adjustment (which is an individual's adjustment in the period before departure), and those factors related to in-country adjustment (which is an individual's adjustment to the host country). Our previous experiences influence the expectations we have during the anticipatory adjustment period. In-country adjustment is dependent on individual factors (self-efficacy, relationship skills, and perception skills), non-work factors (cultural novelty, family adjustment), organizational culture (social support, logistic help, institute's culture novelty), and job factors (role clarity, role discretion, role conflicts). This model focuses on integrating domestic and international adjustment of people who migrate to a foreign land which is used to understand the adjustment concerns of international students in a foreign work/academic space.

Research shows that one of the main apprehensions expressed by international students, especially those coming to India, is the cultural difference they experience, followed by adjusting to a different environment. This hampers the overall well-being of the student. This, along with their education, can cause academic stress leading to health issues. Admission of international students to countries such as India is at an all-time high, making this area relevant to the study. The steady inflow of international students into the country makes the study relevant. It benefits the population with positive experiences which will inspire people to develop more multicultural awareness and inclusiveness. Hence this study wishes to give students insight into pursuing their higher education in a South Asian country such as India.

Similar studies have been conducted on students in the US for the migrant Asian student population. But there are very few studies conducted on international students coming to India. This study aims to shed some light on the relationship between academic stress, social support, and adjustment of international students in an Indian context. Findings from the study can be used to help international students understand the nature of their concerns and help them be better prepared. Interventions can be developed to strengthen the adaptation process of international students and help boost their mental health.

Methodology

Research Design

A correlation research design was used to find the relationship between academic stress, social support and level of adjustment in international students. Correlation analysis was used to find the association between variables. Regression was used to predict the relationship between adjustment and social support on academic stress. Adjustment and social support are the independent variables and academic stress is the dependent variable. Descriptive statistics were used to find the central tendency, frequencies, and variation in the data.

In this study, adjustment is defined as the ability to adapt to the current environment (in this case, an academic institute) without facing any difficulties to perform regular, daily routine activities. Social support is the presence of people who provide constant help and comfort and offer a sense of belongingness. Academic stress is the inability to deal with the pressure caused by various academic aspects, such as exams and assignments, which interfere with daily life.

The study tries to demonstrate whether social support and adjustment are related to academic stress among international students pursuing higher education in India. It investigates the relationship between academic stress, social support, and adjustment among international students, and tests for the effect of social support and adjustment on academic stress among international students. The gender difference in academic stress, social support, and adjustment among international students has also been studied. The study's hypotheses were (a) no significant relationship between academic stress and social support of international students; (b) no significant relationship between academic stress and

adjustment of international students; and (c) no gender difference in the level of academic stress, social support, and adjustment among international students.

Participants

The participants consisted of 200 international students, aged 18–30 years, currently pursuing their undergraduate/postgraduate/M. Phil/Ph.D. programs across various Indian universities and colleges. The sample consisted of English-speaking international students of non-Indian origin across various metropolitan cities in India. Purposive and snowball sampling techniques were used for the data collection. The data collection took place during the initial phase of the COVID-19 pandemic when many students were struggling for resources to go back to their home countries or sustain themselves in India, which may have caused a dip in the anticipated sample size.

Instruments

Perceptions of Academic Stress (PAS) Scale

The 18-item scale was developed to measure the perceptions of academic stress and its sources (Bedewy & Gabriel, 2015). The scale has an internal consistency reliability of 0.7 (Cronbach's alpha), and there was evidence for content validity, and factor analysis resulted in four correlated and theoretically meaningful factors for the original PAS scale. The scale measures academic stress along four factors: pressures to perform, perceptions of workload, academic self-perception, and time restraints on a five-point Likert scale: 1=extremely irrelevant, 2=irrelevant, 3=slightly relevant, 4=relevant, and 5=strongly relevant. Five items were reverse-scored to avoid response patterns by the authors. A higher score equates to the student having lesser perceived academic stress.

Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS (Zimet et al., 1988) is a brief tool designed to measure perceptions of support from three sources: family, friends, and significant other. The scale comprises 12 items, with four items for each subscale. Social support is rated on a seven-point Likert scale: 1=very strongly disagree… 7=very strongly agree. The cumulative/total scores range from 12 to 84. The reliability of the total scale was 0.88 and the test-retest reliability of the total scale was 0.85. The scale had a high internal consistency ($\alpha = 0.88$).

Academic Adjustment Scale

The academic adjustment scale (Anderson et al., 2016) measures individuals' academic adjustment, primarily focusing on student sojourners who temporarily relocate to a new culture for tertiary education. The tool is divided into three subscales: academic lifestyle, academic achievement, and academic motivation. The reliability coefficient of this scale is 0.76 (Cronbach Alpha Coefficient). This scale has temporal stability and internal consistency. Two items from the tool were reverse scored: basic information about the participant's age, gender, course, institution; and country of origin (obtained at the beginning of the questionnaire).

Procedure

After the IRB approval, data collection was conducted using an online data survey platform with end-to-end encryption. The tools were chosen following an international population. The students were contacted through associations and social media platforms. Emails were sent to the students and informed consent was obtained from all the participants. Participants were also asked to refer other international students. Only the researcher and the supervisor accessed the data. Data collection took place online between June and August 2020, following the COVID-19 protocol.

Data analysis

Data from the completed questionnaires were analyzed using Statistical Package for the Social Sciences (SPSS) 20. After determining the normality of the data, descriptive statistics, Spearman correlation (ρ), multiple linear regression, independent T-test, and Mann-Whitney U test were performed.

Results

Table 1 presents the results of Spearman's correlation, which showed that academic stress had a statistically significant, moderately positive relationship with academic lifestyle (ρ=0.418, p<0.01). The results also showed a statistically significant, low positive correlation between academic achievement and social support (ρ=0.299, p<0.01; ρ=0.254, p<0.01). Academic lifestyle had a significant, low positive relationship with academic achievement, academic motivation, and social support (ρ=0.392, p<0.01; ρ=0.148, p<0.05; ρ=0.375, p<0.01). Academic achievement had a significant, low positive relationship with academic motivation (ρ=0.265, p<0.01). Academic motivation had a low negative relationship that was not statistically significant with perceived academic stress. (ρ=- 0.21). Social support had a statistically significant, moderately positive relationship with academic achievement (ρ= 0.321, p< 0.01). PAS data were normally distributed (p< 0.05) and Social Support and Adjustment subscales' data were not according to the results of Shapiro-Wilk normality tests.

Table 1

Descriptive Statistics and Spearman Correlation Matrix

Variables	*N*	Mean	SD	Min Value	Max Value	W	1	2	3	4	5
Perceived academic stress	200	59.38	10.79	28	86	.343					
Academic lifestyle	200	10.41	2.59	3	15	.000	.418**				
Academic achievement	200	11.29	3.20	3	15	.000	.299**	.392**			
Academic motivation	200	12.18	2.48	3	15	.000	-.021	.148*	.265**		
Social support	200	62.32	14.94	24	84	.000	.254**	.375**	.321**	.110	

Note. *p<0.05, **p<0.01, M=Mean, SD=Standard Deviation, W= Shapiro-Wilk's test of normality value

Table 2 presents the results of multiple regression analysis, showing that academic lifestyle predicted PAS (p<0.05). Academic lifestyle was a significant predictor of PAS, F (4, 195) = 13.713, p < .05, R2 = .220, and β= 0.437. Academic motivation inversely affected PAS (β =-.066), though not significantly (p>0.05). A variation of 22% in PAS was attributable to the independent variables (R2=.220). This outcome shows a relationship between PAS and social support and between PAS and adjustment.

Table 2

Multiple Regression Analyses of PAS

Predictor	Model	Unstandardized Coefficients		Standardized Coefficients	*t*	*F*	Sig.	*df*
		B	SE	*β*				
(Constant)	1	40.094	4.479		8.952	13.713	.000	4
Academic lifestyle		1.820	.297	.437	6.119		.000	
Academic achievement		.232	.241	.069	.962		.337	
Academic motivation		-.287	.290	-.066	-.989		.324	
Social support		.019	.050	.027	.386		.700	
				R =	.469[a]			
				R^2 =	.220			

[a] *Note.* Predictor: (constant), perceived academic stress

Table 3 presents the results of the independent sample t-test for gender differences among the variables in the present study. It showed no significant difference between male and female participants (p>0.05), although males had slightly higher PAS mean scores.

Table 3

Independent t-Test Comparison Between Male and Female PAS

Variable	N	Male		Female		*t*	Sig.	df
		Mean	SD	Mean	SD			
PAS	200	59.89	10.817	58.92	10.811	0.634	0.434	198

Note. PAS = perceived academic stress

The results in Table 4 show a significant difference in the academic motivation between male and female students, (U = 3778.5, (Z= 2.992, p< 0.05). Participants did not differ significantly in the other dimensions (p >0.05). Females reported higher academic lifestyle, academic motivation, and social support than males, as indicated by their higher mean rank. However, male international students had higher academic achievement (mean rank= 105.15) than females (mean rank= 96.30).

Table 4

Mann-Whitney U Test Comparisons Between Male and Female Participants

S. No.	Variable	Mean Rank		*U*	*Z*	Significance
		Male	Female			
1.	Academic lifestyle	94.67	105.78	4433.5	1.366	.172
2.	Academic achievement	105.15	96.30	4546.0	1.090	.276
3.	Academic motivation	87.77	112.01	3778.5	2.992	.003
4.	Social Support	92.95	107.33	4270.5	1.755	.079

Discussion

The study had three objectives. The first objective was to check if there was a relationship between international students' academic stress, social support, and adjustment. The second was to identify the effect of social support and adjustment on academic stress among international students. The third aimed to find the gender difference in academic stress, social support, and adjustment of international students. Academic stress significantly correlated with two of the three dimensions of adjustment and social support. Based on the questionnaires used to collect data, adjustment was further divided into three subscales; namely academic lifestyle, academic achievement, and academic motivation. The subscales were used for analysis to yield more specific findings.

When scoring for PAS, higher scores on the tool imply the student has lesser stress. From the study, PAS was found to have a significant positive correlation with social support, implying increased social support could decrease perceived academic stress and vice versa. This is consistent with the findings by Rayle and Chung (2007), where a high level of social support from friends often predicted low academic stress levels. Similarly, academic stress negatively influenced the social support experienced by undergraduate social work students (Wilks & Spivey, 2010). This shows an inverse relationship between the two variables, thus rejecting the first hypothesis.

PAS had a statistically significant positive correlation with academic lifestyle and academic achievement. This means that increased academic achievement and lifestyle can decrease academic stress. This finding aligns with some past research that shows a negative correlation between students' stress levels and academic achievement (Elias et al., 2011; Rafidah et al., 2009). Based on research, other factors like language barriers, seen as a major acculturative stressor for international students, interact with other stressors in both academic and socio-cultural contexts (Chen, 1999). Financial issues also affect international students' levels of acculturative stress (Eustace, 2007). Thus, more research is needed to understand the factors that influence international students' academic performance.

All three subscales of adjustment show a positive correlation with each other. This further reinstates the internal consistency of the variables of the adjustment scale used. Academic motivation is negatively correlated with perceived academic stress, which implies that increased academic motivation can lead to increased academic stress. In a study by Liu (2015), academic stress negatively predicted intrinsic motivation for class 10 students. Bhakta (2016) found that 82% of students seemed to have an average level of adjustment; a positive correlation was found between the students' level of adjustment and academic achievement. This finding goes against the proposed second hypothesis.

Apart from this, academic lifestyle and academic achievement positively correlated with social support. Hence, an increase in an individual's social support implies an increase in their academic lifestyle and achievement quality. Students with more significant friends in their social networks demonstrated higher academic achievement (Seon et al., 2019). In a study by Elias and Haynes (2008), academic achievement and social support were associated with students as young as the third grade. Social support influenced students' academic performance strongly. Students reporting higher levels of social support and lower levels of perceived stress also reported higher levels of life satisfaction (Coffman & Gilligan, 2002).

The multiple regression showed that academic lifestyle, a subscale of adjustment, significantly predicted PAS. Wan et al. (1992), found that adjustment difficulties tend to affect international students' academic performance, and their physical and mental health as they try to adapt to their new environment. Academic motivation, which is a subscale of adjustment, inversely predicts PAS which implies that, as one's academic motivation to excel goes up, it may increase their perceived academic stress. Acculturative stress is a significant and negative factor of adjustment among international students (Oyeniyi et al., 2021). Students who self-report higher levels of academic-related stress also report lower well-being (Organisation for Economic Co-operation and Development [OECD], 2017). Well-planned buddy programs introduced in colleges provide international students with immense social support and ease the process of adaptation to the various cultures of their host country (Nilsson, 2019). Campus orientations and support systems helped students understand the healthcare systems present in colleges (Khunkhun & Fournier, 2021). Hence, it becomes imperative to find more ways to increase motivation and reduce academic stress as it directly affects one's mental and physical health. These outcomes reinforce the previous findings from the correlation analysis of the variables.

Males had slightly higher PAS scores, implying lesser stress than females; but the difference was not significant. This is consistent with previous studies (Karaman et al., 2019; Sulaiman et al., 2009). Females reported higher academic lifestyles, academic motivation, and social support than males in the current study. Women demonstrated better maintenance and processing of social support, and some studies have also indicated their superior academic achievement (Belle, 1991; Stoet & Geary, 2015; Voyer & Voyer, 2014). Bhakta (2016) found a significant gender difference in adjustment levels. A significant gender difference was seen only in academic motivation in the present study.

Limitations of the study

Due to the unexpected pandemic, the proposed sample size had to be reduced. Since the study explored India's international student population, the collected sample size may not be representative of the entire population. In reality, there could be a host of other concerns that influence perceived academic stress; examples include culture, food, and climate. Moreover, this study only delves into the academic aspects of adjustment difficulties, which leaves room for potential socio-cultural and emotional and cognitive domains to be explored in the future.

Implications and Scope for Further Research

The current study provides additional empirical data that predicts the influence of adjustment on academic stress. These findings can help create better awareness and guidance programs for international students, which can aid their transition to a new country. Specialized modules can be included in college orientations. Universities could conduct classes and promote peer/alumni groups that encourage bonding among students from different countries. Teachers and students could be given special training on cultural sensitivity. Clubs/groups can be initiated and equipped to look into the welfare of international students and their overall well-being.

While this study included students from various countries, additional research can look at students from specific countries with a higher inflow of students into India to obtain more information about their native countries. Comparative studies can also be conducted to discover and analyze characteristic differences in their populations. The research objectives can also be analyzed from a qualitative approach to get a more comprehensive understanding of the experiences

international students go through regarding academic stress, adjustment difficulties, and the influence of social support during their stay in a foreign land.

Conclusion

The current study provides conclusive evidence on the influence of adjustment and social support on the academic stress faced by international students pursuing their higher education in India. This sheds light on the need for more comprehensive policies in these institutions to facilitate peer interactions between students. More research in this area will encourage international students to choose India as their host country for higher education and ease their transition, ensuring a better educational experience.

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Empirical Article

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The Effect of Electronic Portfolio Use on Pre-Service Elementary Teachers' Academic Achievement Levels and Self-Efficacy Beliefs Regarding the Teaching Process

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Abstract

It is important to use technology in the education of teacher candidates in higher education in Turkey. These technology uses also affect the cognitive development of teacher candidates. It is necessary for pre-service teachers to use an electronic portfolio, one of the technological developments, and to determine the effects of this on the pre-service teacher. This study aims to determine the effect of using an electronic portfolio on pre-service elementary teachers' academic achievement levels and self-efficacy beliefs regarding the teaching process. A mixed-method approach involving 61 participants lasted for 14 weeks with volunteer pre-service teachers participating. Through parametric test techniques, and descriptive and content analysis, findings from this study showed that the use of e-portfolio positively affected the self-efficacy beliefs and academic achievement levels of pre-service elementary teachers. In addition, a linear relationship was found between self-efficacy beliefs and academic achievement. It is important to have infrastructure and technological competencies in similar studies.

Keywords: Academic achievement, e-portfolio, pre-service elementary teachers, self-efficacy belief, teaching process

The integration and use of technology in the education-teaching process is increasing. In order to integrate technology into the teaching process, teachers and pre-service teachers need to improve themselves in the use of technology and increase their self-efficacy in this regard (Ritzhaupt et al., 2010). The development of teachers' self-efficacy beliefs in any subject or subjects provides the development of lifelong learning skills. These skills are the ability to self-manage professional development needs such as solving problems, working independently or in a team, communicating effectively, learning, teaching and using technology (Heinrich et al., 2007). It is thought that these skills,

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which are acquired through self-efficacy belief, will be effective in improving both themselves and their students (Yorgancı & Bozgeyikli, 2016). It is known that pre-service teachers have high self-efficacy beliefs to teach before starting their profession. This belief is aimed at educating themselves at the best possible level in every aspect (Bahçivan & Aydin, 2020). Due to the development of today's digital technologies, the use of technology in education, and the advantages of technology use in education, it is important for pre-service teachers to have self-efficacy beliefs in learning and teaching the use of technology in the professional development process. Because it is known that, the developing technology reflects the education process and provides convenience (Akpınar, 2003).

In today's era, integrating digital technology into the assessment process has become a very important need. Teachers aim to facilitate the assessment process by saving both stationery equipment and time by using alternative assessment methods in addition to traditional assessment methods (Akbaş & Gençtürk, 2013; Gelbal & Kelecioğlu, 2007). Authentic assessment, also known as performance and direct assessment, is a task-oriented assessment method that helps a learner master a specific content area. The focus of authentic assessment is to evaluate the student's performance on a specific task that uses learned knowledge and skills in a realistic environment (Montgomery, 2001). As an example of alternative assessment; exhibitions, writing assignments, reflections, journals and portfolios etc. (Herman et al., 1992). With the development of technology, the use of portfolios becomes easier. Electronic portfolios (e-portfolios), known as files stored in digital media, eliminate the costs of using materials such as paper, ink, toner, and binding (Alshawi & Alshumaimeri, 2017). The accessibility and ease of use of information and communication technology show that an e-portfolio is no longer a used concept but an application method (Meeus et al., 2006). It also provides ease of collaboration using digital space and shared files. It is used not only in the educational environment, but also in the office, storing the performance of company employees, keeping the information or teaching materials of staff or teachers (Wilson, 2018), and even in many recruitment processes, especially teachers (Painter & Wetzel, 2005; Strawhecker et al., 2007). Apart from these, it is also used to store student products and evaluate the process in the education process (Author, 2020).

Conceptual and Theoretical Background

E-portfolio

With the development of computer technologies, keeping student records electronically has become very popular (Banister et al., 2006). E-portfolios are files in computer environments where students' work, achievements, and visual and audio products such as text, pictures, video, and audio are stored during the learning process (Abrami & Barrett, 2005; Gatlin & Jacob, 2002). E-portfolios are usually a collection of a student's experience and skills and are managed by a web software program. Concerns about the authenticity of e-portfolios are valid, as with any digital document or online representation. However, some measures can be taken to protect the integrity of e-portfolios and ensure their authenticity. Here are some points to consider:

Verification processes: Implementing a verification process can help confirm the authenticity of e-portfolios. This could involve cross-referencing the information provided in the e-portfolio with reliable sources, such as educational institutions, employers, or professional organizations. Additionally, using digital signature technologies or issuing certificates can enhance the credibility of the e-portfolio.

Multi-modal evidence: E-portfolios can incorporate various forms of evidence, including written documents, images, videos, and audio recordings. By including multiple forms of evidence, it becomes more challenging to fabricate an entire e-portfolio convincingly. Authenticating different types of evidence can add another layer of credibility.

Secure platforms: Using secure and reputable platforms or systems for hosting and sharing e-portfolios is crucial. These platforms should employ robust security measures to protect against tampering or unauthorized access. Encryption, access controls, and regular security audits are essential features to ensure the integrity of the e-portfolios.

Collaborative assessment: In certain contexts, involving multiple assessors or reviewers can help verify the authenticity of an e-portfolio. Each assessor can bring a unique perspective and expertise to the evaluation process, reducing the likelihood of manipulation or misrepresentation.

Peer review: Peer review processes, where e-portfolios are assessed by peers or subject matter experts, can act as a form of validation. Peers can provide feedback, ask questions, and share their expertise to verify the authenticity and accuracy of the e-portfolio content.

Continuous monitoring: Regularly reviewing and updating e-portfolios can help identify any inconsistencies or discrepancies over time. This can be done by individuals themselves, educational institutions, or employers, depending on the purpose of the e-portfolio. Periodic checks can help ensure that the information remains accurate and up-to-date.

Digital forensics: In cases where there are concerns about the authenticity of an e-portfolio, digital forensics techniques can be employed. These techniques involve analyzing digital artifacts, metadata, and other relevant information to verify the integrity and origins of the e-portfolio content.

Overall, a combination of verification processes, secure platforms, collaborative assessment, peer review, continuous monitoring, and digital forensics can help protect the integrity of e-portfolios and address concerns about authenticity.

They are available for students of all school levels. However, it is possible to create an e-portfolio not only for students but also for teachers and pre-service teachers. In this respect, files containing all the activities that make up the curriculum vitae of pre-service teachers, such as monitoring their development throughout their vocational education processes, and personal and academic achievements, are also known as e-portfolios (Whitfield, 2011).

The use of e-portfolios in a teacher's in-service program can be an effective strategy for organizing and presenting evidence of their professional development. At the same time, e-portfolios can also serve as a valuable tool for integrating technology into the classroom, fostering the development of digital literacy skills, and facilitating communication and collaboration between teachers, students, and parents.

Self-efficacy

Self-efficacy is an essential part of Bandura's social cognitive theory. It is a concept that affects an individual's cognitive, motivational, affective aspects and preferences (Bandura, 1989). It can basically be defined as the individual's desire or motivation to take action (Brant & Willox, 2020). Every individual has self-efficacy for every situation. A student's self-efficacy to be successful in his courses and a teacher's self-efficacy to complete his professional development can be given as examples. In particular, teachers' self-efficacy is of great importance as they both aim to improve themselves and include effective guidance and teaching activities for their students. In general, a teacher's self-efficacy belief, it includes plans to set goals, manage behavior, self-regulate, and perform teaching-related tasks (Clark, 2020).

It is known that pre-service teachers' beliefs about being able to practice the profession before starting the profession are higher than their belief status after starting the profession (Bahçivan & Aydin, 2020). Actually, the state of being able to practice the profession differs from the theoretical teachings. Teachers who start their profession need portfolios in order to be able to live easily and act quickly in subjects such as student follow-up, recognition, and evaluation of products in the education and training process. In this respect, the teacher's positive self-efficacy belief in the integration of changing and developing technology and using e-portfolio skills will facilitate the learning and teaching process. It is known that with the increasing use of technology in educational environments, teachers and pre-services teachers need to improve themselves in the use of technology (Sa'ari et al., 2005).

Learning and using e-portfolios, which are used especially in the "evaluation" of teaching, is one of the issues that attract attention in connection with technology. Teachers need to learn the e-portfolio and be able to use it actively in educational environments in order to both improve themselves and follow students. In fact, it can be said that the use of e-portfolio affects the development of high-level mental skills in students (Meyer et al., 2013; Polat Demir & Kutlu, 2016). It is known that the development of high-level mental skills of students such as thinking, analyzing and synthesizing affects

their success in school life and therefore their academic studies, and as a result, their self-efficacy beliefs develop positively. As a matter of fact, it has been determined in studies that the use of e-portfolios also affects the development of individual competencies such as self-evaluation and self-management (Akgün & Şahin Kölemen, 2020; Ayan, 2010). Therefore, it can be said that the use of e-portfolios in the education process improves high-level mental skills and indirectly self-efficacy. However, it is thought that success is related to self-efficacy and that increasing success causes an increase in self-efficacy (Haidt & Robin, 1999; Koca & Dadandı, 2019; Tunca & Alkın-Şahin, 2014).

Theoretical structure

The use of e-portfolio is important in ensuring the professional development of pre-services teachers and gaining teaching skills in higher education institutions. Meeus et al., (2006) stated in their study that the e-portfolio, which is student-centered and focused on using digital technologies, provides "proficiency", "action" and "thinking" cycles in pre-services teachers. It is thought that pre-services teachers gain various competencies, especially the development of metacognitive skills. Because of using e-portfolio, pre-service teachers' own metacognitive development is ensured (Filkins, 2010). In other words, it is known that digital technologies encourage pre-services teachers to think (Kloser et al, 2020). Thanks to the e-portfolio, pre-services teachers can make self-regulation by following their own works and products (Meyer et al., 2011). This situation affects the competency of pre-services teachers. Competency includes all the changes that occur in pre-services teachers during the teaching process. It is better to focus on a specific area, as it is quite difficult to identify all the changes in pre-services teachers. The purpose of using e-portfolio is to provide pre-service teachers with the ability to gain experience using e-portfolio (Heinrich et al., 2007; Meeus et al., 2006). At this point, it is very important to have better equipped teachers who have gained experience in raising their own students (Gatlin & Jacob, 2002). In the process of using the e-portfolio, the self-efficacy status of the pre-service teacher can also be examined. In addition, at the end of the e-portfolio usage process, there is a situation of action and reflection. In the aforementioned study, the academic achievement status of pre-services teachers was considered as an indicator of this.

Pre-service teacher program in Turkey

When the history of teacher training is examined, it is understood that it is a system that started in the Ottoman period and continues today. The foundation of the first teacher training schools in Turkey was laid in 1848 during the Ottoman period. These schools, called "*Darülmüalime*", started to train teachers in 1851. Students were selected through an examination among the candidates (Akyüz, 2001). It is known that the students selected and educated in these schools can be appointed as teachers upon meeting two conditions in addition to their education. In teaching assignments made at the end of 3 years of education, they are required to demonstrate good behavior and know Arabic and Turkish at a good level (Atanur Başkan et al., 2006).

These schools were named "Teacher (Muallim) School" in 1924 and "Teacher School" in 1935 with the establishment of the republic. These schools continued their education with minor changes until 1974. In 1974, in addition to all kinds of teacher training laws, two-year education institutes were opened to train primary school teachers. In 1982, these institutes were transformed into four-year faculties. In 1993, as today, primary school teachers receive education in education faculties for four years within the scope of classroom teaching (Akdemir, 2013).

Teacher candidates are given the opportunity to improve themselves by taking courses in the fields of formation, field proficiency, and professional competence during their undergraduate education. In particular, classroom teachers receive extra training in areas such as laboratories, technology, and special education (CoHE, 2007). It is aimed to improve the technological competence of teachers in higher education. In addition, the developments of alternative evaluation tools or data collection tools are among the desired objectives.

Purpose and importance of the research

The use of e-portfolios is important in subjects such as the use of technological developments in the learning and teaching environment, the professional development of pre-service teachers, and student follow-up. A process expected to be used in the educational environment as well as the use of changing and rapidly developing technology in all areas of life. It is known that these technological developments used enable teachers and pre-service teachers to gain professional competence. In particular, the ability to monitor all developmental activities of all students in a classroom together and regularly throughout the process provides convenience for teachers and pre-service teachers. It is an important development that the student's all kinds of activity or activity processes and the products at the end of it are collected and can be examined or evaluated at any time and anywhere. In addition, it can be said that the use of e-portfolio and the development of high-level thinking skills and self-efficacy beliefs of teachers or students also affect the development of lifelong learning skills. With this study, guidance was given to teacher candidates studying in higher education to improve themselves. The pre-service teacher develops their self-efficacy for using e-portfolio in higher education and for self-development by realizing its effect on students. This study, it is aimed to contribute to the development of teacher training programs in the higher education community.

This study aims to determine the effect of using an e-portfolio on pre-service elementary teachers' academic achievement levels and self-efficacy beliefs regarding the teaching process. In this context, the accuracy of the following hypotheses was investigated. Appropriate research questions were formed to reach these hypotheses.

Hypotheses

H1. The use of e-portfolio positively affects pre-service elementary teachers' self-efficacy beliefs.

H2. The use of e-portfolio positively affects the academic achievement of pre-service elementary teacher.

H3. Pre-service teachers have positive opinions about the effect of using e-portfolio in the teaching process on self-efficacy beliefs and academic achievement.

H4. There is a linear relationship between pre-service elementary teachers' self-efficacy beliefs and their academic achievement in assessment and evaluation course.

Research questions

1. Does the use of e-portfolio cause a significant difference in the self-efficacy beliefs of pre-service elementary teachers' regarding the teaching process?
2. Does the use of e-portfolio cause a significant difference in the academic achievement levels of pre-service elementary teachers'?
3. What are the views of pre-service teachers' on the effect of using e-portfolio in the teaching process on self-efficacy beliefs and academic achievement?
4. What is the relationship between pre-service teachers' self-efficacy beliefs and their academic achievement levels?

Method

Research Design

In the research, quasi-experimental design with pre-posttest control group was used. The quasi-experimental design is used when working on existing groups when participants cannot be randomly assigned to groups (Büyüköztürk, 2009; Çepni, 2010). One of the quasi-experimental designs, the pre-posttest control group design examines the effect of the experimental procedure on the dependent variable (Fraenkel et al., 2012). In the experimental group, the "Measurement and Evaluation in Education Course" was carried out with an e-portfolio. In the control group, pre-service elementary teachers taught according to the current teaching activity within the scope of this course. It was also supported by qualitative data embedded in the experimental design. It has been used in qualitative data to increase the objectivity of quantitative data and

to increase the usefulness of research results (Creswell & Plano Clark, 2015). Qualitative data in the research were collected through face-to-face interviews. In this study, it was aimed to determine the effects of the qualitative dimension and the use of e-portfolio on pre-service teachers' self-efficacy beliefs about the teaching process and academic achievement. The research lasted for 42 hours (14 weeks).

Participants

The research was conducted with 3rd year students studying in the Classroom Teaching programme of a state university in Turkey, in the spring semester of the 2019-2020 academic years. In the study experimental and control group, the lessons were taught online through the zoom program. The lessons were taught online due to the coronavirus (covid-19) outbreak that occurred worldwide. One of the two groups participating in the study was randomly determined as the experimental group (N: 30) and the other as the control group (N: 31). While the lessons in the experimental group were taught in the computer laboratory, the lessons in the control group were taught in a normal classroom environment. In order to eliminate the teacher difference in the groups, the lessons were conducted by the researcher in both the experimental and control groups. Qualitative data were collected by randomly selecting 13 volunteer pre-services teachers in the experimental group. The general characteristics of the participants are given in Table 1 (EG: Experimental Group, CG: Control Group). These data are given in order to understand participant characteristics in the eyes of the reader and to clearly understand the relationships between research questions and participant characteristics.

Table 1

Participant Characteristics I

Groups	Gender		Parents' Profession		Internet Access		Teaching Experience	
	Female	Male	Teacher	Others	Yes	No	Yes	No
EG	27	3	1	29	29	1	9	21
CG	28	3	4	27	30	1	5	26

According to Table 1, it can be said that the experimental and control groups showed similar characteristics in areas such as gender, parents profession, internet access and teaching experiences. Accordingly, the majority of the participants are women. It can be said that the parents of one participant in the experimental group and four in the control group are teachers; therefore, they know the teaching profession. Almost all of the participants have internet access whenever they want. Finally, it was determined that nine participants from the experimental group and five participants from the control group had experience in the teaching profession. Apart from these data, other demographic characteristics of the participants are given in Table 2.

According to Table 2, it is understood that the majority of the participants have one or two siblings (One participant in the experimental and control groups does not have a sibling). It is seen that the majority of the participants graduated from high schools called "Anatolian high schools". In addition, it is understood that the family income level of the majority of the participants is at a middle level. Apart from these, the data on the pre-application academic achievement and self-efficacy beliefs of the participants are presented in Table 3.

As seen in Table 3, there is no significant difference between the experimental and control groups in terms of academic achievement pre-test results ($p>0.05$), while there is a significant difference between the groups in terms of self-efficacy beliefs of the experimental and control groups before the research ($p<0.05$). 0.05). It is seen that this difference in self-efficacy beliefs is in favor of the control group (Mean (KG) = 4.02 > Mean (EG) = 3.37). As a result, it can be

Table 2

Participant Characteristics II

Groups	Number of Siblings				Type of School Graduated				Income Status		
	1	2	3	4+	Anatolian High School	Flat-Basic High School	Teacher's High School	Others	Low	Middle	High
EG	9	9	8	3	21	3	3	3	0	28	2
CG	12	10	6	2	16	9	4	2	2	27	2

Table 3.

Pre-Test Results of Participant Groups

Scales	Groups	N	Mean	Std. Deviation	t	*p*
Academic Achievement Test	Experiment	30	45.83	13.96	0.51	0.61
	Control	31	44.19	10.96		
Self-Efficacy Belief Scale	Experiment	30	3.37	0.40	-6.17	0.00*
	Control	31	4.02	0.41		

* $p<0.05$

said that while there is no difference between the experimental and control groups in terms of academic achievement before the research, there is a difference in favor of the pre-service teachers in the control group in terms of self-efficacy beliefs.

Data collection tools

In the study, a self-efficacy belief scale and academic achievement test were used to collect quantitative data. In the process of collecting qualitative data, face-to-face interviews were conducted. Information and reliability-validity values for these tools are presented below.

Pre-service teachers' self-efficacy belief scale regarding the teaching process: It was used to determine pre-service teachers' self-efficacy regarding the teaching process. This scale was developed by Özdemir (2008) for pre-service teachers. The scale was used with permission from the author. The scale is a 5-point Likert type and consists of 40 items. The scale consists of three sub-dimensions: planning (8 items), implementation (19 items), and evaluation (13 items). In the reliability analysis, Cronbach's alpha internal consistency coefficient was found to be 0.67 for the first dimension (planning) of the scale, 0.84 for the second dimension (application), and 0.76 for the third dimension (evaluation). The internal consistency coefficient for the whole scale was calculated as 0.88. For this study, Cronbach's alpha internal consistency coefficient was

found to be 0.85 for the planning sub-dimension, 0.91 for the implementation sub-dimension, and 0.90 for the evaluation sub-dimension. The internal consistency coefficient for the whole scale was calculated as 0.95.

Academic Achievement Test; It was used to determine the success of pre-service teachers for measurement and evaluation. This test was selected from the *Public Personnel Selection Exam (PPSE)* questions applied in Turkey in previous years. The researchers made subject-specific question selections. Although it is assumed that the reliability, validity, and item analyses of these test items used in national exams were made beforehand, item analyses were re-done in this study. Accordingly, while the difficulty indexes of the items in the scale ranged between 0.40 and 0.74, it was determined that there was an accumulation of around 0.70. Similarly, item discrimination indices were found to be between 0.20 and 0.40. Based on these data, the average item difficulty index of the test was calculated as 0.71 (easy), and the distinguishing feature of the test was calculated as 0.31 (good item). In addition, the KR-20 reliability coefficient for the whole test was found to be 0.74.

Interview: To support the quantitative data in the research, qualitative data were collected through interviews. In the interview, questions prepared by the researchers by taking expert opinions and appropriate probes were used. Within the scope of the reliability and validity of the interview method; Participant characteristics are presented in detail in order to understand the answers given. In addition, participant citations are given in the findings section as well. The analyzes made by two experts with doctoral degrees in the classroom teaching program and e-portfolio were evaluated based on consensus. Accordingly, 90% consensus was reached on the trilogy of code-category and theme. As a matter of fact, according to Miles and Huberman (1994), it can be said that the consensus of 80% and above is reliable.

Analysis of data

In the analysis of the quantitative data, in the comparison of the scores on academic achievement and self-efficacy beliefs of the pre-service teachers in the experimental and control groups, the variances were homogeneous (homogeneity, $p=0.19$; $p> 0.05$), the data showed a normal distribution (Shapiro-Wilk= 0.12; $p> 0.05$), the sample groups were since the numbers were 30 or more, "Two-Factor ANOVA for Mixed Measures" and "Covariance Analysis (ANCOVA)" tests, which are parametric tests, were used in the study. It was observed that there was a significant difference in favor of the control group between the pre-test scores of the pre-test self-efficacy beliefs about the teaching process of the pre-service elementary teachers in the experimental and control groups. For this reason, "single factor analysis of covariance (ANCOVA)" was used to compare the self-efficacy beliefs of the groups. For this, the assumptions were checked first, and as a result of the Levene test, it was seen that the homogeneity assumptions of the variances were met and the result of the Levene test was greater than 0.05. It was determined that the within-group regression slopes (regression coefficients) of the groups were equal ($p= 0.20$; $p>0.05$) and there was a linear relationship between the groups in the correlation analysis performed between the groups. In the analysis of the scores related to self-efficacy beliefs towards the teaching process, the pretests were defined as covariant variables and the difference between the corrected posttest mean scores was examined.

The covariance of the groups was also found to be equal for the pairwise combinations of the measurement sets obtained from the groups of the Measurement and Evaluation achievement test scores ($p=0.61$; $p>0.05$). Considering these data results, the "two-factor ANOVA test for mixed measures" was applied because the groups met the parametric test assumptions. It is recommended that this analysis be used in designs with pre-posttest control groups (Büyüköztürk, 2019).

The eta-square ($\eta 2$) correlation coefficient is frequently used to determine the effect size of the study. It explains the effect of the independent variable on the dependent variable without a linear relationship between the variables. It takes a value between 0.00 and 1.00. It is interpreted as a small effect between 0.00 and 0.01, a medium effect between 0.01 and 0.06, and a large effect between 0.06 and 0.14 (Büyüköztürk, 2017; Cohen, 1988). However, qualitative data were obtained by recording them on the recorder through face-to-face interviews. The data was then transcribed. Content analysis technique was used in the analysis of qualitative data. Qualitative data are collected for reasons such as supporting quantitative data, determining the accuracy of the findings obtained with quantitative data, and learning a finding in detail. The qualitative data in this study were analyzed to give detailed and in-depth findings of the category and thematic triad to

give detailed information about the participant quotes and to answer the research question by using "codes" from these quotes (Yıldırım & Şimşek, 2013). No computer program was used for content analysis.

Results

The findings obtained within the scope of the research are presented in the order of research hypotheses and questions.

Findings on self-efficacy beliefs regarding the teaching process; A single factor analysis of Covariance (ANCOVA) was conducted to determine whether there was a significant difference between the self-efficacy beliefs and post-test scores of the pre-service elementary teachers in the experimental and control group regarding the teaching process. The results are given in Table 4.

When Table 4 is examined, it is concluded that there is a significant difference between the self-efficacy beliefs of the pre-service teachers regarding the teaching process, and the adjusted mean scores of the experimental and control groups

Table 4

ANCOVA Results on Self-Efficacy Beliefs Regarding Teaching Process of Pre-Service Elementary Teachers in Experimental and Control Group

Source of Variance	Sum of Squares	sd	Mean Squares	F	*p*	η 2
Pre Test	1665.92	1	1665.92	8.45	0.00*	0.13
Groups	3185.72	1	3185.72	16.15	0.00*	0.22
Error	11440.28	58	197.25			
Total	15730.82	61				

*p<0.05

(F (1.58) = 16.15, p<0.05). In other words, it is seen that there is a significant difference between the post-test scores of the experimental and control groups. Accordingly, at the end of the study, there was a significant difference in favor of the experimental group in terms of self-efficacy belief between the experimental and control groups (Experimental group average =165.0, control group average=154,8). According to these findings, it is seen that the e-portfolio application has a significant effect on the self-efficacy beliefs of the pre-service elementary teachers' regarding the teaching process. Considering the effect size of this study, the effect size between groups is 0.22. The effect size obtained in this study has a wide effect.

Findings regarding the academic achievement levels of pre-service teachers'; the change in the academic achievement levels of pre-service teachers' because of the research is given in Table 5.

When Table 5 is examined, it is concluded that there is a significant difference between the achievement pre-test and post-test total score averages of the individuals in the experimental and control groups (F(1.59)= 7.432, p<0.05). According to this result, the changes in the groups from the pretest to the posttest are not taken into account. Considering the main effect of the measurement, it was concluded that there was a significant difference between the pre-test and post-test mean scores of the individuals in the experimental and control groups, regardless of the group (F(1.36)= 375.471, p<0.05). When the group*measurement main effect was examined, it was seen that there was a significant difference between the academic achievement post-test scores of the pre-service teachers in the experimental and control groups, but the common effects of

Table 5

Two-Factor ANOVA for Academic Achievement Post-Test Mixed Measures

Source of Variance	KT	sd	KO	F	*p*	η²
Between subjects	9672.13	60				
Group (Individual/group)	1082.02	1	1082.02	7.43	.01*	.11
Error	8590.11	59	145.59			
In-subjects	66871.59	61				
Measurement (Pre-Posttest)	57299.46	1	57299.46	375.47	.00*	.86
Group*Measurement	568.31	1	568.31	3.72	.06	
Error	9003.82	59	152.61			
Total	76543.72	121				

*p<0.05

repeated measurement factors on academic achievement scores were not significant (F (1.59) = 568.31, p>0.05). According to this result, it is seen that the e-portfolio application has a significant effect on the academic achievement of pre-service teachers. When the effect size of this study was examined, it was seen that the effect size was .86 for the inter-measurement and .11 for the group (Individual/group) effect. In this case, it can be said that the effect sizes obtained from the research have a large effect between the measurements, and the group (Individual/group) effect has a middle effect.

The effect of using an e-portfolio on academic achievement and self-efficacy beliefs in the teaching-learning process: In addition to the quantitative findings of the research, the qualitative findings are presented below. Qualitative data were collected under one theme and three categories. The findings were supported with appropriate quotations and coding.

Theme: The effect of using e-portfolio on academic achievement and self-efficacy beliefs in the teaching-learning process

As a result of the analysis, only 1 of 13 participants (7.69%) expressed negative thoughts regarding the use of e-portfolio, while 1 participant stated a negative aspect in addition to his / her positive thoughts. Apart from this, they stated that the use of e-portfolio by the participants affected their academic achievement and the development of their self-efficacy beliefs. The citations in question are analyzed below with their appropriate codes. Participants were coded numerically (Participant1=P1)

Category 1: The effect on self-efficacy belief: When the participant's quotations are examined, the statements related to self-efficacy belief in the process of using an e-portfolio are given below.

> *The fact that you send homework on a regular basis every week and that I see this homework has a very positive effect. Because it was followed regularly and I have the chance to repeat it thanks to this system, so I think, it has a positive effect (P3).*
>
> *We see our homework in a systematic way. After that, it goes in a sequence like this. Gradually, the intensity of our homework is increasing. So I definitely think it's useful. So for this, I reconciled Motivation a little bit. I also think it has partially increased our ability to use technology (P4).*
>
> *Something to use very well to reinforce topics. You give an activity and performance assignment that helps him measure the things he tells one-to-one, and I think it has an effect because I can see where I am and how I am after sending it (P8).*

For example, I could not use it very effectively in your first assignments. I just used your feedback to correct the answer using the copy-paste method. Then when I thought about the exams, I also increased the permanence by solving them. I saw my mistakes because you already wrote the answers clearly (P9).

It provided order for me. I was in a process where I regularly uploaded and received feedback every week. In that respect, it was good for me (P10).

Again, this is about motivation for me. I think that having activities and presentations makes learning better this way. Being in a constant activity about the lesson made the lesson more memorable for me (P11).

Here, the portfolio system actually enabled us to be active in that lesson, that is, it enabled us to be active in some way by doing those homework's, correcting the homework or making self-assessments, even if it was not face-to-face or remotely. This of course improved the motivation to learn (P13).

When the citations are examined, it is seen that factors such as being based on a "*regular*", "*followable*" and "*systematic*" order weekly, facilitating the preparation for "*exams*" with the help of "*technology*", and understanding the participant's "*own level*" (where he is) with answers and "*feedback*" have a positive effect on learning "*motivation*" and "*self-regulation*". For these reasons, it can be said that self-efficacy is positively affected by the majority of the participants in the process of using an e-portfolio.

Category 2: The effect on academic achievement: When the participant citations are examined, the statements related to academic achievement in the process of using an e-portfolio are given below.

We could get help from you. That is why it was even more efficient as there was instant feedback. I saw what we had to learn. I was seeing PPSE questions. Hani was preparing both for the exam and for the lesson. Thus, we show our shortcomings with what you need to complete (P1).

It was easier for us to reach within the scope of this course; I was able to reach every presentation instantly. Again, doing activities after each lesson made the information more permanent. Yes, there were things we practiced, for example, we were asked to prepare a rubric. After preparing the rubric, you gave feedback about it and I saw my mistakes and shortcomings in it. In this way, I think it contributed to my learning (P2).

We gained a lot of information in terms of the measurement lesson, we had the opportunity to complete them with the assignments you gave, we saw the places where you lacked feedback and we evaluated ourselves in this process. Therefore, it was a positive process (P3).

Since homework was given every week, we did this right after we saw the lesson and it stayed in our minds and we had the opportunity to repeat it because we got feedback from them, and performance assignments cover everything in that lesson, so it was a great help in our Teaching process (P7).

I think it is effective in a positive way because it ensures that the information is permanent. It makes up for our shortcomings again, and it helps a lot in terms of being permanent with the feedback you give. ... When I thought about the exam, I also increased my permanence by solving them (P9).

It became more memorable for me when I did different activities and made transactions here and saw the questions (P11).

The Word documents you provided feedback on were useful for me. The boots feature test questions were extra helpful in solving the questions in the test book (P12).

So now, from the answers you gave as feedback, I did not just say that I made a mistake, when I learned why I did it wrong, I had more information about the subject and was able to convert that minus to plus (P13).

When the citations are examined, it is understood that the participants carried out activities that affect their academic achievement with the e-portfolio usage process, such as having "*different activities*", immediate "*feedback*" on the answers to these activities, "*repeating*" when desired; solving the "*exam or questions*" related to the exam (PPSE) and making "*evaluations*" about it. In general, it can be said that the majority of the participants use expressions that positively affect academic achievement in the process of using an e-portfolio.

Category 3: Negative thoughts about the use of e-portfolio: The negative thoughts of the participants about the use of e-portfolio are given below.

... We do not have a very difficult assignment, it is easier than the others, but it still takes a little time because it is within the scope of an assignment (P1).

I was excited because it would be a different way of teaching, but I don't think it has much benefit in the distance education process as in other courses (P5).

By examining the citations, it is understood that it "*takes some time*" to do the activities and the use of an e-portfolio will "*not be beneficial*" in the "*distance education*" process. Accordingly, it can be said that only two of the participants expressed negative thoughts about the process of using an e-portfolio. In addition, while one of the participants had completely negative thoughts, it was understood that the other had negative thoughts along with positive thoughts.

Findings on the relationship between self-efficacy beliefs and academic achievement levels: Correlation analysis was conducted to determine the relationship between the scores obtained from the sub-dimensions of the self-efficacy belief scale of pre-service teachers and the academic achievement test.

The relationship between the sub-dimensions of the scale of self-efficacy beliefs regarding the teaching process and the academic achievement post-test scores is given in Table 6.

Table 6

The Correlation between the Sub-Dimensions of the Self-Efficacy Beliefs of the Pre-service Teachers Regarding Teaching Process and the Academic Achievement Post-Test

	Planning	**Implementation**	**Evaluation**	**Achievemen posttest**
Planning	1	0,83**	0.72**	0.29*
Implementation		1	0.72**	0.23
Evaluation			1	0.24
Self-efficacy total				0.27*
Achievement posttest				1

*p<0.05 **p<0.01

When Table 6 is examined, it is seen that there is a positive and close to middle-level significant relationship between the planning sub-dimension obtained from the self-efficacy beliefs scale of the pre-service elementary teachers regarding the teaching process and their academic achievement post-test scores (r= 0.29, p<0.05). There is a relationship among the sub-dimensions of the self-efficacy beliefs scale related to the teaching process. According to this; a positive and high relationship between planning and implementation (r= 0.83, p<0.01), a positive and high relationship between planning and evaluation (r= 0.72, p<0.01), positive and high relationship between the implementation and evaluation (p=0.72, p<0.01). Among the sub-dimensions of the scale of self-efficacy beliefs regarding the teaching process, there was a positive and non-significant low correlation (r= 0.23, p>0.05) between implementation and academic achievement post-test scores. It is seen that there is a positive and non-significant low correlation (r= 0.24, p>0.05) between evaluation and the academic achievement post-test scores. It is seen that there is a positive, low and significant relationship between the post-test scores obtained from the self-efficacy beliefs scale regarding the teaching process and the academic achievement post-test scores (r= 0.27, p<0.05). Accordingly, it can be said that as the self-efficacy of the pre-service teachers in the group who are exposed to e-portfolio applications in the teaching process increase, their academic success also increases. It is seen that the highest relationship is between the planning and implementation dimensions, and the lowest relationship is between

implementation and academic achievement. Based on these findings, a simple linear regression analysis was performed to reveal the degree of influence of the relationship between the variables in the model, and the results are given in Table 7.

Table 7

Linear Simple Regression Analysis Results for Predicting Academic Achievement

Variable	B	Standard error	Beta	T	p
Constant	52.86	16.57		3.19	0.00*
Self-Efficacy	0.22	0.10	0.27	2.15	0.03*
R=.27	R^2=.07				
F(1,59)=4,61	p=.03				

*p<0.05

When Table 7 is examined, it is seen that self-efficacy in the teaching process is a significant predictor of academic achievement (R = .27, R^2 = .07, F (1.59) = 4.610, p<.05). It can be said that 7 % of the total variance regarding self-efficacy for the teaching process is explained by academic achievement. As a result of all these findings, the status of the research hypotheses and research questions are given in Table 8.

Table 8

State of research hypotheses and research questions

	1	2	3	4
Hypothesis	+	+	+	+
Research question	+	+	+	+

According to Table 8, it is understood that positive findings were obtained for all of the research hypotheses and questions.

Discussion

The first of the research hypotheses claim that the use of e-portfolio positively affects pre-service teachers' self-efficacy beliefs. The data obtained within the scope of the "Does the use of e-portfolio cause a significant difference in the self-efficacy beliefs of pre-service elementary teachers' regarding the teaching process?" research question used to prove this hypothesis: It can be said that the self-efficacy beliefs of the pre-service elementary teacher in the control group regarding the teaching process are more positive in terms of self-efficacy beliefs before the research. At the end of the study, a significant difference was found between the experimental and control groups in terms of self-efficacy belief in favor of the experimental group. In other words, it can be said that the self-efficacy beliefs of the pre-service teachers in the experimental group changed positively as a result of the research. In addition, this result was supported by the analysis of the qualitative data of the research. According to this; In the process of using an e-portfolio, it has been determined that there are positive factors on the learning motivation and self-regulation of the pre-service teacher due to factors such as the regularity of the activities, the systematic functioning, the use of technology, and feedback. It can be said that these factors have a positive effect on the development of pre-service teachers' self-efficacy. When all the findings are examined, it is

seen that the first hypothesis of the research was confirmed. As a matter of fact, Ayan (2010) and Meyer et al., (2011) stated in their studies that there was an improvement in teachers' individual abilities such as self-regulation and self-management as a result of using e-portfolios. These findings are similar to the research findings. In addition, in the study of Klecka et al., (2008), e-portfolios were used in the process of forming the identities of teacher educators and defining teacher educators. In addition, Bartlett (2002) stated in his study that the e-portfolio used by pre-service teachers in the process of student evaluation has advantages such as opportunities to use technology, the opportunity to obtain and present information, and evaluation. These data support the findings obtained in the research. Finally, in the study of Gök and et al., (2020), it was determined that the primary school teachers exhibited positive views on the use of portfolios. In addition to all these, similar findings were found in the qualitative findings of the study. Apart from all these data, it was determined in Bahçivan & Aydin (2020) studies that pre-service teachers have high self-efficacy beliefs before starting the profession. Clark (2020) found in his study that the self-efficacy beliefs of pre-service teachers also decreased a little after they started to work.

The second of the research hypotheses claim that the use of e-portfolio positively affects the academic achievement of pre-service teachers. The data obtained within the scope of the " Does the use of e-portfolio cause a significant difference in the academic achievement levels of pre-service elementary teachers'?" research question used to prove this hypothesis: While there was no difference between the experimental and control groups in terms of academic achievement before the research, it was determined that the academic achievement of the experimental group pre-service teacher changed positively as a result of the research. Likewise, it can be said that in the process of using qualitative findings, pre-service teachers have achieved success in PPSE trials, which are an indicator of their academic achievement, as they see different questions with different activities, make repetitions, and receive immediate feedback with usage e-portfolio. These findings confirm the second hypothesis of the study. Similarly, in the studies of Ayaz et al., (2020), it was determined that the use of e-portfolios of eighth-grade students had a positive effect on their academic achievement. In addition, Zeybek (2019) determined that the academic achievement of high school students changed positively as a result of their use of e-portfolio. In addition, Akgün & Şahin Kölemen (2020) found that the academic skills of associate degree students using e-portfolio activities improved positively. These findings are similar to the research findings. In addition to these studies, Painter & Wetzel (2005) and Strawhecker et al., (2007) determined that pre-service teachers' success in getting a job is easier as a result of using an e-portfolio. In addition, in the study of Shepherd & Hannafin (2008), it is known that as a result of using an e-portfolio, it helps pre-service teachers to evaluate and change their perceptions of success, examine student behavior more deeply, and to guide the decision-making process. The similarity to the qualitative findings of the research, Çukurbaşı & Kıyıcı (2018) found that primary school teachers had positive views on their portfolio use.

The third hypothesis of the research claimed that the pre-service teachers had positive opinions about the effect of using e-portfolio in the teaching process on their self-efficacy beliefs and academic achievement. The data obtained within the scope of the "What are the views of pre-service teachers' on the effect of using e-portfolio in the teaching process on self-efficacy beliefs and academic achievement?" research question used to prove this hypothesis: Accordingly, pre-service teachers think that the use of e-portfolio in the teaching process has a positive effect on self-efficacy and academic achievement. Similarly, many research findings in the literature have determined that the use of e-portfolios in the teaching process has a positive effect on academic achievement and self-efficacy (Bartlett, 2002; Kloser et al., 2020; Shepherd & Hannafin, 2008).

The fourth hypotheses claim that there is a linear relationship between pre-service teachers' self-efficacy beliefs and their academic achievement. The data obtained within the scope of the "What is the relationship between pre-service teachers' self-efficacy beliefs and their academic achievement levels?" research question used to prove this hypothesis: It was determined that the self-efficacy belief increased in the experimental group in which the e-portfolio application was used, which positively affected academic achievement. These findings confirm the third hypothesis of the study. It is known that as a result of the e-portfolio application, it affects the development of high-level mental skills of the participants (Ayan & Seferoğlu, 2011; Meyer et al., 2013; Polat Demir & Kutlu, 2016). As a result of the use of e-portfolio in the research process, the development of pre-service teachers' self-efficacy beliefs and their academic achievement can be considered

high-level mental skills. In addition, similar to the research finding, Czocher et al., (2020) determined in their study that students' self-efficacy levels were effective in achieving more gains. In addition, Kloser et al., (2020) showed that the use of e-portfolios can be important tools for teachers to think.

Conclusion and Recommendations

It was determined that the use of e-portfolio positively affected the self-efficacy beliefs of pre-service teachers. Accordingly, it was determined that there was an increase in the self-efficacy beliefs of the pre-service teachers as a result of their use of e-portfolio. It can be suggested that technology-integrated applications such as e-portfolio can be used to increase self-efficacy beliefs. Self-efficacy beliefs of pre-service teachers as a result of their use of e-portfolio in all educational processes are also a matter of curiosity.

It has been determined that the use of e-portfolio positively affects the academic achievement of pre-service teachers. Based on these findings, it was determined that the academic achievement of the pre-service teacher increased as a result of their use of e-portfolio. E-portfolio applications are recommended in order to achieve success in the preparation of pre-service teachers for central exams, especially in assessment and evaluation. The use of e-portfolio can be recommended to increase or determine the success of students at different grade levels (middle school or high school) in central exams.

As a result of the research, it was determined that the pre-service teachers thought that the use of e-portfolio in the teaching process had a positive effect on their self-efficacy belief and academic achievement. This result has a positive effect on the necessity of using e-portfolio in teaching processes.

A linear relationship was found between pre-service teachers' self-efficacy beliefs and their academic achievement. Accordingly, a positive, significant, and positive relationship was determined between the self-efficacy beliefs and academic achievement status of the experimental group pre-services teacher as a result of their e-portfolio use. In the studies aimed at increasing the academic achievement of pre-service teachers in the education-teaching process, it is recommended to first determine the self-efficacy beliefs and keep them high. It is thought that many positive developments will be experienced in different aspects as a result of the development of self-efficacy of students or pre-service teachers in the education process.

As a result of the research; it can be said that all of the research hypotheses have been proven and thus the answers to the research questions have been determined. In light of these findings, it has been determined that the e-portfolio can be used in the teaching process and has a positive effect on academic achievement with self-efficacy belief.

Some suggestions for future research on e-portfolios and points for repeaters to consider include. More attention needs to be paid to data privacy and security issues related to the use of electronic portfolios. Research should address issues such as how to protect student data, the effectiveness of authorization processes, and the applicability of data security measures. The social and egalitarian dimensions of electronic portfolios should be further explored. Research should examine whether e-portfolios provide equal access and opportunities among different student groups, the effects of the digital divide, and the impact of socioeconomic factors on e-portfolio use.

If other researchers want to do a similar study, it is recommended to pay attention to the following points. Participant selection in the study should be done carefully. Researchers should select an appropriate group of participants, taking into account the characteristics of the participants (age, gender, education level, etc.) and their experience in using the e-portfolio. Research can be conducted on how e-portfolios can be integrated into learning processes and how they can be effective in areas such as students' learning motivation, self-efficacy, and creative thinking. It can also be explored how teachers can use e-portfolios for student assessment and teaching strategies. Research can be conducted on how e-portfolios can be used in different disciplines and how they are effective at various educational levels. For example, it can be examined how e-portfolios can be used in areas such as STEM education, arts, language learning, or vocational training.

Limitations of the study

This study is limited to 61 pre-service teachers and 14 weeks. It is assumed that participants present objective data. Actually, all information about the participants was presented to make this situation feel strong. It was assumed that the participants' internet access and computer use skills were equivalent during the 14-week period. In the research, the effect of e-portfolio application on self-efficacy and academic achievement was examined. The research is limited to e-portfolio, self-efficacy, and academic achievement factors. Other factors than these have not been examined. The hypotheses used in the research are one-way hypotheses prepared and integrated into positive results. The negative aspects of these hypotheses can also be addressed, but they are not taken into account as they are proven by the findings. E-portfolio is an important technical support for data protection and storage in the online education process, which is an alternative education approach. The biggest concern we have here is that all students do not have equal access to the internet, having a computer, phone or tablet, and infrastructure adequacy.

Compliance with Ethical Standards

Disclosure Statement

The authors declare that they have no conflict of interest. All authors have appropriate permissions and rights and also accept the order of authorship

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Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. On behalf of all authors, the corresponding author states that there is no conflict of interest.

Informed Consent

Informed consent was obtained from all individual participants included in the research.

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Capturing the Personal and Pedagogical Experiences of Faculty During Emergency Response Teaching at a Research University in Abu Dhabi

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Abstract

The purpose of this qualitative study was to examine the teaching experiences and emotional well-being of faculty at a research university in the United Arab Emirates (UAE). The study took place during Emergency Response Teaching due to the global pandemic and its implications on instruction and learning. A 60-question-line interview questionnaire was disseminated to 400 faculty members during the spring semester of 2020. 26 faculty members (6.5%) completed the interview questionnaire. Results showed evidence of a range of pandemic-related, negative impacts on the faculty's experiences and feelings. Many faculty respondents were challenged and frustrated in terms of being able to respond to a range of issues and themes identified in the study. The discussion focused on the development of preemptive approaches which might be developed for future use should a comparable situation arise.

Keywords: COVID-19, pedagogy, mental health, communication, Information Technology, student engagement.

Introduction

The two years of disruption by the global pandemic have seen sudden and unprecedented changes in how educational courses were delivered. Teachers and students across the world have had their academic world turned upside down by the COVID pandemic, which has been with us now since December 2019. The academic community has transitioned from a face-to-face classroom to a digital learning environment, which has brought about a myriad of challenges (Ndambakuwa & Brand, 2020). Those challenges have been many and varied, from meeting pragmatic needs

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to skill up on new technology and delivery platforms to navigate the vagaries of the internet, to addressing socio-psychological questions involving isolation, physiology, engagement, and motivation (Castelli & Sarvary, 2021; Schneider & Council, 2021; Schieman, Badaway, Milkie & Bierman, 2020). The whole concept of 'going to work'—and for our students, 'going to university'–involves changing one physical and spatial environment for another, each with its dynamics, expectations, culture, and parameters (Chaudhry, Paquibut, Islam & Chabchoub, 2021). The removal of this distinction creates obvious problems (Schieman et al., 2020). The entire process has been a baptism of fire for many of us teachers and the learners for whom we are responsible.

Communication is at the core of what we do and is based on a myriad of clues and signposts. Nonverbal communication, such as facial expressions and gestures, is a significant part of how we communicate as human beings; this form of communication has been radically affected by a switch to the digital environment. For example, the use of cameras in classes has raised issues of privacy and led to resistance from many students in different parts of the world (Chaudhry et al., 2021; Johnson, 2020). For teachers in our university, this issue of physical presence/visibility has been compounded by additional cultural, gender, and religious factors, which have resulted in most students not wishing to use their cameras at all (Hurley, 2020). The resulting need to rely on chat and voice has brought obvious limitations, added challenges and a new set of demands on the facilitation and interpersonal skills of instructors teaching in virtual class spaces. All of these factors have created a new academic environment that has been difficult for educators to adapt to and caused stress for many faculty members at our institution.

Web searches conducted within the Middle East region reveal that much of the research on emergency distance learning (EDL) focuses on pedagogy in the digital environment, best practices, techniques 'that work', software, apps, and foci of common interest. However, harder to find is a more phenomenological focus on a shared, lived experience which would give us more of an insight into attitudes, feelings, behaviors, and other psychological elements that have been clearly at play. Anecdotally, a recent, EDL virtual conference attended by one of the researchers in this study focused solely on the kind of factors in the opening sentence of this paragraph. This discussion is not so different from what occurs in 'normal' times, and perhaps provides a required comfort zone in times of uncertainty such as the pandemic. However, it seemed somewhat odd that the other question of, 'By the way, how are we all feeling?' was not addressed by attendees, even when the author placed a question to that effect in the chat.

This study, therefore, is an attempt to shed light on qualitative and experiential shifts occurring as a consequence of EDL related to student-teacher interaction and physical and mental issues prompted by the virtual learning environment. The study also seeks to examine feelings related to the absence of face-to-face teaching, and the social element of the physical work environment as discussed in the findings of Scheiman et al. (2020). This will enable the story of our faculty with respect to their experiences to be shared and allow us to describe and recommend preemptive measures that may prove useful should we find ourselves in a dire situation like this again.

The purpose of this study was to capture the lived experiences of faculty members at a university in the UAE and to assess the personal and professional challenges they encountered as they transitioned to emergency response teaching during the global pandemic. More specifically, it aimed to answer a single research question concerning ways in which distance teaching, conditioned by the pandemic, has impacted the emotional and psychological well-being of faculty in how they interact with students as compared to the face-to-face (F2F) environment.

Literature Review

The transition from in-person to remote learning has allowed instructional continuity during the global pandemic. However, it has been evident that interaction within virtual spaces has had its limitations for some fields, especially the arts, athletics, and experimental inquiries (Rapanta, Botturi, Goodyear, Guàrdia & Koole, 2020). The transition from face-to-face to online instruction has forced students, instructors, and college administrators across the globe to adapt to a new ecology of communication and teaching (Schneider et al., 2020; Schieman et al., 2021; Rapanta et al., 2020).

Our university environment reflects this current global reality (Hurley, 2020). On any given day, a teacher's job is beset with various challenges and stressors. These challenges have increased exponentially with the advent of mass distance learning and teaching resulting from the pandemic. The continuing prevalence of forced online learning in

schools and universities has placed a huge burden on teachers, deepening existing struggles while also creating new ones (Lassoued, Alhendawi & Bashitialshaaer, 2020; Rapanta et al., 2020; Schneider & Council, 2021). A drastic change in the educational system had to be adopted to maintain the progression of learning (Schneider & Council, 2021). Online learning, or distance learning, continues to be the most viable option during these unprecedented times (Qazi et al., 2021).

Although it is not a new teaching methodology, the forced, rapid shift from traditional to online learning has posed serious problems for students, teachers, parents, and policymakers. Through online instruction, learners are facing high levels of anxiety and loneliness, while also worrying about unexpected events that affect their academic journeys (Petrie et al., 2020). Similarly, teachers are struggling to adapt to the newly introduced digital platforms and perform their teaching duties in challenging settings. They are coping with increased stress, health concerns, uncertainties related to their jobs, and challenges of the working-from-home norm (MacIntyre et al., 2020).

Online learning was advocated to be implemented as a "strategic asset" in public colleges and universities long before the pandemic (Mccarthy, 2009; Seaman, 2009). Online learning is the necessary contingency plan to continue education in the event of an H1N1 pandemic (Allen and Seaman, 2010). It was observed that activities and programs that are based online have the capacity to be fully integrated into the educational system if all academic staff and personnel cooperate to achieve this mission. A major success criterion for such a large-scale integration is the availability of technologies and adequate resources for faculty and students (McCarthy (2009).

The assessment of online education depends in part on who is assessing it and the extent of their familiarity with it. Faculty with online teaching experience often praise it over traditional, face-to-face instruction, while those who have little to no experience with virtual modality have shown a negative attitude towards it (Seaman, 2009). However, this bias may not only be attributed to a lack of familiarity but may also relate to how teachers of different backgrounds view teaching and learning experiences.

In a recent study, Rapanta et al. (2020) investigated the pedagogical preparedness of teachers who have little or no experience in online teaching amidst the pandemic. The scope of the study was based on interviewing four experts in online learning, highlighting learning design and teacher presence. Designing the learning experience was linked to the context, tools and resources, concrete tasks, and the interaction between them. With a mix of design approaches encompassing synchronous and asynchronous modalities, the authors highlighted the importance of designing a learning activity that matches the expectations and capabilities of the students while considering technical variables, such as internet connection and access to appropriate technology.

Rapanta et al. (2020) have also advocated for teacher presence in the context of online learning, and have categorized it into cognitive, social, and facilitatory presence. Cognitive presence is mostly concerned with students' preparedness to participate effectively in online learning; social presence is attributed to the methods that teachers can use to maintain healthy student-student and teacher-student interactions; and facilitatory presence is mostly associated with the tools and resources used during online class activities.

Course delivery through distance learning can be challenging, especially for classes that require a myriad of activities and lab work. For example, Dietrich et al. (2020) investigated the challenges that the students of the Institut Nationale des Science Appliqués De Toulouse experienced during the lockdown. Over half of the students found it difficult to work on group projects via distance learning. The authors attributed this to many reasons, including a lack of motivation and participation in the group in the online context as well as difficulty in distributing tasks among group members. Regarding practical lab work, the students could not perform experiments in the lab, and hence, alternative methods should be explored and implemented. Typical lab work would include performing experiments, obtaining data, and analyzing results. When it was suggested to provide the students with pre-collected data so they would only need to perform the analysis, more than 60% rejected this approach; many students did not want to miss out on the "hands-on" experience at all (Dietrich et al., 2020).

Similar to group work, students find it difficult to effectively work together to provide a written report for laboratory activities. These reports are assessed, and assessment is generally acknowledged as a major challenge in online learning. Canceling some of the midterm exams and replacing them with homework sets yielded contradictory feedback from the students (Dietrich et al., 2020). Some of them perceived this as a positive change that served to release stress, while others claimed that exams during the semester helped them stay up-to-date and prepared for the final examination of the course. Self-regulation is claimed to be the key in such situations in which the students start to take responsibility for assessing what they have learned (Rapanta et al., 2020). Furthermore, asynchronous activities can aid students in

regulating and assessing their learning process, which is also believed to reduce time spent in long, synchronous sessions by learners and teachers.

In a 2009 study, Seaman (2009) found that faculty complained about the time it requires them to prepare teaching material for online classes versus traditional face-to-face classes. Additionally, among the faculty who have experience in developing online course material, 85 percent claimed that online class development takes "somewhat more" and "a lot more" effort than traditional classes (Seaman, 2009). In a more recent study, Dietrich et al. (2020) echoed the findings of Seaman, claiming that faculty spend more time preparing online lessons (Dietrich et al., 2020).

The main hurdle for the urgent and rapid implementation of online learning is the absence of infrastructure to support distance education. Not all countries have the same capacity to accommodate the implementation of advanced technologies for schools and universities. For example, internet services can be weak, thereby affecting class delivery. Such technical obstacles were highlighted by Lassoued et al. (2020) who explored the effects of the pandemic on the quality of distance learning in Arab universities, particularly Algeria, Egypt, Palestine, and Iraq. In their study, the authors observed that data security and privacy protection are persisting issues, especially in terms of online examinations. Additionally, there were concerns about cheating during electronic exams and the difficulty of confirming the identity of the examinees.

With the various stressors that emerged during the pandemic, coping mechanisms and strategies have become necessary to sustain a healthy learning process. MacIntyre et al. (2020) investigated coping and anti-coping strategies among language teachers to tackle various stressors, which include work-life balance, uncertainty about online teaching, and isolation, among others (Lassoued et al., 2020; MacIntyre et al., 2020; Rapanta et al., 2020). Coping strategies included planning, institutional support, active coping, positive reframing, emotional support, and acceptance. Avoidant strategies encompassed behavioral disengagement, denial, self-distraction, self-blaming, substance use, and venting. The authors found that coping techniques that were constructive and "approach-oriented" were the ones associated with positive outcomes (Lassoued et al., 2020). Conversely, negative psychological outcomes were associated with passive avoidance techniques, which would ultimately trigger more stress and negative emotions.

Theoretical framework

Given the shift from face-to-face to emergency response instruction, which necessitated the use of online teaching, this study is guided by the rise of the social network society. The social network society phenomenon was catalyzed by advancements in information technology and the subsequent increase in the use of the Internet throughout the world, revolutionizing various aspects of human connection.

From this standpoint, the social network society provides a logical framework for examining the three dimensions of interactions within our study: student-student, student-teacher, and student-content, which relates to the obvious interconnectedness of social, economic, and educational spheres (Castell, 2001). The study is also bound by the emerging theory of connectivism (Downes, 2005; Siemens, 2008), which focuses on the nature of learning in a multidimensional digital space.

Methodology

This qualitative study derived data from a 60-item interview questionnaire, which was made available to all faculty members at a top research university in the United Arab Emirates (UAE). All 400 faculty members were invited to participate in the study and respond to the online interview questionnaire. The researchers opted for the online interview questionnaire as the most effective and confidential method for gathering faculty insights during remote teaching. We considered face-to-face interviews, but due to the strict government guidelines concerning interpersonal interactions, these approaches were not deemed feasible at the time.

Participants

Of the 400 faculty members invited to participate in the online interview questionnaire, 26 (6.5%) completed it. Although it was a low response rate, these types of results have become a generalized and less discussed feature of the pandemic (de Konig et al., 2021). There is no straightforward answer as to what constitutes a reasonable sample size in

qualitative research, (Vasileiou et al., 2015). As Sandelowski (1995) states, the sample size should be enough to enable "a new and richly textured understanding of the phenomenon under study" (p. 183). This is certainly the case in our study.

Questions were grouped around the themes of Aydin's (2013) instructor-student interaction (ISI), Chakraborty and Nafukho's (2014) student engagement and motivation, Haythornwaite's (2006) communication and collaboration, and Filho et al.'s (2021) learning space and the use of technology, the emotional and psychological well-being of faculty. The questions were both open-ended and closed-end with similar prompts in the second-tier questions offering a range of adjectival choices focusing on emotions and psychological response. 27% of the questions permitted developmental input of qualitative data through follow-up questions.

The researchers made a conscious decision to not use Likert scales because they would have limited the study to quantitative data. As La Marca (2011) notes, Likert scales can be unidimensional and could fail "to measure the true attitudes of respondents" and ". It is not unlikely that people's answers will be influenced by previous questions or will heavily concentrate on one response (agree/disagree)."

The survey was piloted with a group of 14 faculty members with research expertise and was also reviewed and approved by our institutional review board (IRB). This quality control process and feedback resulted in minor structural and phrasing changes, which increased face and content validity (Ketchenham and Pfleegar, 2008). Data was coded and five themes emerged (shown in Figure 1 below).

Results

The purpose of this study was to capture the lived experiences of faculty members at a university in the UAE and to assess the personal and professional challenges they encountered as they transitioned to emergency response teaching during the global pandemic. More specifically, it aimed to answer a single research question concerning ways in which distance teaching, conditioned by the pandemic, had impacted the mental and psychological well-being of faculty through their interactions with students as compared to the face-to-face (F2F) environment. As previously stated, survey interview responses were coded into five distinctive themes, summarizing the scope of this study and the various dimensions of pedagogies and interpersonal interactions that emerged during emergency response teaching (ERT) at our university.

The first theme illustrates the teaching and learning strategies that faculty sought to implement to sustain instructional continuity and communication with students. The second theme is concerned with learner presence, motivation, and engagement, which is highly important given the significance of physical separation during the pandemic. The third theme relates to the previous one as it focuses on communication and collaboration between members of the academic community, especially between faculty and students. The fourth theme illustrates the transition from in-person settings to virtual spaces using the learning management system and other adaptive technologies. The fifth theme, which has been highly debated in popular and scholarly discourses, focuses on the mental and emotional health of faculty as they navigate these unprecedented circumstances and the sudden changes in their roles and responsibilities.

Figure 1

Themes

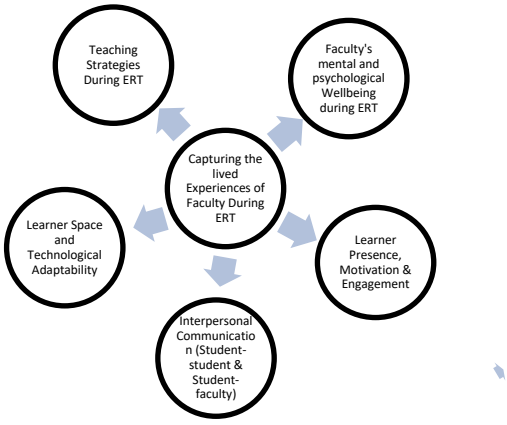

Figure 1 represents the five themes that emerged from analyzing the data collected through this study. The themes capture the faculty members' lived experiences navigating the unforeseen circumstances of the pandemic. A thorough analysis of the findings and testimonials is also presented.

Theme 1: Teaching Strategies and Motivation during ERT

Results from the survey responses revealed that 44% of respondents believe their teaching motivation within the Distance Learning Classroom (DLC) environment has changed when compared to pre-pandemic Face to Face Classroom (F2FC) instruction. For example, one of the respondents stated that their motivation has diminished due to lack of student interaction: "I used to be motivated to interact with my students F2F but now I can only interact with them digitally, which doesn't carry the same energy.*"* Additionally, 85% of respondents indicated that they do not have the same opportunity to engage with students in a DLC as in an F2FC. One faculty member stated, "It is difficult to teach when you cannot see the other people's faces. Our students don't turn on the cameras, so it is alienating that I feel like I am just talking to the computer screen.*"* Another faculty member noted the challenge of forming groups in the DLC: "In the F2FC, I usually walk around the classroom, engaging students, reading their work, conferencing with groups*."*

When asked about teamwork and collaboration, another faculty member expressed their struggle to accurately assess student comprehension in the DLC environment: "*. . . This is next to impossible in a DLC. Without eye contact, facial expression, I cannot understand if students understand the subject and they are really interested in it."*

Theme 2: Learner Presence, Motivation, and Engagement

When asked about the difference in student motivation, 70% of respondents acknowledged that the ways they motivate students in the DLC are different than the F2FC, because the former creates an added level of anxiety and reservations. One faculty member expressed this uncertainty by saying, "Dealing with the unseen is totally different. I make more effort and try my best to motivate the students, but unfortunately, I confess that the student motivation level has dropped dramatically. Multimedia - YouTube, IG Podcasts I make for them flipped classroom prerecorded lectures to watch before class*."*

In terms of independent learning and self-motivation, 84% of faculty respondents believe that students in the DLC do not seek as many opportunities for engagement with the learning process as they do in the F2FC. This decline in student engagement—one measure of effective teaching and learning—has had negative emotional impacts on faculty. When asked about how they felt about student motivation, 61% of respondents expressed disappointment and 57% articulated frustration. This information aligns with those of previous studies about challenges associated with student engagement and motivation (Guth, 2020; Feldman, 2021; Linde et al., 2021). These findings also underscore the disruptive nature of the pandemic vis-à-vis the various functions of life, particularly within academic spheres.

Theme 3: Interpersonal Communication and Collaboration

Interpersonal communication relies on gestural and facial cues, which can be dismissed or difficult to replicate in virtual spaces. When asked about the use of digital devices, such as cameras and microphones, 96% of respondents indicated that students in the DLC never use a camera in the classroom (Johnson, 2020; Hurley, 2020). While face-to-face interactions allow for dynamic interpersonal communication, communicating in virtual spaces is both more limiting and challenging.

Related to this theme, 48% of respondents indicated that sustaining momentum in the DLC is more difficult than the F2FC. One respondent wrote, "It is almost impossible to gauge the level of engagement and understanding of the students, so sustaining momentum becomes difficult.*"* Another faculty member echoed this feeling: "Well, it's very easy to 'lose' your audience--they must somehow stay engaged in the lecture for momentum to be sustained.*"* Highlighting the absence of the "human touch" when interacting in the DLC, one faculty member stated, "The absence of physical contact reduces the degree of paralinguistic factors in communication such as humor, individual reciprocated responses and other human factors.*"* Moreover, technical issues, such as high server demand and weak Internet signals, sometimes affected connectivity, and thereby the learning management system (LMS), especially when teachers and students were using their cameras (Castelli & Savery, 2021).

Theme 4: Learning Space and Technological Adaptability

Other challenges arose due to ERT and the immediate need to shift to virtual instruction using LMS and other adaptive technologies with which people were unfamiliar. Educators everywhere found themselves in an emergent situation that required them to adapt quickly and learn new DLC technologies to effectively deliver education online. In addition, working from home added other sets of challenges, such as finding a suitable workspace and securing a steady Internet connection.

The faculty respondents' experiences adapting to DCL technology were varied, and influenced by their readiness to transition to online teaching. When asked about their experience adapting to DLC technology, 70% of the respondents said they faced some or a few challenges; 16% found the transition to be quite challenging despite 87% of respondents expressing satisfaction with their existing preparation. Even teachers who were highly prepared and accustomed to online technology experienced some difficulty. One of the respondents noted, *"*I was already pretty good with technology, so some of the same things I used in the classroom, I could use online--like Google Docs, etc. I tried to make my teaching style the same, but it is a bit challenging.*"*

Moreover, for those who were not ready or inexperienced, the support available to help a smooth transition was instrumental in overcoming any technological barriers, particularly for those who needed to change their teaching style for the DLC. 55% of respondents indicated that using the digital platform had significantly affected their teaching style. While 45% of respondents believed that the challenges they faced would have been easier to overcome if they were on campus, the remaining 54% were either unsure or did not agree. With respect to the support provided, 75% were generally satisfied with the support provided.

Adapting to the environment where physical changes were required revealed a variety of results and perspectives. For example, 41.67% found it challenging, and 48.15% of respondents believe that physical separation is difficult to deal with. Lack of physical interaction with colleagues is considered a "motivation killer" to some as explained by one of the respondents:

> "For me personally, 'my home is my home' and 'my work is my work' and I like to keep the two distinct. A structured working day in a work environment is important to me. To be able to go home and relax with my family at the end of the working day is similarly important. The current situation has really been damaging to achieving a proper work-life balance."

Theme 5: Faculty Emotional and Psychological Well-being during ERT

A decline in student engagement and motivation is coupled with disappointment and frustration from faculty members who are responsible for guiding their pupils and keeping them engaged throughout the learning process. When asked about how lack of student motivation impacted their emotions, 61% of faculty respondents articulated disappointment and 57% expressed frustration. Additionally, 88% responded that the DLC requires more multitasking than the F2FC due to the various tools and strategies needed to engage students and ensure instructional continuity.

Among those who responded to this question, 65% indicated that the process of multitasking raises their stress level. Similarly, and saliently, responses to questions about lack of engagement, student participation, and attempting to motivate students, most often featured the following emotions: "frustrated," "disappointed," "resigned," "de-motivated," and "annoyed.". Mental tiredness after online classes was also greater for most respondents (59%).

With respect to pastoral support for faculty members, 48% of respondents felt it was not provided, 18% described it as "inadequate," and others were unaware of this resource. One respondent commented, "I was not aware of any pastoral support for lecturers." Another faculty member noted, "There was some encouraging emails, but I do not think systematic pastoral support was given. But, I didn't need any." Separation of work and personal life was another related issue with 55% of respondents agreeing that the absence of in-person socializing in the traditional work environment was a difficult challenge to navigate. One respondent stated: "I miss my colleagues and all the informal opportunities to talk about work, life, etc." Another commented, "Not having discussions and interactions with colleagues and students is difficult." In relation to anxiety, 37% of respondents indicated it being higher for them in the ERT context than when on campus; 40% acknowledged fear of failure was higher; 66% responded that disconnect from the classroom was higher; and 40% attested to mood changes being higher.

Discussion

The transition from in-person to remote learning has allowed for administrative and instructional continuity during the two years of the global pandemic (Guth, 2020). Institutions of higher learning in the UAE and around the world have created urgent policies and practices to ensure the safe delivery of educational programs in accordance with government mandates (Chaudhry et al., 2021; Linde et al., 2021). However, it has been evident that interaction within virtual spaces has created a myriad of andragogical and psychosocial issues given the new ecology of interaction between the college learner and the educator (Allen and Seaman, 2013; Ke and Kwak, 2013). Findings from this study align with previous research and suggest that the COVID-19 pandemic has impacted various functions of higher education, including instructional strategies, student engagement, interpersonal communication, and overall academic support (Dietrich et al., 2020; Linde et al., 2021).

Based on the identified themes—emergency response teaching strategies, learner presence and engagement, interpersonal communication, learning space, and faculty emotional and psychological well-being--it is evident that the transition from F2FC to DLC has altered the role of the instructor, the learner, and the environment in which they operate (Filho et al., 2021). The absence of in-person interaction has "forced" faculty to think of newer and more innovative ways of engaging "invisible" learners, which has been physically and emotionally draining (Chaudhry et al., 2021; Filho et al., 2021). The fact that online instruction had previously not been used at the institution where this study took place may also suggest that faculty faced an added layer of complex challenges compared to institutions that were already offering distance learning programs. Thus, the level of training that was required for the transition to distance learning was much higher.

One common concern that faculty members expressed in their responses to the interview questionnaire is the lack of student engagement during synchronous instruction, which echoes Chaudhry's (2021) findings. Additionally, respondents expressed frustration with the lack of interpersonal interactions, which is critical to establishing a sense of community and a means of gauging engagement (Sattar, 2017; Vrba and Mitchell, 2019). These findings echo those of other recent studies about the challenges of engaging students using learning management and other videoconferencing tools (Linde et al., 2021; Taberski, 2020). During EDL, much of the discussion amongst teachers has focused on mastering unfamiliar platforms, software, and programs, which is clearly understandable.

In this study, however, these were not necessarily the predominant issues preoccupying faculty; teachers were more concerned with the absence of the human factors and community, especially engagement, that they had been accustomed to in the F2F classroom. Currently, discussions among faculty colleagues often focus on how these aspects might be "recovered." However, it may be that such a recovery is simply not possible and we are chasing a chimera. The digital learning environment is not temporary. Moreover, it is profoundly different from the F2F classroom Wand future discussion needs to reflect that reality. As instructors are the ones who craft the syllabus and deliver the classes, there may be a natural tendency among scholars to look at the situation from the teacher's point of view. However, how might the findings of this study have changed had it been conducted with the participation of students? Are student voices being heard and intentionally incorporated into emerging scholarship in teaching and learning since the arrival of COVID?

Based on the experience of the last two years, a discussion between educators and students to identify a collaborative approach for future online learning and teaching could be a useful way forward (Gray and Halbert, 1998). Thoughtfully involving learners in aspects of the education process, such as team teaching, syllabus planning, staging, lesson structure, delivery, assessment protocols, and materials design could be part of this more collaborative and inclusive approach and might well result in higher buy-in from students. Empowerment, after all, is surely a motor for engagement as Bekirogullari (2019) reminds us. Future research might usefully focus on the student experience of this type of learning, and thereby, bring more voices to the discussion to enrich scholarship and improve the quality of education.

Implications and Conclusion

Globally, teacher levels of anxiety and stress noticeably increased during the lockdown and online teaching, (Ozamiz-Etxebarria et al., 2021), and support and pastoral care mechanisms were often not in place (Chaudhry et al., 2021). The speed of the spread of the pandemic and its unpredictable nature left educational institutions across the globe

understandably unprepared to continue their services as the first response tended to logically relate to physical safety. Consistent with the findings herein, our study showed faculty concern about pastoral support. Providing simple support mechanisms such as telephone, online, or face-to-face access to informal counseling, peer support groups, and other forums is especially important in light of research that psychological effects on teachers and can be long-lasting (Holmes et al., 2020; Linde et al., 2021). Overall, the study captured the vulnerability of traditional F2FC instruction considering the global pandemic and other potential disruptors such as human conflict, natural disasters, etc. While the educational community, including the university where this study was conducted, might return to the traditional F2FC, the pandemic has forever altered teaching and learning.

One of the limitations of this study was the absence of in-person interviews due to circumstances. Another limitation of this study is the reduced response rate (6.5%), which was due in part to the added workload and fatigue that faculty were enduring during the time of this study (De Koenig et al., 2021). Given these limitations and the nature of the themes that emerged, future studies should consider the challenges that faculty teaching at top research universities have revealed and focus on individual and institutional mitigation processes. It is also important to investigate whether the lessons learned have created a new educational culture that is equipped with emotional, andragogical, and instructional skills to address future challenges and disruptions. It is equally important for future studies to consider the value added from transitioning into distance learning, particularly as it relates to the incorporation of new technologies that are conducive to effective teaching and learning for both the F2FC and DLC.

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The Governance and Management of Higher Education in the Commonwealth of Asia: Sharing the Asian Experience for the Common Good in the Commonwealth of Africa

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Abstract

The purpose of this article was to critically explore the experiences and lessons of governance in higher education systems in the Commonwealth of Asia, and most importantly how these experiences and good practices can be applied to the governance and management of higher education in Commonwealth nations, especially in the Commonwealth of Africa. In order to address the purpose of this research study, systematic secondary research was conducted through a keyword search strategy. Using the gathered data, discussions were made on the various governance and management aspects in three Commonwealth Asian countries namely Malaysia, Singapore, and India in aspects and issues such as university autonomy, quality assurance, university-based research development, funding, institutional differentiation, and governance reforms proved salient for discussion. It is important to note that this article is not attempting to address higher education across geopolitical contexts by comparing governance practices between Commonwealth Africa and Commonwealth Asia; instead, it aims to share good practices for the common good and to generate a contextual application of higher education governance practices between the Commonwealth of Asia and the Commonwealth of Africa.

Keywords: Africa, Asia, Commonwealth, Governance, Higher Education, Management

Introduction

Effective governance in higher education is an important aspect and issue that policymakers should take into consideration, given that governance of higher education systems is critical to the ability of a nation to produce the necessary human capital (David et al., 2018). Higher education has seen significant changes and reforms over the past

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several years, with such reforms focusing on various changes, from instigating new ways of providing higher education (e.g. e-learning), to expanding the capacity of higher education systems to continuous internationalization of higher education (Zajda & Rust, 2021). With such reforms in mind, transformations in the governance and management of higher education systems worldwide also occurred. However, some Commonwealth African countries, such as Nigeria, Ghana, South Africa, and Uganda, are still facing issues concerning higher education governance. For example, in Nigeria, the Academic Staff Union of Universities (ASUU) remained steadfast in their engagement in an ongoing strike to put pressure on the federal government to address various issues that hinder the 'survival and sustenance of public university education and autonomy'. Issues the union accentuated during their strike addressed: the need for better accountability and good governance of various public universities, withholding of union members' salaries, dilapidating infrastructures of public universities, and more. Such issues could have significant implications on the quality of education in public universities, as well as university autonomy (Nigerian Tribune Online, 2020). Empirical studies have highlighted the importance of proper management and governance practices on the quality of education and poor governance could lead to the erosion of autonomy (Olorunsola, 2018).

In light of this, the purpose of this article is to critically examine the practices in governance and management of higher education systems in some Commonwealth Asian countries, particularly Malaysia, Singapore, and India to raise awareness on how lessons from these nations can be used to inform the Commonwealth of Africa. The study chose the Commonwealth of Asia and Africa as the source and recipient of good practice in higher education governance, respectively, for one reason – the Commonwealth of Asian and African countries are members of the Commonwealth of Nations, or simply the Commonwealth, with shared common roots as former British colonies.

The Commonwealth of Nations is a political, voluntary association of 54 sovereign states, and most members are former British colonies or dependencies of those colonies. Voluntary association with the Commonwealth enables members to gain joint support and coordination towards achieving international goals. The members of the Commonwealth, which are independent sovereigns, shared commonalities, particularly being ruled by the British Empire during the colonial period (Commonwealth, 2020). Commonwealth Asian countries are a mixed group of nine countries: varying in size from Singapore to India (Tahir, 2001), and Commonwealth Africa is comprised of 21 countries: Botswana, Cameroon, The Gambia, Ghana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania Togo, Uganda, Zambia, and Zimbabwe.

The purpose of the Commonwealth of Nations was to ensure that their member governments will share the same economic, political, environmental, and societal goals. Given such relationship among commonwealth members, it raises some questions as to why some member countries lag in terms of development in higher education, especially concerning governance.

The following research questions will be addressed in this article:

- What are the higher education governance trends in Malaysia, Singapore, and India?
- How did Malaysia, Singapore, and India overcome challenges in governance aspects such as university autonomy, quality assurance, funding and access?
- What lessons can Commonwealth African countries take away from the governance experiences of Malaysia, Singapore, and India?

Literature Review

Dimensions of Good Governance in Higher Education

The term governance has been a common concept within the public sector, as well as in social sciences, with several empirical and theoretical studies exploring this concept. However, governance can be complex and often times abstruse and can vary depending on the field of knowledge it is applied to (Ysa et al., 2014). Typically, governance can pertain to the interactions among the governments, stakeholders and non-government and non-profit institutions through which the policy

decision-making process is governed and executed (Fukuyama, 2013). It is the political process that encompasses goal setting and executing actions for achieving such goals (Magalhaes et al., 2013).

In the context of higher education, governance refers to the approach in which higher education institutions are organized, being able to operate internally, to secure the objectives of higher education to serve the common good while sustaining and strengthening the trust of the public in such institutions (Reale & Primeri, 2015). A key element of quality higher education is good governance (Zaman, 2015). Good governance refers to a set of principles, practices, and processes that ensure the effective, responsible, and ethical management of higher education institutions. It encompasses the mechanisms through which decisions are made, policies are formulated, resources are allocated, and institutional goals are pursued. Higher education governance can be a complex topic, having to consider the different dimensions or aspects that are taken into consideration for a 'good' governance in higher education to be realized. The indicator of good governance include transparency and accountability, stakeholder participation, ethical and responsible leadership, quality assurance and continuous improvement, and equity and inclusivity (Hidayah et al., 2020). Higher education is better illuminated by applying a variety of perspectives (Gornitzka et al., 2020).

Autonomy of the University

Autonomy is a major dimension within the study of higher education governance. Autonomy, in its broad definition within the higher education governance context, pertains to the opportunity and the capacity of the higher education institution to carry out decision-making processes and implement actions of its own choosing in pursuing its missions and goals (Mandey, 2004). Autonomy of university institutions can involve academic freedom in terms of the study programmes being offered, the freedom to decide on the organizational structure, the opportunity to make decisions concerning financial aspects (e.g. tuition fees), and/or autonomy in making decisions concerning personnel management (Rayevnyeva et al., 2018). In fact, university autonomy is a basic right of higher education institutions (UNESCO European Center for Higher Education, 1992).

Quality Assurance

Another major dimension of good governance in higher education is quality assurance because governance and quality assurance in higher education are closely linked (Gornitzka et al., 2020). There are various definitions of quality assurance within the higher education governance context. As per UNESCO-IIEP, quality assurance is the 'continuous process of evaluation, monitoring and improvement of the quality of the overall higher education system, institutions or programme' (2016, p. 2). It is a mechanism used at a strategic level to manage higher education institutions, especially concerning strategic planning for safeguarding and improving quality of education and other activities carried out by universities and/or higher education intuitions (Majstrovic et al., 2010). Quality assurance is of great importance in shaping higher education systems in many countries, having to consider the rapid increase of student enrolment and diversification of institutions (e.g. increasing number of private higher education institutes) (Darwin & Lewis, 2005). This results in quality assurance processes being of high priority for higher education stakeholders (Anane & Addaney, 2016).

Governance Models in the Commonwealth of Asia

To further explore the governance models of higher education systems in the Commonwealth of Asia, it is important to review relevant studies that shed light on the specific approaches and practices adopted in this region. While the existing literature has provided valuable insights into the dimensions of good governance in higher education and the importance of autonomy and quality assurance, it is essential to expand the scope of the review to encompass studies focused on the governance models implemented in Asian countries.

One study that examines the governance models of higher education in Asia is conducted by Lee and Lee (2019), who analyze the governance structures and practices in a diverse range of Asian countries, including India, China, Japan, and Singapore. Their research explores the role of government intervention, the autonomy of universities, and the involvement of various stakeholders in decision-making processes. By examining these governance models, the study contributes to a better understanding of the unique characteristics and challenges faced by higher education systems in the Commonwealth of Asia.

Another relevant study by Chen and Wu (2018) investigates the governance practices of higher education institutions in Southeast Asian countries, such as Malaysia, Thailand, and Indonesia. The authors delve into the mechanisms of decision-making, the role of regulatory bodies, and the relationship between universities and the government. Their research offers valuable insights into the governance frameworks employed in this specific subset of Asian countries, providing a comparative analysis that can inform the discourse on higher education governance in the Commonwealth of Asia.

By incorporating these studies and others that specifically examine the governance models of higher education systems in the Commonwealth of Asia, a comprehensive understanding of the Asian experience in governance and management can be achieved. These studies contribute to the broader discussion on good governance in higher education and provide valuable insights for the Commonwealth of Africa as it seeks to learn from the experiences of Asian countries in shaping its own governance practices.

Challenges in Commonwealth African Higher Education Governance

With many of African nations continued to develop and experience fast paced population growth such as Nigeria for example, governments of such countries are continuously facing struggles when it comes to governance of their higher education systems (-). There have been studies in the past that have explored the challenges facing Commonwealth African countries when it comes to governance in higher education, especially concerning autonomy and quality assurance. For instance, Ajayi and Awe (2010) highlighted that autonomy of Nigerian universities is hindered by the continued interference from the government, further affecting universities' work and functions in teaching, research and others. Nigerian universities were also found to have difficulty in financial autonomy due to the 'pseudo-welfarist policy' of the government banning payment of tuitions without providing sufficient financial support to the universities. Similar issues on university autonomy were also found in Ghana, in which the academic community, and the higher education institutions were dissatisfied about their continued conformance to the rules and regulations forced onto them by the ministries and the government departments (Owusu-Ansah, 2015). In South Africa, the bureaucratic structures imposed by the government limits South African universities to decide on which programmes to offer, on the teaching strategies, and on which programmes will get funded by the government (Kori, 2016).

Likewise, higher education institutions in some Commonwealth African countries are facing problems when it comes to quality assurance, as well as higher education access. For instance, many Nigerian Universities are having difficulty in quality assurance due to various underlying causes, including under-funding, increased enrolment rates, inadequate physical facilities and poor management (Rowell & Orighofori, 2018). In Ghana, despite the significant improvements in the establishment of external quality assurance mechanisms, challenges are still evident, from inadequate quality assurance regulators, irregular performance of institutional audits, and others (Swanzy et al., 2018). In addition, Commonwealth African countries are facing problems in relation to equitable access to higher education, given the fast-growing population of these countries (Mahabub, 2014; Guerrero, 2014). This has been largely due to limited resources and increasing demand (Mohamedbhai, 2014).

Methodology

In order to address the research questions of this paper, the research focused more on exploring the higher education governance practices and experiences of Commonwealth Asian countries through literature review. Systematic research was conducted considering the vast information that is available from sources concerning the topic being investigated. To gather data sources, a simple keyword strategy was adopted, involving the use of certain keywords and/or combination of keywords such as 'higher education governance', 'university autonomy', 'Malaysia', 'India', 'Singapore', 'quality assurance', 'funding', 'access', and others. Through analyzing the data sources, the higher education governance practices and experiences of aforementioned countries were shown, which can be adopted in higher education in Commonwealth African countries.

In collecting sources, the following selection criteria was taken into account: (1) published within 2010 to 2020, (2) either be journal articles, governmental documents, or non-government published articles, and (3) partially or fully tackle governance issues (e.g. autonomy, quality assurance, funding and access) in higher education in Malaysia, India, or

Singapore. Malaysia, India, and Singapore were chosen for this current study as they also faced problems with university autonomy, quality assurance, funding and access in the past and were able to carry out reforms to improve higher education governance and address the aforementioned governance issues. A total of 41 articles were gathered and selected for the research. A simple synthesis of the information from the gathered secondary sources was conducted, organizing data and information using themes representing the aforementioned higher education governance practices and ideas.

Results

An Overview of Higher Education in Commonwealth Asia

Higher education in many countries in Asia, especially in South, East, and Southeast Asian regions, experienced significant expansion, which resulted in a diversified system encompassing a variety and types of institutions operating in the system. The diversification of higher education in the region allowed for many countries to have the capability to expand and respond to the social and economic needs and demands for higher education (Ratanawijitrasin, 2015). Besides the continued diversification of higher education, internationalization of the system in Asia was also observed, in which transnational education as well as the presence of branches of foreign educational institutions had continued to develop and grow (Lee & Healy, 2006; Cheng, 2017). Lastly, higher education in Asia underwent significant massification that involved fast-paced expansion of the system, as well as the increasing access to, and participation in higher education (Mok & Jiang, 2018). The massification of higher education is in some Asian countries based on the premise of increasing the number of higher education institutions.

In some Commonwealth Asian countries like Malaysia, Singapore, and India, higher education is viewed as an important component in supporting nation-wide strategic visions and plans, placing emphasis on quality as well as on quantity of higher education (Povera & Yunus, 2020; Ministry of Education Singapore, 2020).

Higher Education Governance in three select Asian Commonwealth Nations

Focusing on Malaysia, Singapore and India six areas which emerged during data analysis are discussed, namely: (a) trends and national reform in higher education governance; (b) university autonomy; (c) quality assurance; (d) access to higher education; (e) funding for higher education and lastly, (f) institutional differentiation and diversification. Malaysia, India and many commonwealth nations have a number of communalities in their higher education system, and Singapore is seen as advanced nation with a number of good practices that can be adopted and adapted by the commonwealth nations.

In the following section, six areas of focus related to chosen Asian Commonwealth countries – Malaysia, Singapore, and India – are discussed, namely: (a) trends and national reform in the higher education governance; (b) university autonomy; (c) quality assurance; (d) access to higher education; (e) funding for higher education and lastly; (f) institutional differentiation and diversification.

Trends and National Reform in Higher Education Governance

For the past decades, there has been a significant growth in higher education in Asia, including in Commonwealth Asian nations. Based on the report by UNESCO`s Institute for Statistics (2015), enrolment in higher education in Asia increased especially in East and South Asian region and is driven by a mix of demographic trends, public preferences, policy decisions and external economic situations. Even middle- and low-income countries in Asia are experiencing progress in accessibility to bachelor's degree programmes. Enrolment in private higher education institutions also increased dramatically over the decade in many Asian countries, such as in Singapore, Malaysia and India (UNESCO Institute for Statistics, 2015).

Malaysia. Malaysia has been recognized for its higher education system, aiming for making the country a global education hub by the end of 2025 as a major goal in its recent 10-year plan of the Malaysian Government for its higher education (Al Hilli, 2015). In the late 20th century, higher education in Malaysia had been structured based on western higher education system (i.e. UK and the US), catering to the needs of local and international students (Lee et al., 2017). Since then, the development of its higher education system encompassed increasing the number of private higher education institutions, alongside rapid market liberalization (Chin, 2019). Recent governance trends in the country focused on the

extension of autonomy to public universities, which was supported by key governance reforms such as the Education Act of 1996 and the National Council on Higher Education Act in 1996. However, critical policy areas such as appointment of top administrators and budget allocation for public universities are still governed and controlled by the government (Azman, 2012).

In addition, recent policy developments in Malaysia require higher education to focus more on the quality of learning experience for students. This is, in part, due to the re-alignment of the education system, including higher education, with the Shared Prosperity Vision 2030 blueprint for the country. The idea of realigning the higher education system with this 2030 vision was drawn from the purpose of reducing the wealth gap in the country and transforming the country into a higher-income nation. Higher education, under this vision, is expected to deliver targets concerning the preparation of human capital in the country to satisfy the skills demand of the country's new economic industry (Povera & Yunus, 2020). In addition, the Malaysian government, through the Malaysian Ministry of Education, introduced and enacted several reforms under its Malaysia Education Blueprint 2013-2025, with various strategies and changes be made to achieve strategic goals in five key areas – access, quality, equity, unity and efficiency. Reforms and changes focused on the area of quality included improving the access to education, including higher education, raising quality standards, revisions in curriculum, and maximizing system efficiency (Ministry of Education Malaysia, 2020).

Singapore. Singapore's higher education system underwent significant changes over the past several years, with the Higher Education Division of the Ministry of Education as the governing body for providing higher education in the country. Although the government had been seeking to establish autonomous universities, the state's interference in the activities of higher education institutions is still observed (Sam, 2016). Recent governance reforms enacted in Singapore took form in the enactment of the Corporatization of NUS and NTU under the Companies Act in 2006, which allowed for increased role in the university/governing bodies and council in institutional autonomy, as well as for the establishment of accountability frameworks used to ensure institutional accountability (Raza, 2010). These reforms were argued to represent a decentralization and marketization under the state supervision model of higher education governance, despite such reforms being presented to denote relinquishing of total control over higher education governance (Tan, 2019).

India. The higher education system in India experienced drastic changes, the number of Universities in India has increased 34 times from 20 in 1950 to 677 in 2014 (Sheikh, 2017). Not just in relation to the number of higher education institutions serving in the system but also the types and the geographical spread of these institutions. There have been some steps made by the government to improve autonomy in higher education institutions, but the government still maintains greater control on various aspects including the operational decision making of these institutions (Rao, 2015). State governments in India are given some degree of control over higher education in each Indian state, as per programme of the Central Government to decentralize devolve the authority and responsibility over higher education system from the central to the state governments in the country (British Council, 2014).

However, even though the country has seen increased numbers of higher education institutions in the past years, the higher education system remained insufficient in terms of having the capacity to attain enrollment ratios that is on par with the ratios of other middle-income economies. The tertiary gross enrolment rate is increasing rapidly, but the rate remained to be below China's or even Brazil's by around 20 per cent (Trines, 2018). Nonetheless, the government recently planned to roll out a new policy to better improve the structure of the education system of the country from early childhood education to university. Still in its consultation phase, the policy would likely disassemble the current higher education system, developing over 10,000 multidisciplinary universities.

The motivation behind this policy is to 'end the fragmentation of higher education by moving higher education into large multidisciplinary universities and colleges … aiming to have upwards of 5,000 or more students' (Jeffrey, 2019, para. 12). Recent reforms focused on the funding of its education system, including higher education, in which reform consultations findings potentially double the funding for the public education, including public higher education in the country.

University Autonomy

University autonomy emerged as an important focus area in many higher education systems, defining the relations between the higher education system, including institutions, and the authorities (e.g. government) governing such system (Martin, 2013). Although some governance reforms extended autonomy to higher education institutions to a certain degree, governments remained to have high levels of control in some of the procedural and substantive matters of institutional autonomy, primarily on the curriculum design and budgeting. However, some Asian countries are adopting a 'state-supervised model' and 'state-control model' for governance and management of higher education (Austin & Jones, 2016, p. 116). Singapore's higher education system was argued to be governed under the State supervision model of higher education governance (Tan, 2019). This means that all matters associated with governance, management and leadership are key responsibilities of the central government (David et al., 2018).

Moreover, in many Commonwealth Asian countries, university autonomy can be politically defined, given that the system is closely monitored and controlled by the government or a governing body; hence, it is a top-down system of governing academic autonomy. For instance, Malaysian universities and higher education institutions are accountable for responding to policies and initiatives enacted by the Malaysian Ministry of Higher Education – e.g. number of students, approval of new degree programmes, etc. (Azman, 2012). However, autonomy within individual institutions is stimulated through academic collegiality, operational performance, and others (Azman, 2012; Sam, 2016).

Nonetheless, empirical study by Al-haimi, Ibrahim and Hamid (2019) showed that there is a fast-paced and effective autonomy development at both private and public universities in relation to various academic, management and financial matters. For instance, there were high levels of autonomy concerning academic pay and conditions, personnel autonomy, curriculum and teaching, academic standards and research. In India, autonomy in higher education remained to be an issue, but recent developments in autonomy had been observed. For instance, in early 2018, the Indian government granted autonomy to about 20 higher education institutions, both in private and public sector, and progressively granted autonomy to other institutions for the next years (Sancheti & Pillai, 2020).

Quality Assurance

Quality assurance plays an important role in higher education systems globally, ensuring that such systems would promote value, excellence and reliability and would meet the demands and expectations for higher education (Ryan, 2015). Quality assurance models and policies vary from country to country. In Singapore, the Ministry of Education devised and enforced the Quality Assurance Framework for Universities, in which universities in the country are subjected to external auditing to ensure high level of quality in various areas of operation as based on audit findings (Sam, 2016).

In Malaysia, the government established the Malaysian Qualifications Agency that will evaluate, through benchmarking and quality audits, the quality of the programmes provided by higher education institutions in the country (Azman, 2012). In India, quality assurance is performed by the National Assessment and Accreditation Council, assessing universities and other higher education institutions on various quality criteria, including innovation, infrastructure and learning resources, teaching-learning practices and others (Pabrekar et al., 2015).

Access to Higher Education

Higher education systems in Commonwealth Asia had been expanding rapidly, causing financial stress for governments, forcing institutions to seek out alternative funding sources and push for restructuring the system (Asian Development Bank, 2011). Countries such as Malaysia, Singapore, India are restructuring their respective higher education systems through various ways, including privatization of higher education, corporatization of public universities, public-private strategic partnerships and accommodation of transnational education (Songkaeo & Yeong, 2016). Malaysia and Singapore saw recent developments in the private higher education provision and corporatization of public universities (Wan et al., 2017), while other Asian countries have greater number of private universities and higher education institutions than public or state universities because the government encourages participation of private entities (i.e. majority of these entities are nonsectarian or owned and operated by private entities not affiliated to any religious organization) in the system (Suarez et al., 2018).

Private higher education institutions have been of great importance in their role in the overall national objectives of governments, particularly when it comes to social and economic development (Chaves, 2013). Many Commonwealth Asian

countries recognized private higher education institutions as important entities in system wide higher education. Malaysia, for example, officially recognized private providers as complementary institutions supporting public or state-owned institutions in meeting the demands of increasing student population for higher education (Da, 2007; Lee et al., 2017).

The liberalization of higher education systems in many Commonwealth Asian countries allowed governments to be sustainable in their funding and expenditures, and allowed for more equitable access. In terms of access and equity, some Commonwealth Asian countries are still facing disparities and challenges. For instance, in India, there were still significant discrepancies in the enrolment ratio between rural and urban areas, in which enrolment ratio is much higher in urban areas than in rural areas. More so, gross enrolment ratio for male is also higher than that of female, which reflected some gender disparity in the access and participation in the higher education system in India (Bordoloi, 2012).

Funding for Higher Education

In terms of funding, Malaysia, India, and Singapore also had made some reforms to improve the funding mechanisms of higher education institutions in the country. For instance, the National Higher Education Strategic Planning 2020 and the National Higher Education Action Plan 2007-2010 implemented performance-based allocation mechanisms of Malaysian Universities, with the intent of stimulating competitiveness among these institutions. Performance indicators like enrolment rates, research and development, quality of teaching and learning are used for this funding allocation scheme (Ahmad & Farley, 2014).

In Singapore, public higher education institutions still receive endowment funds from the government, but still enjoy the autonomy to establish their own funding mechanisms to support internal developments. On the other hand, private universities and institutions follow market-oriented model for their funding base, encompassing competitive and diversified fund mix from fees, donations, research grants, and even the state (Sam, 2016).

Institutional Differentiation and Diversification

Higher education in Commonwealth Asian countries faced tremendous expansion resulting in differentiation or diversification in the types or classification of institutions operating in the system. In Malaysia for example, there are three categories of universities – research universities, focused universities and comprehensive universities. The common category of higher education institution is the research university category, which are complex institutions that primarily focus on research that play significant and academic societal roles. With research focus in mind, these types of universities had been of great importance in generating new information and analysis that further stimulate advances in technology, and human conditions via social sciences and humanities (Altbach, 2011). In Malaysia, there are five Research Universities, namely, Universiti Malaya (UM), Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), and University Teknologi Malaysia (UTM) (Malaysian Education, 2019). On the other hand, comprehensive universities are those institutions that provide a wide range of courses and fields of study. Lastly, focused universities are those institutions that focused on specialized fields, in which Malaysia has around 11 focused universities.

Discussion

This study focuses on exploring the governance and management practices of higher education systems in Commonwealth Asian countries, specifically Malaysia, Singapore, and India with the intention to identify good practices for adopting and adapting in Commonwealth Africa.

Student Enrolment in Higher Education Institutions

As revealed in the findings of the secondary research conducted, Commonwealth Asia countries have experienced growth in higher education as indicated by the increase of student enrolment in higher education institutions. Malaysia, for one, is well-recognized for the accomplishments it attained over the years driven by its 10-year plan for higher education ("Malaysian Government Release a New Higher Education Strategy," 2015). The developments in Malaysia's higher education can be attributed to its massification, which, according to Abdullah (2018), has led to increased number of student enrollments in higher education, improved quality of university education, and increased participation and access to higher

education. Similarly, Singapore and India have experienced drastic changes in their higher education systems, considering that they also have performed actions to improve their higher education.

Dimensions of Governance

In relation to the higher education practices in three Commonwealth Asian countries, the findings suggest that the four dimensions of governance – university autonomy, quality assurance, funding and access, and institutional differentiation and diversification – are embodied by Commonwealth Asian nations. Consequently, these findings can be linked to the literature review regarding governance in higher education. Malaysia and India, having increased university autonomy, thereby provide their higher education institutions freedom to accomplish their goals and perform their responsibilities in providing quality education to students (Mandey, 2004; Rayevnyeva et al., 2018).

Quality Assurance

The three Commonwealth nations also have extended their efforts in assuring the quality of their higher education which entail that they have performed a mechanism of strategic planning to safeguard and enhance higher education quality (Majstrovic et al., 2010). On the other hand, Malaysia has specifically exhibited institutional differentiation with the diversification of its types of institutions. As indicated by Darwin & Lewis (2005), this approach helps shape higher education systems alongside increased efforts in quality assurance and in the number of student enrolments.

Governance Reform

From the literature, the higher education governance trends in Malaysia, Singapore, and India, have shown that the Commonwealth Asian countries in this study have implemented their approaches or initiatives in higher education to positively shape the learning experiences of their students. The changes that these nations have undergone are presented, revealing that their national governments have implemented actions to improve their higher education systems.

An overview of some of the governance reforms is also highlighted in the study, such as how Singapore has enacted the Corporatization of NUS and NTU under the Companies Act in 2006 to increase institutional autonomy and how Malaysia, led by its Ministry of Education, has executed strategies under its Malaysia Education Blueprint 2013-2015 (Ministry of Education Malaysia, 2020; Raza, 2010). From that, the articles used have placed emphasis on the current changes occurring in the higher education systems of Malaysia, India, and Singapore, thereby revealing the milestones they have accomplished.

Initiatives or approaches implemented by Malaysia, Singapore, and India to overcome their challenges in higher education is addressed through a comprehensive discussion of the countries' approaches in relevance with the four dimensions of governance, namely university autonomy, quality assurance, institutional differentiation and diversification, and funding and access. Most of the sources obtained from the secondary research were used to discuss the answer to the second research question, thus indicating the efforts exerted by the national governments of these three Commonwealth Asian nations in improving higher education governance. To mention, both India and Malaysia have exhibited high levels of university autonomy (Azman, 2012; Al-haimi et al., 2019) while Singapore is argued to be using the state supervision model of higher education governance (Tan, 2019).

For the last dimension, the study has specifically focused on Malaysia's expansion. The lack of information regarding Singapore's and India's institutional diversification is the reason for the limited findings.

Lesson for Common Good - Commonwealth Asia to Commonwealth Africa

The reforms and developments in the governance of higher education systems in many Commonwealth Asian countries could provide useful lessons for achieving better governance of higher education systems in the Commonwealth Africa. Many Commonwealth African countries are still facing governance issues concerning their higher education systems. The lack of institutional autonomy in higher education is still evident in many higher education systems in Commonwealth Africa, limiting academic freedom for universities (Amadi & Ekpoafia, 2018). Some experience funding issues, which limited the growth of universities and other higher education institutions to meet the increasing demand for higher education (Kokutse, 2018; Munene, 2019). Such lack of funding further caused low levels of research outputs, and

stagnating development of specialized higher education institutions necessary for meeting knowledge-based economy (Agachi, 2019).

With these issues in mind, the following are potential implications for Commonwealth African countries drawn from the Commonwealth Asian experiences in higher education governance, namely: (a) institutional autonomy and accountability; (b) strengthening governing boards and council; (c) strengthening research-based university; (d) expanding access through the growth of private higher education; and, (e) finding new sources of funding.

Institutional Autonomy and Accountability

Institutional autonomy and accountability had been an issue covered in governance reforms of many Commonwealth Asian countries, in which governments extend institutional autonomy in planning, devising and implementing their respective governance structures (Azman, 2012). This paper recommend that Commonwealth African governments improve institutional autonomy while maintaining some control over public universities and higher education institutions (e.g., allocating budgets). This approach will enable public universities to have more flexibility in setting and achieving their strategic goals. Besides focusing on autonomy, governance structures should be established in a manner that it provides a right equilibrium between autonomy and accountability, given that the latter is also a critical challenge for some Asian governments in terms of funding large fraction of higher education institutions (Speziale, 2012).

Strengthening Governing Boards and Council

Providing or extending institutional autonomy for higher education institutions would likely require reforms associated with the institutional management and leadership of higher education institutions. To take advantage of such institutional autonomy, it is critical for higher education institutions to build up the management and leadership capabilities of governing boards and councils. One implication within this issue could be increasing inclusivity and representation for external entities in governing boards, considering their potential role in providing vital data and information concerning demand in the market (Garwe & Tirivanhu-Gwatidzo, 2016). This is recommended based on positive impacts and experiences when such a model was implemented in Asian nations.

Strengthening Research-based University

Several Commonwealth Asian universities had shifted their focus to becoming research-based or research-oriented institutions that provide not just traditional higher education needs but also to provide hubs for innovation and research (Ramli et al., 2013). Building and strengthening research capacities of universities in Commonwealth Africa could be of great help in revitalizing higher education on the continent, and that it would be a great way for diversifying the system. More so, Commonwealth African governments could also set up research institutions focused on specialized areas, like the National University of Singapore's research centers of excellence specializing in life sciences and engineering (National University of Singapore, 2019).

Expanding Access through the Growth of Private Higher Education

Private higher education institutions had played a significant role in system-wide higher education in many Commonwealth Asian countries (Chaves, 2013). Similarly, Commonwealth African higher education systems are diversified, in which differentiated public and private higher education are in place. However, the rapid growth in the population and the growth in the demand for higher education on the continent could have policy implications focusing on the expansion of private higher education. Private higher education could help increase access to higher education and could provide options to student population (Mugabi, 2012). However, reforms for greater access through growth of private higher education should ensure that private higher education providers have the necessary capacities and resources to meet and satisfy the needs of students (Zeleza, 2018). Capacity problems have already been observed in many public universities across the region, and the well-equipped and capable private higher education could encourage competition in the system forcing public universities to improve (Tamrat, 2018).

Finding New Sources of Funding

As discussed earlier, many Commonwealth Asian countries expanded institutional autonomy to higher education institutions, and Commonwealth African governments could follow suit. With such decentralization of autonomy in the higher education system, increasing the autonomy would require institutions to diversify their funding structure, and should reduce their reliance on government funds and budgets (Praneviciene et al., 2017). Having effective and diversified funding for higher education institutions would be of great help functioning as an instrument for achieving external efficiency.

Many public higher education institutions in Africa are dependent on the base funding provided by the state or the government; hence, diversification of funding would provide them with greater autonomy, especially in funding activities in line with their strategic goals and objectives (Raza, 2010). Past studies already highlighted the issue of funding in the higher education systems in many Commonwealth African countries (Munene, 2019). For instance, the Ghanaian Minister of State in charge of tertiary education highlighted that the country is constrained when it comes to public sector expenditures affecting the funding structure of the tertiary education in the country. As he stated, public sectors like transportation, healthcare, and education are competing significantly for state funding (Kokutse, 2018). Nigeria, on the other hand, had also been facing serious problems concerning the funding of its higher education, and education sector in general. There were plans of diversifying the finance structure for higher education, with the possible cost sharing and the ability of each tertiary institution to generate a substantial part of its revenue outside the government subventions being taken into consideration (Okuwa & Campbell, 2018).

Conclusion

Governance and management of higher education systems has been an important issue for policy makers and governments. Considering the role of effective governance and management of the system would help in achieving national goals related to human capital development. This research explored the experiences of three Asian countries with regards to governance and management of higher education to determine its potential application in the Commonwealth African countries. Governance and management policies and structures across Commonwealth Asia vary, with many countries having top-down structures of governance and autonomy. Quality assurance also played a significant role in higher education systems in many Commonwealth Asian countries. Also, quality assurance models and policies vary from country to country. University-based research, institutional differentiation and development of private higher education are common areas of governance trends in Commonwealth Asia. Although Commonwealth African countries have varying governance and management goals in terms of their respective higher education systems, Commonwealth Asian experiences and good practices on higher education governance can be adapted and adopted based on the peculiarities in the local context.

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Digitalisation of the Teaching and Learning for International Students in Higher Education: A Systematic Review

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Abstract

During the COVID-19 pandemic, digitalisation in the international higher education sector was underlined by migration to online delivery across different educational contexts. However, research into the execution of digitalisation together with its impacts on the teaching and learning of international students in higher education is scattered and fragmented. This study aims to systematically review articles related to these topics based on a four-step refined process: initial search, filtering, screening, and in-depth review. Thirty-five identified articles were used to examine (1) the main forms of digitalisation of teaching and learning for international students, (2) the digitalization-related experience of international students in learning, (3) the opportunities of digitalisation of teaching and learning for international students and (4) the challenges of digitalisation of the teaching and learning for international students. Based on the findings, we discuss the implications of capitalizing on digital technologies and refining pedagogies in online and blended modes of delivery.

Keywords: digitalisation, digital technology, experience, international students, international education, learning, teaching

Introduction

Digital tools have played an increasingly important role in the education of international students in both onshore and offshore programs over the past decades. However, the COVID-19 pandemic has demanded universities shift to online and/or blended delivery most often at very short notice. Numerous headlines and debates from higher education institutions, the media, and professional organizations underline how institutions, academics, and students are unprepared for such an unprecedented transition to the digitalisation of higher education. The large-scale shifts to online learning pose significant questions not only for the redesign and implementation of curriculum and pedagogy but also for the reimagination of the practices and values of higher education in an increasingly digitalised environment. In particular, the reimagination of teaching and learning in the digital landscape needs to consider the integration of technological tools into

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course design as part of pedagogical and curriculum innovations in response to the changing context (McPhee, 2020). Despite significant challenges, higher education institutions have seized upon the "communicative, collaborative, and teaching power" digital technologies could potentially offer (Gomes & Chang, 2020, p. xxi).

The growing demand for online delivery unfolds universities' struggles and simultaneously presents possibilities for the education of international students and the internationalization agenda of universities as international student mobility is a core component of international higher education globally. The fast-moving migration to online or blended delivery, coupled with COVID-19 and border closures, has had profound impacts on international students' learning, welfare, and connectedness (Adachi & Tran, 2022). In particular, this increasingly digitalised higher education context poses an acute need to reconfigure the digitalisation of teaching and learning for international students. This reconfiguration is becoming more critical through institutions that are under pressure to relocate and revamp teaching and learning experiences in both spatial and temporal dimensions (Nixon et al., 2021). Yet, there is no formula for the internationalization of education and digitalisation of education that can fit all due to the varied purposes, aspirations, and characteristics of international students (Gomes & Chang, 2020; Tran et al., 2022; Tran, 2013a, 2013b).

To have a nuanced understanding of the forms, opportunities, and challenges associated with the digitalisation of teaching and learning for international students, this article aims to systematically review academic articles related to these areas by adopting a four-step refined process to answer four guiding research questions (RQs), namely (1) what are the main forms of digitalisation of the teaching and learning for international students?; (2) how do international students experience the digitalisation of teaching and learning?; (3) what are the opportunities of digitalisation of teaching and learning for international students?; and (4) what are the challenges of digitalisation of the teaching and learning for international students. While many of the 35 identified articles reviewed in this study were written prior to COVID-19, they present significant implications for the current digital environment. They provide fresh insights into the diversity of digital technologies and pedagogies used in teaching international students and mixed responses of international students towards digital learning.

Methodology

This study systematically reviewed the literature related to the digitalisation of teaching and learning for international students in the higher education sector. The key principles underpinning the methodology of the study were aligned with the four-step systematic literature review originally proposed by Mun et al. (2020) which are (1) a systematic search from selected databases using terms and filters, (2) a primary screening of abstracts, (3) a second screening of the content, and (4) an in-depth review of identified literature. In this study, several minor changes were made to streamline the intended method. Specifically, as both abstracts and the content of articles were screened together, the third and fourth steps are merged into one to avoid repetition. Besides, the reviewing steps were split into discrete sections to highlight the process of filtering irrelevant articles. The four-step refined process in this study, therefore, was as follows: (1) an initial search using a variety of search terms that creates a relevant algorithm to find potential articles; (2) a filtering step to remove duplicates and exclude irrelevant articles based on a number of exclusion criteria; (3) a screening step on abstract sections to identify the relevance of articles from the previous step; and (4) an in-depth review of articles filtered from the third step. By using this four-step refined process, it is viable to keep this systematic review broad enough to include studies from interdisciplinary areas, yet simultaneously narrow enough to be focused on the chosen topic.

The Initial Search

This step was to find relevant articles needed to conduct a systematic review. To cover a wide range of research from various directions of international education, three scholarly databases were put into consideration, namely Scopus, Web of Science (WoS), and Education Research Complete (EBSCO). The three databases are the most relevant and

reputable electronic academic platforms that potentially provide a wealth of academic publications on the digitalisation of teaching and learning. The chosen databases also have the same advanced structures using logical operators and algorithms as well as allowing the utilization of specifications that are essential to undertake a systematic review.

The same set of search terms was used on the three scholarly databases by using special characters, for example, asterisks together with AND or OR operators to form a relevant algorithm, namely ("international student*" or "foreign student*" or "overseas student*") AND (digital* or online* or virtual* or *reality or mobile* or web* or SNS or "Social Networking Sites" or "Computer-mediated communication" or CMC or "information and communication technology" or ICT or "social media" or MOOCs or internet or *technology* or computer) AND (learning or teaching). More specifically, the search term international student was used alongside other synonyms, such as overseas student and foreign student, to identify articles on the target students. A range of search terms related to digitalisation (e.g. digital, online, virtual, reality, or mobile) is used as hyponyms and hypernyms in the maneuvering for discovering articles containing relevant topics. Several search terms were put within the quotation marks to group compound words into specific phrases. Some prevalent acronyms of educational technologies, which are widely used as technical terms in research, were included in the algorithm, for example, SNS (Social Networking Sites), CMC (computer-mediated communication), ICT (information and communication technology), and MOOCs (Massive open online courses). The OR operators were used between the search terms inside parentheses to find research containing any of these terms. The AND operators were used outside parentheses as searching restrictions to narrow the result of the findings. There were several right-hand truncation characters used at the end of search terms to include the plurality of search terms, for example, student versus students, and experience versus experiences. In some cases, right-hand and left-hand truncation characters were also used to search for results that might be relevant to digitalisation. For example, the search terms digital*, online*, virtual*, or *technology* allow the variations of digital devices, digitalisation, digitalize, online learning, online teaching, virtual technology, or virtual class.

The Filtering Step

The filtering step was to remove extraneous articles found in the initial search. There were a number of filtration tabs executed after the initial search, for example, scholarly journals, peer-reviewed articles, full-text (or open access), and English language. These filtration tabs helped to narrow the scope of the results and check the relevance of identified articles. For example, scholarly journals and peer-reviewed articles filtration tabs were used to eliminate unpublished work, meeting papers, unofficial reports, and other grey literature which are unable to determine whether they were peer-reviewed or not. The use of full-text (or open access) and English language filtration tabs were to ensure the accessibility of the potential articles. There was no time limit required to allow the consideration of relevant studies in the past. All duplicates and inaccessible articles were removed.

The Screening Step and In-Depth Review

In the last two steps, abstract sections were screened to identify the relevance of the articles. Apart from filtration tabs used in the previous step, three eligibility criteria of inclusion were taken into account to selectively choose articles related to the digitalisation of teaching and learning for international students: (1) target topics must be the execution of digital devices in teaching and learning for international students; (2) target learners must be international (or overseas or foreign) students who pursue full-time higher education degrees in a foreign country; and (3) the focus must be the teaching and learning experiences for international students. Compounded with the filtration tabs used in the previous step, to be eligible to be selected for this systematic review, articles must (1) be written in English, (2) be from academic sources, (3) focus on the execution of digital technology, (4) target international students in the higher education section, and (5) concentrate on the teaching and learning experiences. In this way, articles that do not meet all the five inclusion

criteria will be excluded. The inclusion and exclusion criteria are summarised in Table 1. All identified articles were scanned and skimmed to find relevant information to answer the four research questions.

Table 1

Criteria for Inclusion and Exclusion

Examples	Inclusion	Exclusion
Articles written in the English language	✓	
Articles written in other languages		✓
Articles from scholarly sources	✓	
Inaccessible articles		✓
Unpublished work, meeting papers, unofficial reports, and grey literature		✓
Articles related to the execution of digital technology	✓	
Articles not related to the execution of digital device		✓
Articles focused on international students in the higher education sector	✓	
Articles focused on other groups of students, such as domestic students, exchange students, high school students or unidentified target students.		✓
Articles focused on the teaching and learning experiences	✓	
Articles not focused on the teaching and learning experiences, for example, homesickness, mental health, university life, library experience, or university administration.		✓

Results

The initial search showed 1627 results from Scopus (123), EBSCO (285), and WoS (1219). After using filtration tabs in the second step, 1321 articles were found ineligible, while 306 articles went to the next stage. At the end of the screening step, only 35 articles proved eligible for the in-depth review. The list of the 35 articles is presented in alphabetical order in Appendix A.

The Main Forms of the Digitalisation of the Teaching and Learning for International Students

Based on the identified articles, there are various digital forms deployed in the international education setting. This indicates the complexity and diversity of the nature of digitalisation in teaching and learning for international students. In some circumstances, the issues of taxonomy arose when authors use equivocal and sometimes overlapping terms of digital technologies. Given the taxonomic ambiguity, this study classifies digital teaching and learning for international students into five categories: online learning, virtual reality technology, social networking sites (SNSs), other emerging technologies, and blended learning.

Online Learning

The term online learning refers to the teaching and learning practices taking place by means of computer-mediated communication technologies (CMC) and the internet (Lanham & Zhou, 2003; May & Tekkaya, 2016; Sleeman et al., 2019; Warring, 2013; Zhang & Kenny, 2010). Online learning can be classified into two categories: asynchronous and synchronous. In the asynchronous online learning environment, international students are able to access and study through online structured lessons, and asynchronously discuss with class members in online discussion groups. Asynchronous learning is delivered in many ways which include web-based resources (Lear et al., 2016; Oktriono, 2019;

Sloan et al., 2014; Watson, 2011; Yuhan, 2017), discussion platforms such as WebCT (Lanham & Zhou, 2003; Zhang & Kenny, 2010), Blackboard (Karkar-Esperat, 2018), or one-way audio/video podcasts (Geri, 2011; Geri, 2012). Synchronous online learning, on the other hand, allows the possibility of working and scaffolding knowledge among class members in real time with immediate and real-life interactions. Examples of synchronous online learning are two-way video lectures (Geri, 2011; Geri, 2012) or interactive web-based virtual classrooms (Wang & Reeves, 2007).

Based on the aforementioned ideas, there are a number of sub-forms of online learning mentioned in the identified articles which will be explored in the following sections: online learning platforms, web-based learning, video-based learning, mobile learning, and combined use of online resources.

Online Learning Platforms

Online learning platforms have been widely used as means to deliver educational instructions between teachers and students (Lanham & Zhou, 2003; Lear et al., 2016; Perren, 2010; Watson, 2011; Yuhan, 2017; Zhang & Kenny, 2010). More specifically, teaching content and learning activities take place on online platforms through the use of the Internet, computer, web browser, and program applications. For example, a number of academics made use of WebCT, FirstClass, and Blackboard Learning System with several features needed for the teaching and learning activities such as learning content, discussion areas, content-related links, assessment, and submission (Karkar-Esperat, 2018; Lanham & Zhou, 2003; Perren, 2010; Zhang & Kenny, 2010). Horizon Wimba is another type of web-based learning platform that enables simulation of real-world experiences to students, including discussion forums, private messages, and synchronous interaction between students and teachers as well as between students (Wang & Reeves, 2007).

Web-Based Programs

Web-based programs are one of the major aspects of online learning. Web-based programs lay the emphasis on independent and self-regulated learners who would like to study at their own pace and time. There are several programs mentioned in the identified articles that are developed for various purposes. Teaching academic culture and skills is the focus of Prepare for Success program that helps international students assimilate to new academic culture in the UK (Watson, 2011). Study Skills Success provides international students with essential academic literacy and skills (Lear et al., 2016). Dissertation Game Model supports postgraduate international students in understanding the conventions of writing a dissertation (Sloan et al., 2014). Web-based programs are also deployed to teach foreign languages to international students whose first languages are not the instruction language at host universities. Yuhan (2017) presented a multimedia website named Time to speak Russian, to convey a Russian language course to non-Russian international students studying in Russia. Mujico and Lasagabaster (2019), on the other hand, investigated the potential impacts of using e-Portfolios on motivation, self-regulation and language acquisition of international students in the UK. The web-based program is also used as a language proficiency test to measure the spoken and written Indonesian language skills of international students studying in Indonesia (Oktriono, 2019).

Video-Based Programs

Thirdly, online learning is also shown through the use of videos. This form of online learning offers international students an opportunity to study by watching a variety of videos. Generally, there are three types of video-based learning reported in the identified articles, namely video lectures, interactive video lectures, and live video sessions (Geri, 2012). In terms of the first type, video lectures are mainly used as a complementary means of supporting traditional face-to-face classes. Specifically, besides textbooks and educational materials, videos containing lesson content are created by lecturers and then uploaded to the learning platforms where students enrolled in a course are able to watch and study by

using their computer devices and the internet (Geri, 2012). Interactive video lectures, on the other hand, not only cover the lesson content via videos but also capture complete class sessions where students can see the interaction between lecturers and students that occurred in the class (Geri, 2012). Live (or two-way) video sessions are the more advanced application of videos in teaching international students. Through the use of computer devices and internet access, students can simultaneously interact and communicate with their lecturers and other classmates in real time (Geri, 2011; Geri, 2012). For this reason, live video sessions provide a more realistic learning experience vis-à-vis the first two types of video-based learning.

Mobile Technology

Due to the ubiquity of handheld mobile devices, mobile technology plays an important role in online teaching and learning for international students. Sevilla-Pavón (2015) listed a variety of handheld mobile devices that are essential and necessary for language learning: smartphones, personal digital assistants, palmtops, laptops, or tablets. Shao and Crook (2015) examined the use of mobile social software to support cultural learning for new-arrival international students in the UK. In their research, international students were provided with mobile phones installed with mobile blogging software (or moblogging in authors' terms) to blog about cultural experiences they had in the UK. In this way, moblogging offers an opportunity for international students to learn and gain language and cultural competence in the UK context.

Combined Use of Online Resources

Apart from the four forms of online learning mentioned above, the combined use of online resources is occurring in teaching foreign languages to international students. Azarova et al. (2020) investigated the application of combined information technologies in developing and enriching communicative skills, namely Ukrainian phraseology, for international students who are not native to the Ukrainian language. In their research, a range of information technologies was deployed in teaching practices, including PowerPoint-2010, Google-Forms application and online libraries, providing different search engines, website-based online resources, online dictionaries, and videoconferences. Lanham and Zhou (2003), on the other hand, presented the combination of synchronous and asynchronous learning that online synchronous lectures could take place at an arranged schedule and then, the records will be uploaded on asynchronous learning platforms where all students are able to access.

Virtual Reality Technology

In the context of international education, virtual reality (VR) technology enables international students to immerse themselves in a virtual environment where they are able to interact with other users via computing objects and virtual representation. May (2020, p. 6) defined desktop-based Cross Reality technology as "the integration of immersive, augmented, mixed, and virtual reality technology within physical reality". In the study, a virtual laboratory for engineering international students was built to conduct physical experiments without physical presence. This virtual laboratory is set up with two main parts: a graphical web interface and a tele-operative testing cell. The graphical web interface has four areas where students can (1) set up parameters, (2) control the course of their experiments, (3) collect experimental data, and (4) observe experiments via a live video stream. The tele-operative testing cell is set up with two testing machines and one robot that are tele-operatively controlled by parameters from the graphical web interface.

Social Networking Sites (SNSs)

Social networking sites (SNSs) have a number of indispensable applications for international education settings. In several circumstances, SNSs (e.g. Facebook or Twitter) are deployed as an alternative to learning management

platforms facilitating the teaching and learning due to the connectivity between students and instructors and between students and classmates (Sleeman et al., 2019). Htay et al. (2020) scrutinised the potentials and challenges in using the Twitter platform for international students in the higher education context. Sleeman et al. (2019) investigated the experiences of international students using Facebook and Twitter to collaborate and carry out group assignments in an English for academic purposes course. Sleeman et al. (2020) underlined the positive implications of social media on academic achievements as well as social adjustments of international students. Zhang et al. (2020) introduced ZJU and DingTalk, prevalent social media platforms in China, in which a range of teaching and learning practices can be implemented by recording online sessions, publishing lesson materials, submitting assignments, or taking examinations.

Other Emerging Technologies

With the advancement of technologies, there have been various educational instruments that can be potentially used for the teaching and learning for international students. Within the scope of this study, two emerging technologies have been applied in the international education milieu, namely Automatic Speech Recognition (ASR) and Intelligent Cloud Computing (ICC).

ASR is an advanced technology that has been mainly used in the field of language teaching. This technology enables the recognition of speech in terms of various acoustic features (Zhao, 2017). The applications of ASR mainly revolve around pronunciation training for non-native speakers (Zhao, 2017) and automatic pronunciation grading (Wang & Kawahara, 2009).

ICC has great capabilities to exploit computer system resources that are potential for teaching and learning of international students. “Cloud computing refers to both the applications delivered as services over the Internet and the hardware and systems software in the data centers that provide those services to students” (Chen et al., 2015, p. 55). Chen et al. (2015) found two outstanding merits of ICC for international students: (1) enhancing sharing resources and personalised information service; and (2) improving the extendibility that enables the parallel service among international students and instructors.

Blended Learning

Besides applying digital devices and technologies to the teaching and learning for international students, a number of studies shed light on the combination of digital and traditional education. Blended (or hybrid) learning is defined as “the combination of characteristics from both traditional learning and e-learning environments” (Lanham & Zhou, 2003, p. 286). McPhee and Pickren (2017) presented two cases of blended learning that were examined at GEO 121 and GEO 122 classes. For the former case, international students were allowed to use phones or tablets with GPS, map applications, and MP3 audio files to make a walking tour discovering locations in Vancouver before doing a post-tour assignment. For the latter case, a flipped classroom was carried out through the use of videos prior to using i-Clickers for classroom discussions.

How International Students Experience the Digitalisation of Teaching and Learning Practices

As presented in the previous section, digitalisation provides a wide range of potentially pedagogical means to support the teaching and learning for international students. However, the reception from international students shows mixed results with both positive and negative experiences. This section addresses the second research question regarding how international students experience the digitalisation of teaching and learning practices.

Positive Experiences

Flexible and Convenient Experiences

Flexibility and convenience are the most common feelings that international students have when experiencing digital learning. Due to the support of asynchronous technologies, international students are able to have unrestricted access and increase their learning autonomy while avoiding unnecessary pressure of physical and temporal matters which is prevalent in traditional learning (Karkar-Esperat, 2018). A number of international students reported that "I don't need to be in the classroom" (Karkar-Esperat, 2018, p. 1731); or "we could do this tour by ourselves, and not as a whole group" (McPhee & Pickren, 2017, p. 427). The adjustability of time and location, in effect, results in flexibility in learning style and study pace (Erichsen & Bolliger, 2011; Karkar-Esperat, 2018). Flexibility also forms the sense of ownership of international students associated with the capability of self-regulation and literacy achievement (Mujico & Lasagabaster, 2019). In this way, digitalisation is a key driver in helping international students become more active and independent learners (McPhee & Pickren, 2017).

Interactive Real-Life Experiences

Interactive real-life experience is another distinguishing characteristic that digital learning brings to international education. According to McPhee and Pickren (2017), the use of digital devices in a blended learning class (i.e. a walking tour lesson) greatly helps international students engage with a real-world environment in association with learning resources provided by teachers. Similarly, Shao and Crook (2015) found that the execution of mobile group blogs between learners facilitates the acquisition of real-world authentic information which is critical for cultural learning for international students. Another study indicated that the online remote laboratory creates a chance for interactive experiences which can be found in transnational collaboration in virtual real-time experiments (May & Tekkaya, 2016).

Unimpeded Experiences

Digitalisation for teaching and learning offers international students a range of approaches to overcome barriers they might be facing in traditional classroom settings together with enhancing learning self-management. Regarding language and culture impediments, Kang and Chang (2016) found that asynchronous online learning alleviates power asymmetries in which international students are more confident to express their opinions to their classmates through the use of text-based online discussion. In addition, the use of digital devices allows for multiple repetitions of instructions or extra information resources that help international students better navigate any language barriers and understand lessons (Hughes, 2013; McPhee & Pickren, 2017; Wang & Reeves, 2007). Besides, the repetition of asynchronous learning tasks also erases the fear of making mistakes during the learning process, as "I could go back and think about my answers and correct them" (Lear et al., 2016, p. 18). Furthermore, Sleeman et al. (2020) highlighted that using SNSs in teaching not only constitutes academic achievement but also consolidates interpersonal relationships among international students.

Negative Experiences

Disconnected Experiences

Isolation and uncertainty are the most common experiences that international students encounter in digital learning. Digital learning, which allows the ability to study without physical and temporal issues, results in reducing face-to-face interaction that, to some extent, affects the learning experiences of international students (Karkar-Esperat, 2018). In this regard, Wang and Reeves (2007) clarified that the nature of synchronous online courses hinders informal

interactions between students which occur mostly in the form of short greetings. For this reason, disconnected experiences appear due to the dearth of interpersonal communication and interaction between students in online classrooms. The disconnected experiences are demonstrated in several interview responses of international students, for example, “I am doing the minimal interaction” (Karkar-Esperat, 2018, p. 1729) or “I hate staring at the computer” (Erichsen & Bolliger, 2011, p. 320).

The feeling of disconnectedness also results from the lack of contact between instructors and students which usually happens to international students (Chen et al., 2008; Warring, 2013). Chen et al. (2008, p. 315) reported that several students are frustrated by the absence of teachers as they do not know “whom to listen to” together with difficulties to have in-depth discussions with teachers after class. The invisibility of teachers in asynchronous platforms is also the cause of uncertain experiences for international students, as peer discussions fail to work properly (Chen & Bennett, 2012). As a result, students are unable to verify their understanding and interpretations of lessons.

Experiences of Language Barriers

Many international students are not native speakers of the language of instruction which greatly hampers them from engaging in digital classes. A cohort of international students reported that they are unable to fully express their ideas to other students due to language barriers which to a large extent consequently affect academic achievements (Hughes, 2013; Lanham & Zhou, 2003; Liu et al., 2010; Wang & Reeves, 2007; Zhang & Kenny, 2010). Accordingly, a number of international students told they have to increase their time and effort to compensate for language limitations which consequently causes negative experiences of digital learning (Hughes, 2013; Liu et al., 2010). For example, “I need to think and work hard on my writing and spend so much time. I get discouraged sometimes” (Karkar-Esperat, 2018, p. 1729) or “sometimes I have to check the spelling and stuff, so it takes a lot of time” (Zhang & Kenny, 2010, p. 25). In some cases, the language barriers also trigger inferiority feelings for international students that undermine their confidence (Zhang & Kenny, 2010).

Experiences of Digital Illiteracy

With the increasingly important role of digital technologies, digital literacy becomes crucial more than ever, especially for international students who are highly exposed to the digital world. However, the level of digital literacy greatly differs in that some international students have no or very little knowledge of using digital devices and technologies due to their backgrounds (Habib et al., 2014; Htay et al., 2020). This consequently causes restraints on the learning experiences of international students. Hughes (2013) listed a number of obstacles caused by digital illiteracy, including the unfamiliar experiences of using searching databases, online journals, and learning-help services. Accordingly, digital illiteracy leads to other issues that are detrimental to learning experiences, for example, time-consuming (Hughes, 2013), confusion, and distraction (Hughes, 2013; Wang & Reeves, 2007).

Experiences of Health Issues

Health issues, as a result of lengthy exposure to digital technologies, emerge as a significant concern for international students. Hughes (2013, p. 135) noted that a number of international students suffer from fatigue and sore eyes as “too much computer makes you feel sick”. Apart from physical health problems, a significant number of mentality-related adjectives regarding digital learning are reported by international students, for example, upset, frustrated, anxious, depressed, lost, uncertain, isolated, and lonely (Chen & Bennett, 2012; Kang & Chang, 2016). Too much information offered by digital learning along with the disconnected experiences altogether overwhelms international students, especially those whose digital literacy is deficient (Mujico & Lasagabaster, 2019). For example, “too much

information" (Hughes, 2013, p. 135) or "I felt sad […] I was very anxious […] I kept saying to people I was frustrated" (Chen & Bennett, 2012, p. 688). In the context of synchronous online courses, the experience is even exacerbated due to nerves as international students have to instantly respond to other peers associated with the fear of making language mistakes (Wang & Reeves, 2007).

New Opportunities for the Teaching and Learning of International Students in Higher Education

This section is dedicated to answering the third research question concerning opportunities for digitalisation of the teaching and learning for international students will be synthesized based on the identified articles. There are three main themes revolving around (1) more opportunities for global cooperation and interpersonal collaboration, (2) fewer learning constraints for international students, and (3) narrower cultural and linguistic gaps.

More Opportunities for Global Cooperation and Interpersonal Collaboration

The connectivity supported by digital technologies is crucial in enhancing global cooperation and interpersonal collaboration. The promise of Cross Reality Spaces in creating an online laboratory opens up an opportunity for international students from various countries around the world to undertake cooperative and collaborative engineering experiments (May, 2020; May & Tekkaya, 2016). The online laboratory, therefore, is prospective for future global education contexts where theory and practice are connected on digital platforms which are pivotal for practice-oriented fields, such as engineering education (May, 2020). Apart from Cross Reality Spaces, ICT and asynchronous digital technologies also facilitate a sense of collaboration among international students in group work (Sevilla-Pavón, 2015; Zhang & Kenny, 2010). In this regard, ICT and asynchronous digital technologies offer pertinent platforms not only furthering collaboration in group work (e.g. dividing works, discussing lessons, or sharing ideas) but also reinforcing connections with other classmates (Demuyakor, 2020; Lear et al., 2016; Sleeman et al., 2019).

Fewer Learning Constraints for International Students

The widespread availability of the internet together with the sense of interaction and collaboration supported by digital technologies significantly increases learning autonomy for international students by removing detrimental barriers to the teaching and learning for this group of students. Digital learning modes extend educational opportunities to a vulnerable population of students, including international students, as they can study, synchronously or asynchronously, without any time-space restraints (May, 2020; Sevilla-Pavón, 2015; Wang & Reeves, 2007). As such, digital education provides international students with more learning autonomy, as they are able to choose ideal learning settings (Mujico & Lasagabaster, 2019), learning pace (Karkar-Esperat, 2018), or learning strategy (Lear et al., 2016; Wang & Reeves, 2007).

Narrower Cultural and Linguistic Gaps

International students have diverse individual learning needs, as they come from different cultural and linguistic backgrounds. Regarding this aspect, digital learning is able to satisfy the diverse needs of learners by offering a range of learning techniques with various levels of digitalisation, for example, self-learning (Geri, 2012; Sloan et al., 2014; Watson, 2011), two-way interactive learning (Geri, 2011; Wang & Reeves, 2007), practice-oriented learning (May, 2020; May & Tekkaya, 2016), or blended learning (Lanham & Zhou, 2003; McPhee & Pickren, 2017). Besides, the ability to revisit and revise learning material of asynchronous learning is also beneficial for students from Asian backgrounds, who prefer memorizing ideas in acquiring knowledge (Lanham & Zhou, 2003). In terms of language matters, Kang and Chang (2016) explored that a number of international students from China feel more confident in taking asynchronous online

classes as they have more opportunities to express their ideas mostly through the use of written language while avoiding other cultures and language barriers which they would have had in face-to-face settings.

Key Challenges for The Teaching and Learning for International Students

This section will address the final research question focused on key challenges for teaching and learning for international students. Within the scope of this study, there are three main themes, including cross-cultural challenges, technical problems, and other challenges.

Cross-Cultural Challenges

Digital education engages a great variety of international students from diverse backgrounds who might have different learning styles and techniques, which in turn, creates cultural and linguistic gaps in teaching and learning practices. Zhang and Kenny (2010) found that online learning is not culturally neutral because of the central paradox between the diversity of international students and the homogeneousness of epistemologies, teaching philosophies, and learning objectives. For that reason, there are a number of challenges in online classrooms due to different educational philosophies from diverse education systems, for example, assessment criteria, classroom instruction and interaction, roles of teachers, student collaboration, academic conduct, language instruction, teacher-student relationship, and learning styles (Chen et al., 2008; Kang & Chang, 2016; Lanham & Zhou, 2003; Liu et al., 2010; Wang & Reeves, 2007).

Technical Problems

Although offering numerous benefits, digitalisation with evolvingly advanced technologies also brings a number of technical problems that challenge the teaching and learning for international students. For example, doing online collaborative experiments requires a strong and stable Internet bandwidth (May, 2020) while a number of international students have been faced with disruptions and slow speed of the Internet (Demuyakor, 2020; Hughes, 2013; May & Tekkaya, 2016). In other cases, international students are also challenged by hardware breakdowns and software incompatibilities among digital devices (Hughes, 2013; Mujico & Lasagabaster, 2019) which greatly disrupt the teaching and learning process. Furthermore, international students also raise a concern about cyberspace security as they sometimes have to use their personal social media accounts or share online documents in online classes (Htay et al., 2020; Mujico & Lasagabaster, 2019; Sleeman et al., 2020).

Other Challenges

Besides the above-mentioned issues, there are several digital challenges affecting the teaching and learning of international students. Firstly, given digital education takes place in cyberspace, the partial absence of real-world elements is ineluctable. A number of researchers reported that the conspicuous lack of paralinguistic features in online courses, such as facial expressions, frowns, reactions, body language, or using drawing graphics, puts more pressure on international students in communicating with other classmates which, in turn, affects their learning experiences (Karkar-Esperat, 2018; Wang & Reeves, 2007). Secondly, taking synchronous online classes from different locations around the world causes time-zone challenges for international students which is commonly neglected by course designers (Demuyakor, 2020; Liu et al., 2010; May & Tekkaya, 2016; Zhang & Kenny, 2010). Thirdly, the affordability of accessing digital learning could also be an economic matter for international students from countries where database use and internet data are expensive (Demuyakor, 2020; Hughes, 2013).

Discussion

With regard to the first research question, there are five main forms of digitalisation applied in international education. Firstly, online learning with the support of CMC emerges as the dominant form of digitalisation of the teaching and learning for international students. This mode of delivery is generally viewed as the alternative to classroom teaching or face-to-face learning. The term online learning is used as an umbrella term covering other sub-categories such as online learning platforms, web-based programs, video-based programs, mobile technologies, and combined use of online resources. Secondly, the emerging application of VR technology for international education, particularly for teaching engineering subjects, is futuristic and pedagogical. Thirdly, the widespread use of SNSs leverages the importance of social media platforms in teaching and learning for international students. Fourthly, ASR and ICC show great prospects for international education although research on them is relatively limited. Lastly, several studies present the use of digital technologies combined with traditional teaching methods, which is otherwise known as blended learning.

In terms of the second research question, international students have mixed responses regarding how they experience digital education. On the one hand, a number of students have positive experiences that are attributable to flexibility, real-life interactions, and unimpeded feelings. On the other hand, some reported negative experiences owing to disconnectedness, language barrier, digital illiteracy, and health issues.

In light of the last two research questions, digitalisation brings various opportunities together with numerous challenges to international students. On the beneficial side, digitalisation facilitates global cooperation, interpersonal collaboration, learning autonomy as well as possibilities to cater to international students' diverse learning needs. Nevertheless, digitalisation also poses a handful of challenges for international students, such as cross-cultural issues, technical problems, expenditure, time-zone differences, and paralinguistic absence.

The findings of this study provide several implications for teachers, academics, education providers, students and policymakers in utilising digital technologies and adapting pedagogies in digital and blended delivery for international students in higher education. Firstly, the findings from the third and fourth research questions show that each form of digitalisation has its own pros and cons. This finding underscores the importance to ensure the flexibility of the execution of digitalisation for international higher education. More specifically, Whalley et al. (2021) highlighted that hybrid-flexible forms of course design should be put into consideration in order to include a wide range of students from diverse backgrounds. Besides, teachers and education providers should also be considerate with regard to the affordances of digital technologies in teaching and learning activities to ensure "the learner at the heart of any pedagogical intervention" (Bonfield et al., 2020, p. 243).

Secondly, the negative experiences analysed in this systematic review elucidate how human factors, namely the technology-related readiness of both teachers and students, play a critical role in applying digital technologies to the international education sector. However, a number of researchers revealed that the opposites happened in practice. Amirault (2021, p. 19) asserted that "educators are always situated at the later end of the technology lifespan continuum". Chang et al. (2020), on the other hand, alerted that digitalisation creates intricate and novel information ecologies where international students become disadvantaged vis-à-vis their domestic counterparts. Therefore, equipping teachers and international students with proficient digital literacy should be viewed as a matter of urgency in ensuring all stakeholders fully benefit from digitalisation.

Thirdly, based on the findings summarised in the proceeding section, research on digitalisation for the teaching and learning of international students disproportionately focuses on language teaching for non-native speakers. This, therefore, reflects an urgent need for a more comprehensive understanding of the applications of digital technologies to other wider international education areas, such as teaching university subjects or vocational training. Also, most identified articles pay attention to the execution of online learning in teaching international students while research on the use of VR technologies, which have transformative potential in this regard (Schmidt & Tang, 2020), is scanty. This study calls for

extensive research on the application of VR technologies for education in general and the international education sector in particular.

Concluding Remarks

This study examines 35 articles to explore the digitalisation of teaching and learning for international students. It focuses on the forms of digitalisation, international students' experiences as well as opportunities and challenges posed by digitalisation. This research highlights the need for flexible application of digitalisation for the international education sector, with hybrid-flexible course designs recommended to accommodate diverse international student backgrounds. This study emphasizes the need to invest in human resources, especially digital literacy, to ensure that international students are placed at the center of the digitalisation. This review also stresses the urgent need for a more comprehensive understanding of how the latest digital technologies, for example, VR, can be applied to other areas of the international education sector, such as university subject teaching or vocational training.

This systematic review has several inevitable limitations. Firstly, as this study searched relevant data only on WoS, Scopus, and EBSCO, articles on other databases, therefore, could have been missed. Future studies, therefore, should extend the scope of research on this topic to other scientific databases, such as Proquest or ERIC. Secondly, because the focus of this study is the digitalisation of teaching and learning for international students in the higher education sector, several major digital technologies, which are widely applied to other groups of students, could have been excluded from this study.

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Appendix A
Thirty-Five Articles for the In-Depth Review

1	A model of independent learning applied to the online context, Warring (2013)
2	Blended learning with international students: A multiliteracies approach, McPhee and Pickren (2017)
3	Computer assisted language learning and the internationalisation of the Portuguese language in higher education contexts, Sevilla-Pavón (2015)
4	Coronavirus (COVID-19) and online learning in higher institutions of education: A survey of the perceptions of Ghanaian international students in China, Demuyakor (2020)
5	Cross reality spaces in engineering education - Online laboratories for supporting international student collaboration in merging realities, May (2020)
6	Cultural differences in online learning: International student perceptions, Liu et al. (2010)
7	Cultural issues in online learning - Is blended learning a possible solution?, Lanham and Zhou (2003)
8	Developing academic literacy through self-regulated online learning, Lear et al. (2016)
9	Effective prediction of errors by non-native speakers using decision tree for speech recognition-based CALL system, Wang and Kawahara (2009)
10	Enhancing L2 motivation and English proficiency through technology, Mujico and Lasagabaster (2019)
11	Examining culture's impact on the learning behaviors of international students from Confucius culture studying in western online learning context, Kang and Chang (2016)
12	Experiences and challenges of international students in technology-rich learning environments, Habib et al. (2014)
13	If we build it, will they come? Adoption of online video-based distance learning, Geri (2011)
14	Intelligent cloud learning model for online overseas Chinese education, Chen et al. (2015)
15	International graduate students' challenges and learning experiences in online classes, Karkar-Esperat (2018)
16	International students using online information resources to learn: Complex experience and learning needs, Hughes (2013)
17	International students' transition to university: Connection and disconnection in online group work interactions, Sleeman et al. (2019)
18	Internet supplements for English vocabulary and reading development to empower autonomous international students, Perren (2010)
19	Introducing 'Prepare for Success', a web-based learning resource to help international students get ready for study in the UK, Watson (2011)
20	Learning in an online distance education course: Experiences of three international students, Zhang et al. (2010)
21	Multimedia technologies of teaching "Russian language" to foreign students at the initial stage, Yuhan (2017)
22	Postgraduate students' perspective on using Twitter as a learning resource in higher education, Htay et al. (2020)
23	Social media, learning and connections for international students: The disconnect between what students use and the tools learning management systems offer, Sleeman et al. (2020)
24	Study on the effectiveness of the ASR-based English teaching software in helping college students' listening learning, Zhao (2017)
25	Synchronous online learning experiences: The perspectives of international students from Taiwan, Wang and Reeves (2007)
26	The adaptation of Chinese international students to online flexible learning: Two case studies, Chen at el. (2008)
27	The evaluation of online course of Traditional Chinese Medicine for MBBS international students during the COVID-19 epidemic period, Zhang et al. (2020)
28	The potential of a mobile group blog to support cultural learning among overseas students, Shao and Crook (2015)
29	The resonance factor: Probing the impact of video on student retention in distance learning, Geri (2012)
30	Towards understanding international graduate student isolation in traditional and online environments, Erichsen and Bolliger (2011)
31	Transnational connected learning and experimentation - Using live online classes and remote labs for preparing international engineering students for an international working world, May and Tekkaya (2016)
32	UKBI: Experimental development of web-based Indonesian language proficiency test for foreign speakers, Oktriono (2019)

33	Use of information technologies in studying phraseology in the course of Ukrainian as a foreign language, Azarova et al. (2020)
34	Using e-learning to support international students' dissertation preparation, Sloan et al. (2014)
35	When Chinese learners meet constructivist pedagogy online, Chen and Bennett (2012)

Empirical Article

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Exploring the Impact of Study Abroad on Students' Intercultural Competence: The Case of Myanmar

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ABSTRACT

Today's increasingly heterogeneous world imposes demands on higher education institutions to develop university students' intercultural competence (IC) so that they respond constructively to the cultural challenges of the 21st century. This study aims to explore the impact of short-term study abroad programs on the development of students' intercultural competence. 17 semi-structured interviews were conducted with Myanmar undergraduates who participated in study-abroad programs to get an in-depth understanding of their study abroad experiences. Thematic analysis was employed to examine how these programs influence their attitudes toward the native culture, the host culture and cultural differences, and their intercultural interaction. The main findings reveal that study abroad enhances students' IC, confirming the five elements of IC by Deardorff (2008): attitudes, knowledge and comprehension, skills, desired internal outcomes, and desired external outcomes, with an emerging aspect 'recommendation' based on 'cultural reflection'. Specific implications are offered to university administrators and decision-makers of Myanmar higher education on the basis of the findings.

Keywords: higher education, intercultural competence, Myanmar, studying abroad, undergraduate students

INTRODUCTION

As a result of increasing globalization and its impact on the world economy, higher education institutions need to prepare students who are well equipped with a set of skills, ensuring that they are qualified for the highly competitive global job market. The Organization for Economic Cooperation and Development (OECD) placed emphasize on that 'citizens need not only the skills to be competitive and ready for a new world of work, but more importantly they also need to develop the capacity to analyze and understand global and intercultural issues' (OECD, 2018, p. 2). Educational leaders have realized

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that it is important to foster the competence development of graduates to adapt to the rapidly changing demands of world economy.

Imperatives of growing multicultural societies and technological advancements have raised the urgency for intercultural competence. The world has been in transformation into multicultural societies as a result of increasing cross-border movements. Such population shifts have escalated political and social tensions. Furthermore, modern communication technologies make people across the world possible to be connected with people in other places thousands of miles away so considerable attention has been paid to intercultural competence in the global village. Higher education institutions are patently not exempt from these imperatives for intercultural competence (Lustig & Koester, 2013).

A growing acknowledgement of the vital role of developing intercultural competence (IC) can be seen in international education (Lustig & Koester, 2013; UNESCO, 2013). Specific goals of a higher education institution may not be the same as another, but academic and intercultural competencies are common targets to most institutions (Maharaja, 2018; Stier, 2003). A similar view was expressed by Lambert (1994), and Mahoney and Schamber (2004), stating that IC development is one of the goals of Higher Education and students' IC can be increased through participating in study abroad programs which offer one of the trendiest global education experiences (Brandner, 2016). However, Stier (2003) recommended that educational considerations should be given not only to internationalization but to the ethnic diversity of domestic students for enhancing IC of students. This author claimed that study/training abroad programs are beneficial, but not enough, so taking full advantage of the competencies and experiences of students with cultural diversity (e.g., immigrant students) would be valuable in intercultural learning.

Educators and administrators in higher education institutions are called to support their students to enhance IC to an increasing extent (Deardorff & Arasaratnam-Smith, 2017; Griffith, Wolfeld, Armon, Rios, & Liu, 2016). The ministry of education in Japan has started initiatives to fund short-term study abroad scholarships for Japanese students, aiming to alleviate the alarming shortage of a local workforce adequately equipped with the necessary skills to respond to the demand of increasing multicultural workplaces. Consequently, over the last few years, short-term study abroad programs are more popular than joining degree programs in foreign countries among Japanese undergraduate students, in light of new governmental education policies (Koyanagi, 2018).

In Myanmar, both undergraduate and postgraduate students have been increasingly interested in study abroad programs and many of them have applied for scholarships for these programs in recent years. Despite a number of studies and a lot of development in the area of IC, both pre-departure expectations and post-study abroad experiences of Myanmar students have been underexplored domains so this research takes the first step to fill this research gap by focusing on post-intercultural experiences. Moreover, the literature suggested that the process model of intercultural competence by Deardorff (2008) might be relevant but this model needed confirmation by application of this model to the sample in different contexts. These two identified gaps were the basis for the study and a rationale for empirically exploring the intercultural experiences of Myanmar participants.

This research aims to explore how study abroad programs influence the intercultural competence of Myanmar undergraduates, contributing to the theoretical understanding of IC through confirming the five elements of IC: attitudes, knowledge and comprehension, skills, desired internal outcomes, and desired external outcomes, and further developing the understanding of the complex and multifaceted nature of IC. The research questions are as follows:

1) How has study abroad experience influenced Myanmar students' attitudes toward the native culture, the host culture and cultural differences?
2) How has study abroad experience affected their intercultural interaction?

Literature Review

With the increasing number of study-abroad and sojourn programs across the world, the growing body of literature can be found in the field of IC. The previous studies reveal that favorable outcomes of study abroad are academic, career,

intercultural, social, and personal development (Allen, 2010; Dwyer, 2004; Kehl & Morris, 2007; Lenkaitis, 2019; Maharaja, 2018; Orahood et al., 2004). Moreover, other studies have provided evidences that study abroad helps university students to enhance their intercultural competence (Kitsantas, 2004; Kitsantas & Meyers, 2001; Medina-Lopez-Portillo, 2004; Olson & Kroeger, 2001; Williams, 2005). Development of IC has been found to be associated with students' goals (Kitsantas 2004) and to the program duration (Medina-Lopez- Portillo, 2004; Olson & Kroeger, 2001). Medina-Lopez-Portillo (2004) found that the previous travel abroad experience was related to the intercultural sensitivity development among the US students.

Regarding studies with Myanmar participants, Moe (2021) undertook a qualitative study to explore the challenges faced by international Myanmar female students at a Chinese university and the factors influencing their resilience to continue their graduate studies. Results revealed that language and academic problems, and psychological distress are the major challenges. Furthermore, internal factors such as self-confidence and external factors such as social support were contributing factors to their resilience development while studying abroad. In addition, Sam et al. (2013) explored academic adjustment issues of Cambodian, Laotian, Myanmar, and Vietnamese graduate students at a Malaysian Research University. The results of the qualitative study showed that English language difficulty was the main challenge in term of academic adjustment in their new academic environment.

As regards employment skills development, Sisavath (2021) conducted a mixed-methods study to investigate the advantages of studying abroad for graduate students' employability in the context of Lao. The findings revealed increase in job prospects, in terms of enhanced interpersonal and communication skills, teamwork, and problem-solving and analytical skills. In addition, a qualitative study was conducted by Yarosh et al. (2018) who explored IC of graduate students, enrolling in Erasmus Mundus Joint Master Degree programs. This study investigated the learning needs of the students in light of how they respond to intercultural challenges. Interview data were thematically analyzed and they reveal that knowledge, awareness, skills and attitudes are IC elements that enable the students to overcome intercultural challenges.

Using a quasi-experimental procedure, Yashima (2010) pointed out that Japanese young people's IC was developed through international volunteer work experiences. The results demonstrate that the international project participants achieve significantly higher IC than non-participants. From an aspect of cognitive modification, Koyanagi (2018) investigates how intercultural communication influences Japanese students who participated in short-term study abroad programs. Questionnaire data show that study-abroad experience extends their horizons and the interview data categorized five outcomes of these programs: "utilization of English language, interpersonal communication skills, involvement in global society, opening doors to greater possibilities and positive attitudes towards living" (p. 105). This study proved that intercultural communication can help students realize and modify their cognitive appraisals which have roots in their native culture.

Regarding the IC and personal development of college students, Maharaja (2018) conducted a qualitative study to explore the outcomes of the study abroad programs for American students. Developmental Model of Intercultural Sensitivity (DMIS) by Bennett (1993) and Cross-Cultural Adaptability Inventory (CCAI) (Kelley & Meyers, 1995) were used to analyze the students' personal essays on their study abroad experience. Results reported that the study abroad experiences increased IC and personal development, gaining insights into their own and foreign cultures and cultural differences.

Schartner (2016) conducted a longitudinal study to investigate the effect of study abroad on intercultural competence of international graduate students enrolling in a British university. Quantitative data showed that IC enhancement in terms of emotional stability was found and interview data provided evidences of some intercultural gains such as improved intercultural awareness, ability of stereotype deconstruction and increased confidence in intercultural communication.

On the contrary, Forsey et al. (2012) casts doubt on the reported favorable outcomes of study- abroad or sojourn abroad experiences. They argue that although 14 Australian students reported that they enjoyed living and studying abroad, it was difficult for them to articulate what they had learned from these programs. Additionally, Koyanagi (2018) declares that simply sending students abroad is not sufficient and then examining the real impact of these programs is important for

higher education institutions. Therefore, the impact of studying abroad on the intercultural competence of Myanmar students is worthy of exploration to offer some implications to educators and administrators in higher education institutions in Myanmar.

There are a few prior studies (e.g., Moe, 2021; Sam et al., 2013) that explore the challenges, academic adjustment and resilience development of Myanmar graduate students at foreign universities but to the best of the authors' knowledge, no study was undertaken to examine the impact of studying abroad on Myanmar undergraduate students' intercultural competence. In addition, this study is an attempt to lends the voice of students from Asian countries, that has been little found in the literature on study abroad programs (Roy et al., 2019; Sisavath, 2021). Therefore, the present study aims to fill this gap, exploring how study abroad programs influence Myanmar undergraduate students' attitudes toward the native culture, the host culture, and cultural differences, and their intercultural interaction.

Theoretical Construct

Although 'Intercultural Competence' has been operated and defined by different scholars over the last three decades, there has been no consensus on single definition (Deardorff, 2006). It was defined as "effective and appropriate behavior and communication in intercultural situations" (Deardorff, 2011, p. 66). Regarding the IC models in the literature, Byram (1997) developed a framework with five elements: attitudes, knowledge, skills of interpreting and relating, skills of discovery and interaction, and critical awareness. Bennett's model (Bennett, 1998) of intercultural development has been a widely used model as a useful tool, 'Intercultural Development Inventory (IDI)', to measure IC through intercultural experience (Hammer et al., 2003). With six stages (denial, defense, minimization, acceptance, adaptation, and integration), this model received attention in the field of intercultural communication. Fantini and Tirmizi (2006) formed the KASA acronym in the sequence of Knowledge, Attitudes, Skills and Awareness to explore the IC development. However, Yarosh et al. (2018) believed that there was a strong interconnection between knowledge and awareness so their model encompasses four elements: Knowledge, Awareness, Skills, and Attitudes (KASA) by reviewing the IC models and synthesized them to explore the intercultural development of students who joined international joint master programs.

Despite various options available in the literature, we found Deardorff's (2006, 2008) theory to be more useful in observing IC in this study. Deardorff (2006) undertook a nationwide study that was the first attempt to determine an agreed upon definition and elements of intercultural competence among eminent intercultural scholars in the U.S. Although Deardorff's theoretical construct on IC was developed in the middle of the 2000s, its applicability can be found in recent studies (Dalib, et al., 2017, 2019; Hofmeyr, 2021; Louis & Grantham, 2019; Vuksanovic, 2018). Dalib and colleagues (2017) sought to discover how international students reflected their intercultural competence acts in daily situations in the Malaysian cultural setting by 'bracketing' Deardorff's model. In comparison to Deardorff's model, common elements of intercultural competence were found in their study results. In addition, Vuksanovic (2018) employed Deardorff's intercultural model to examine the relationship among ESL learners' intercultural competence, L2 attitudes and use of technology in the U.S. setting. Louis and Grantham (2019) suggested Dardorff's model as a suitable framework in intercultural training for community police officers by bridging the gap between theory and practice. Hofmeyr (2021) compared and contrasted the Global Human Resources (GHR) concept in the context of Japanese higher education and western perspectives on intercultural competence utilizing Deardorff's IC model.

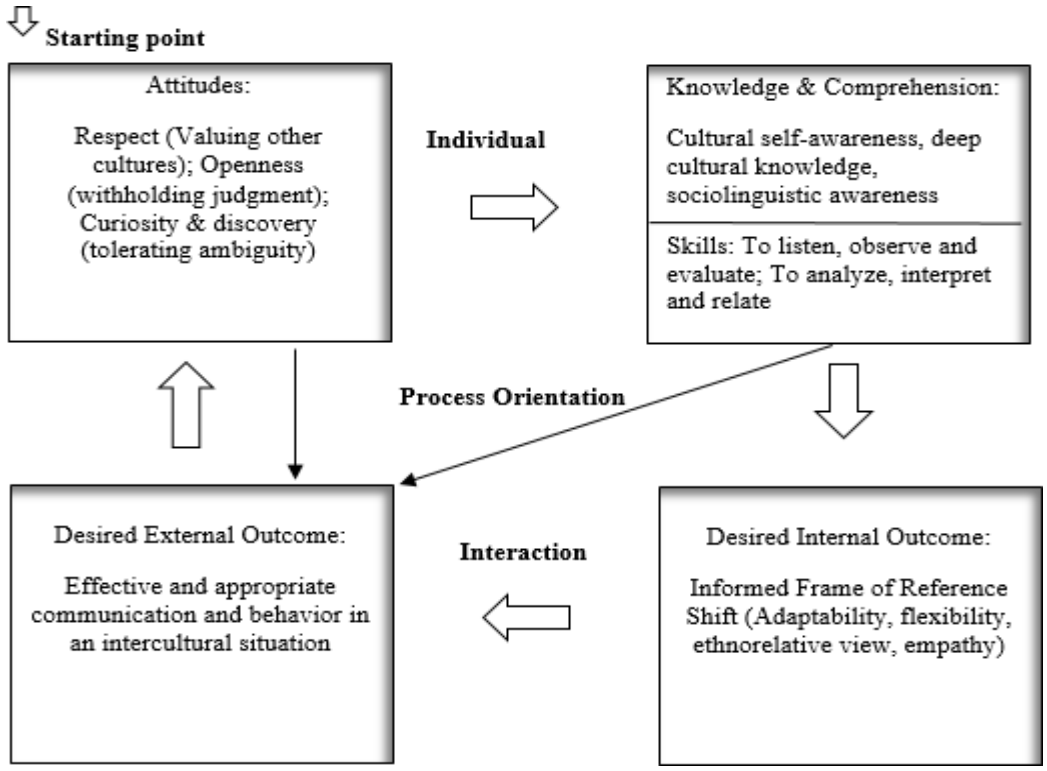
It is acknowledged that the Western expertise provided a solid foundation for comprehending intercultural competence (Yep, 2014). In addition, we admit that Deardorff's 2008 construct represents the Western (mainly US-centric) perspective of intercultural competence. Although some scholars questioned applicability of a theoretical aspect to the context outside a specific culture, Chen (2009) claimed that how foreign elements are handled appropriately in a particular setting is important in cultural studies. Chen further posited that researchers can explain their study results with new elements emerging from the specific cultural contexts, employing the foreign theoretical knowledge. Similarly, some scholars (Dalib, et al., 2017) maintained that other cultures (including south east Asian culture) can take the advantages of

exploring their research site while comparing locally specific findings with the western theoretical knowledge on intercultural competence. Furthermore, in the present study, the participants enrolled in English medium programs and they mostly used English in classes and for social interactions with their peers.

The process model of intercultural competence by Deardorff (2008) (Figure 1.) explains the development of intercultural competence with the components of attitudes, knowledge and skills. Two additional components 'internal and external outcomes' are unique items, leading to further IC development. Some previous studies employed this model to explore IC of academic advisors, undergraduate students' IC development during a semester abroad and how intercultural training were implemented (Covert, 2014; Zenner & Squire, 2020; Zur, 2019).

Figure 1

Process model of intercultural competence (Deardorff, 2008)



This model was chosen for the current study as it provides the development of specific IC components in a context or situation as well as explaining general development of intercultural competence. Another significant feature of this model is the movement from the starting point 'attitudes' (the individual level) to 'external outcomes' (the interactive cultural level) that can be fundamentally delineated as "behaving and communicating appropriately and effectively in intercultural situations" (Deardorff, 2004, p. 196). Furthermore, Deardorff's model shows how individuals' intercultural competence develops in the continual process of the improvement and it does not a linear, but circular IC improvement and so is the first non-linear one of IC model types (Zur, 2019). The current study, thus, used this model by Deardorff (2008) to explore IC development of Myanmar students, participating in international study-abroad programs.

Research Method

According to Creswell (2012), methods of data collection within a phenomenological study can consist of interviews, focus groups, and written or oral self-reports of participants' experience so semi-structured interviews were used in this study. Qualitative research methods through interviews allow researchers to receive rich and in-depth data. Semi-structured interviews were employed in this study because it helps researchers to encourage the participants to share their perceptions experiences with freedom and to elicit in- depth responses from them. Furthermore, semi-structured interview is a data collection tool that offers the interviewer the opportunities to probe into deeper issues with the flexibility of asking clarifying questions when necessary (Creswell, 2009).

Data on Myanmar students' IC were collected through a series of semi-structured interviews conducted face to face before the confirmed COVID cases was found in Myanmar and via telephone during the pandemic. Interview questions

Table 1

Demographic Information of Participants

Code	Gender	Age	Discipline	Host Countries	Duration
S1	F	22	English	Sweden & Thailand	2 semesters (1 semester in each country)
S2	F	21	Psychology	Thailand	1 semester
S3	F	22	English	Cambodia	1 semester
S4	F	22	English	Thailand	1 semester
S5	F	22	English	Malaysia &Sweden	2 semesters (1 semester in each country)
S6	F	22	Mathematics	Vietnam	1 semester
S7	F	22	Mathematics	Philippines	1 semester
S8	F	22	English	Vietnam	1 semester
S9	M	21	Law	Cambodia	1 semester
S10	M	20	Physics	Sweden	1 semester
S11	M	20	History	Indonesia	1 semester
S12	M	20	Zoology	Sweden	1 semester
S13	M	20	Zoology	Malaysia	1 semester
S14	M	19	Anthropology	Netherlands	1 semester
S15	M	20	English	Japan & Thailand	2 semesters (1 semester in each country)
S16	M	20	Geology	Japan & Malaysia	2 semesters (1 semester in each country)
S17	M	22	Chemistry	Sweden	1 semester

were prepared based on the previous studies and emphasized four research areas of interest: their attitudes towards the native culture, the host culture, cultural differences and intercultural interaction (e.g., How has your study abroad experience influenced your attitudes towards the native culture? Can you give me some examples of how this experience has changed your attitudes to your native culture?).

Each respondent was interviewed in the Myanmar language and each interview lasted for about 30 minutes. The participants were guaranteed that the data would be only used for academic purposes and the data would remain confidential. The interviews were recorded and transcribed. To code the collected data, the interview transcripts were read rigorously to get a comprehensive view of the data. Manual coding was conducted and color-coding technique was used as proposed by Creswell (2009) to gain the profound insights from colored coded themes. Themes were generated from the most recurring codes. The coding and analysis will be related to the five elements of IC: attitudes, knowledge and comprehension, skills, desired internal outcomes, and desired external outcomes.

Participants This research is a phenomenological study as it seeks to understand intercultural experiences of Myanmar students. Creswell and Creswell (2017) roughly estimated that 3 to 10 participants may be sufficient for this kind of study based on a review of several qualitative research studies. The participants for this study were 17 undergraduate students studying at Mandalay University who went abroad for a semester-long study. The interviews were done between six months and one year after the participants returned home. Of 17, there are 8 participants identifying as female (47%) and nine identifying as male (53%). These participants were with relative homogeneity in terms of their age, ranging between 19 and 22 years (M = 21, SD = 1.06). Among them, 13 (76%) studied in a foreign country for a semester and four (24%) participated study abroad programs for two semesters.

Results

This section focuses on how study abroad experience influences the students' attitudes toward the cultural differences and intercultural behaviors, covering four main themes: native culture, host culture, cultural differences and intercultural interaction.

Native Culture

The basic component described by the process model of intercultural competence (Deardorff, 2008) is 'attitudes' and in this study, the findings point out that the majority of the students developed new attitudes toward the native culture after participating in one-semester study abroad programs. As regards the sub-components of 'Attitudes', the data reveal that these attitudes include valuing, critical views and curiosity about their own culture.

Many students became aware to value the traditional wears and a student reported:

"Regarding the dress code, even in ASEAN countries like Thailand, they wear traditional dresses only in ceremonies but in Myanmar, many people wear traditional outfits on a daily basis. I have been aware to value these Myanmar traditional wears." (S5)

On contrary, another student assumed that wearing traditional outfits all the time is not appropriate especially in the hot season and noted:

"…the weather is hot so I think that the dress code should be less conservative in our culture." (S2)

Many participants have become critical of their own culture by having negative attitudes towards it. In relation to different closing times of hostels based on gender, a student commented:

"In Myanmar, the female hostel is closed at 7 pm but in Vietnam it is closed at 11pm. I feel that students are accepted as mature in the host culture" (S6)

Table 2

Qualitative Results 1 (Native Culture)

Superordinate theme	Theme	Themes' Description
Native culture	Attitudes	Valuing the native culture
		Critical view on the native culture
		Curiosity about the native culture
	Knowledge and Comprehension	Awareness and knowledge of the native culture
		Searching for the information about the native culture
		Deep understanding of the native culture
	Skills	Reflecting the native culture
		Evaluating the native culture
	Cultural Reflection	Recommendation for the native culture after observing other cultures
	External Outcomes	Explaining the native culture to people from other cultures

In addition, Student (8) and (13) criticized the different closing times for male and female hostels, underscoring the gender discrimination in the educational context in Myanmar:

"In Myanmar, female hostels for university students are closed at 7:00 pm but for male students, the hostels are closed at 11.00 pm. I feel it is a kind of gender discrimination" (S-13)

The data revealed that many participants gained awareness, knowledge, and deep understanding of the native culture after exploring the information about their own culture as they wanted to share the native culture knowledge with peer international students. A student reflected: "When I was abroad, I wanted to explain the native culture to friends so I learned about it" (S15)

Another student mentioned how she reflected and evaluated the native culture after study abroad experience:

"After returning home, I have valued my culture and become a devout Buddhist more than before by reading religious books and evaluating my religion again." (S6)

Some participants mentioned that they wanted to explain their own culture that foreign people may misunderstand. One of the participants reported how he explained the cultural and political context of his own country to others in the host country.

"…my classmates and teachers asked me about religious conflicts in my country. I explained them that most religious conflicts are part of political scandals and most Myanmar people respect each other regardless of religion. You can see pagodas, churches and mosques in central parts of Yangon, the largest city in Myanmar" (S11)

The findings indicate the participants' critical views of their own culture and some of the students who went to European countries proposed recommendations for the native culture after observing other cultures: more openness should be developed between males and females, dominance of seniors should be reduced in the working culture, and learner-centered approach should be encouraged in the classroom culture in Myanmar. For instance, a student who went to Sweden suggested:

"I needed to undertake a study visit in Sweden, and based on this experience I needed to write a report by combining theories and practice. There should be projects like this in the courses of Myanmar universities." (S17)

In general, participants' attitudes changed while and after study abroad experience, revealing more respect or more critical attitudes toward their own culture. It appears that participants who returned from western countries like Sweden and Netherlands have become more critical of the native culture, and given some recommendations based on reflection of intercultural awareness and observation. This may be because they experienced more cultural differences in the western context than in the eastern environment.

Host Culture

The participants of this study reported how they have changed their attitudes and gained insights into the host culture and its people. Most of them also reflected their development of observation and evaluation skills, and adaptive behaviors in the host culture. The majority of the students expressed positive attitudes towards the host culture by mentioning that they prefer flexibility, friendliness, gender-equality, work-life balance, self-reliance of the people in the host culture. However, few students reported that although they expected friendliness from the host people, they did not receive it whereas many of them expressed that they changed their attitudes from negative to positive during this experience, observing and evaluating the host culture. A participant noted:

"I was anxious to go to Europe as I thought they were not helpful but my expectation was wrong. They are very friendly." (S17)

In a similar view, another student who went to Indonesia reported that how he observed the host culture and how he shared his cultural practices with foreign friends:

"I also visited and observed a mosque, and their religious practices while they were worshipping. I realized that they were devout Muslims and I respected them. I also made up my mind to become a devout Buddhist. After that program, Indonesian friends visited my country and I took them to places including Bagan which is famous for its ancient pagodas in Myanmar and they observed religious practices in Buddhism." (S11)

A student noted how he learned the language of the host country and he developed linguistic awareness, comparing the native and host languages, as well as sociolinguistic awareness by noticing how people of different cultures used English expressions differently. He reflected:

"I learned the Cambodian language as much as I can in my free time. The word order of the Cambodian language is not the same as the Myanmar language but it's like English… Although we use the linguistic term 'monastery' for a building in which monks live together but they use a different expression 'pagoda' for it." (S9)

A student reported his awareness of gender equality by mentioning in Sweden, women are recruited as bus drivers but in Myanmar, women bus drivers are hardly found.

"The first thing I want to talk about is gender equality in Sweden. When I was in Sweden, what I noticed was that some bus drivers are women." (S10)

Many students stated that they managed to behave flexibly and adaptively in the host culture. A student reflected how she could adapt to the classroom culture of a new academic context by 'behaving appropriately and effectively in intercultural situations' (Deardorff, 2006, p.249):

"When we do peer review in the class in Myanmar, we usually give each other positive comments, avoiding negative ones. When I did the peer review in the classroom of the Vietnam University, my partner was from Thailand. Although I noticed some weak points in her work, I did not mention them. I was surprised when she pointed out many weak points of my work. Later, I could accept it and I discussed openly both positive and negative points with them." (S8)

Overall, attitude change from stereotype views to non-stereotype perspectives seemed to be a highly discussed component, and flexible and adaptive behaviors in intercultural situations were also frequently expressed by the participants.

Table 3

Qualitative Results 2 (Perceptions of Host Culture)

Superordinate theme	Theme	Themes' Description
Host culture	Attitudes	Attitude change
		Withholding judgment of the host culture
		Curiosity about the host culture
	Knowledge and Comprehension	Awareness and knowledge of the host culture
		Linguistic awareness and knowledge of the host culture
	Skills	Observing the host culture
		Evaluating the host culture
	External Outcomes	Flexible and adaptive behaviors in the host culture

Cultural Differences

Most participants revealed their awareness and insights into cultural differences, comparing the native and host classroom cultures and a student noted:

"In Thailand, teachers raise many questions in classrooms and they listen interestingly to students' ideas. Discussion is encouraged in the classroom there. In contrast, Myanmar teachers usually give lectures and explain the concepts in detail in the classroom" (S2)

Some students had skills to analyze, interpret and relate to the reasons of different cultural behaviors and one student noted:

"I understand people behave differently depending on the culture they were raised." (S1)

Table 4

Qualitative Results 3 (Perceptions of Cultural Differences)

Superordinate theme	Theme	Themes' Description
Cultural Differences	Attitudes	Attitude change (Respect for cultural differences)
		Curiosity about different cultures
	Knowledge and Comprehension	Awareness and knowledge of the cultural differences
	Skills	Interpreting and relating to the reasons different cultural behaviors
	Internal outcome	Flexibility
		Ethno-relative view
		Generalized view of cultural differences
	Cultural reflection	Recommendation for building intercultural friendship

Many students showed respect and acceptance of the cultural differences and a student reported:

"I think I should not show disrespect for culture differences and we need to accept them as they are. Their culture is different from us and we don't need to follow it but we must accept it." (S3)

Some students expressed their ethno-relative views of cultural differences and how they changed their perceptions and behaviors, developing intercultural friendships after their study abroad experience. One student reflected:

"I have realized that in every culture there are some good and bad points. I thought I could not have a close friendship with people from different cultures but now I have a lot of friends from different cultures." (S13)

Some students provided some suggestions for developing intercultural friendship, stating that common interests, ideas and goals, interaction time, and humanity played key roles in building intercultural friendship. "Regardless of religion and culture, we should show humanity and can become close friends." (S8)

Generally, the data show that most students expressed awareness and knowledge of cultural differences by comparing similarities and differences between two cultures. In addition, many of them offered suggestions for how to build intercultural friendship.

Intercultural Interaction

The majority of the participants expressed that they gained confidence in using English in intercultural interaction during and after study abroad experience. In addition, they were aware that other international students often made language mistakes like them. As a result, they have become no longer worried too much about making mistakes in communication in English. Moreover, they developed convenience and confidence in intercultural conversations. One participant reported:

"While I was in Sweden, I noticed that other international students like Italians and French make some mistakes while speaking English as well. Then I realized that the purpose of communication is to understand each other among the interlocutors. After participating in this program, I feel more confident of my interaction skills." (S10)

Similarly, another student expressed how she has developed her intercultural communication skills after study abroad experience.

Table 5

Qualitative Results 4 (Intercultural Interaction)

Superordinate theme	Theme	Themes' Description
Intercultural interaction	Attitudes	Open mindedness in intercultural interaction
	Knowledge and Comprehension	Awareness and knowledge of how others use English
	Skills	Interpreting and relating to the reasons different cultural behaviors
	Internal outcome	Convenience and confidence in using English Convenience and confidence in intercultural interaction Adaptability Ethno-relative view Empathy for foreigners in the native culture
	External outcome	Adaptive and effective behaviors in intercultural interaction Offering help to foreigners in the native context

"I prepared some greeting phrases and topics to talk about, referring to English-speaking course books. But now, I do not prepare anything, and I converse with people from different cultures with natural responses and without tension. I think my intercultural interaction is more effective now." (S1)

Many of the participants reflected that they developed the ethno-relative views and empathy in intercultural interaction, leading to effective intercultural behaviors.

"Now I can accept different cultures, but in the past, I had anxiety to interact with people from Islamic culture. Now I understand that every society has good and bad people…I am ready to make friends from different cultures. I had a close friendship with Filipino friends as we spent a lot of time interacting together." (S4)

In a similar view, another student noted how she has developed cultural empathy and confidence in intercultural encounters.

"I feel empathy now when I meet foreign students in my country as I faced many difficulties in Vietnam…So now when I meet foreigners who seem to lose their ways, I start to greet and ask them how I can help them. I have more confidence in my intercultural interaction" (S6)

Furthermore, many students revealed that they achieved significant progress in intercultural interaction such as avoiding cultural conflicts, and sending wishes to friends from other cultures on their holy days. Furthermore, they mentioned that they adaptively interacted with international friends as they wanted to show appreciation and openness to others' cultures, and to be part of the globalization. One student reported:

"I am now much more confident in conversing with people from different cultures. And then now I often send wishes to my Christian and Muslim friends on their holy days as I want to appreciate their cultures although we are culturally different." (S3)

Increased confidence and convenience in using English was highly expressed as internal outcomes of study abroad experience in the interview data. Furthermore, many of the interviewees reported their external outcomes that they can behave adaptively and effectively in intercultural interaction with cultural awareness, ethno-relative views and improved English language skills.

To sum up, the findings comparing participants studying in eastern and western contexts, both groups of students mentioned that they cherished some Myanmar traditions such as traditional dress, and traditional skincare and cosmetic (Thanakha) more during and after the programs. Moreover, both groups of students reported on their boosted confidence and English skills in intercultural interaction. Students who went to Asian countries appreciated their Asian peers who valued and preserved their traditions (S7, S9) whereas they showed their negative attitudes toward the host people adopting and impressing the western culture (S4, S7).

On the other hand, those who went to European countries seem to have become more critical of the native culture and to have more holistic understanding of culture and society than their counterparts studying in eastern nations. Students who went to Europe noted the difference between the individualistic culture of the western society and collectivistic culture of the eastern society (S1, S12) and different caring cultures for aging parents in eastern and western cultures (S12). In addition, those who studied in European countries reported on little leisure time (S10, S12) and dominance of senior employees (S14) in the native working culture, rote learning of formulae in science education in the native context (S17), and knowledge of LGBT issues and sexual orientations (S5, S10) but no one who went to only Asian countries mentioned these matters.

Discussion

The qualitative analysis of the study discovered development in the intercultural competence of the Myanmar students after completing a study abroad program, focusing on their attitudes towards the native culture, the host culture, cultural differences and intercultural interaction. Applying the process model of intercultural competence by Deardorff (2008) with the five elements of IC: attitudes, knowledge and comprehension, skills, desired internal outcomes, and desired external outcomes, this study attempted to further enhance the understanding of the complicated nature of IC.

Most participants expressed increased intercultural awareness, open-mindedness, ethno- relative views, attitude change, skill development, and appropriate and effective intercultural behaviors after study abroad experience. Many participants reflected that they gained knowledge and awareness of the host culture and its people. Moreover, many expressed that they have developed positive attitudes expressing preferences concerning flexibility, friendliness, gender-equality, work-life balance, and self-reliance of the people in the host culture. However, a few recounted that they received less friendliness from the host people compared to their expectation. This finding provides corroboration for some of the prevailing student abroad studies, which suggests that international students find difficulties in making friends with local people in the host environment (e.g. UKCOSA, 2004; Wright & Schartner 2013; Schartner, 2016).

Interestingly, both male and female participants pointed out the gender issue: different closing time of university hostels for male and female students. This showed that they gained awareness of gender discrimination in the native culture based on intercultural experience. Some students reported that they encountered some difficulties like being lost in a new place in the host country and as a result, they had increased readiness to help foreigners in the native country, indicating the development of cultural empathy. These findings related to increased awareness, cultural empathy and open-mindedness are consistent with some of the international student literature (Maharaja, 2018; Medina-Lopez-Portillo, 2004; Schartner, 2016; Yarosh et al., 2018).

Most participants recounted that they boosted convenience, confidence and skills in using English in intercultural interaction during and after this experience. Some of the participants recounted that their international peer students made mistakes in English like them so they became no longer worried too much about their imperfect English, especially while speaking. In addition, they reflected that they felt less insecurity and anxiety while using English in intercultural communication. These findings are compatible with the previous research by Koyanagi (2018) who found that Japanese students who studied abroad increased their English and communication skills, leading to intercultural friendships. Furthermore, Lao students claimed that English language proficiency improvement as a result of participating in study abroad programs maximized their employment opportunities (Sisavath, 2021).

In addition to the medium of instruction (English), the participants reported that they gained the language proficiency of the host community, especially oral skills. This finding coincides with previous research on host language skills development during study abroad (Magnan & Back, 2007; Martinsen, 2010; Segalowitz & Freed, 2004). Magnan and Back (2007) pointed out that U.S students gained improvement in the host language skills after participating in a semester-long study abroad program in France. Correspondingly, Martinsen (2010) quantitatively investigated changes in U.S. students' oral Spanish skills after six weeks in Argentina, employing native speaker evaluation of student oral proficiency. These results determined that most of these students achieved considerable improvements in their oral skills of the host language throughout their short-term stay abroad.

With regard to intercultural behaviors, many participants seem to have developed skills to recognize behaviors ruled by the host culture, and flexibly and appropriately behave in new cultures even when the host cultural behaviors are unfamiliar given their native context. For example, a participant who was unfamiliar with receiving and giving direct and constructive peer feedback managed to adapt to the new classroom culture. The behavioral changes in intercultural settings are regarded as key indicators of IC (Deardorff, 2006). In addition, some participants seem to appreciate the new cultures and interact actively in intercultural encounters while maintaining their native culture. For instance, some participants mentioned that they took part in the events of the host culture while wearing traditional Myanmar outfits, and sent wishes their Christian and Muslim friends on their holy days while expressing their increased appreciation of Buddhism. In this regard, the integration strategy is defined by Berry (2005), when individuals seek intercultural interaction to be part of the social network of the host culture while maintaining their identity of native culture.

The findings revealed that participants who went to western countries articulated more holistic perspectives on diverse cultures and societies compared to their counterparts studying in eastern nations. It seems that the more diverse cultures they encounter, the more they can compare, reflect and evaluate both the native and host cultures, developing skills to analyze, interpret, and relate which is one of the IC components (Deardorff, 2008).

In regard to the duration of study abroad programs, Hartlen (2011) expressed that many students are aware of the advantages of long-term study abroad programs. This scholar also highlighted that it is important for academic advisers to inform students about the benefits and availability of short-term study abroad opportunities. Dwyer (2004) found that the longer duration of a study abroad experience may lead to better outcomes. However, this study also suggested that a program duration of at least six weeks could result in enormous success in attaining academic, intercultural, personal, and career development. Moreover, study abroad programs with short duration and low costs can be attractive and practical alternatives for those who have some hesitations in commitment to a lengthy program (Lewis & Niesenbaum, 2005).

Many responses supported Deardorff's model (2008) by reporting their development of intercultural competence in line with the key components of this model. Similar findings were found in the qualitative study by Yarosh et al. (2018) who explored IC of graduate students taking part in Erasmus Mundus Joint Master Degree programs. In their study, the interview data indicated that knowledge, awareness, skills and attitudes are IC elements that enable the students to overcome the challenges in an intercultural context.

The process model of intercultural competence (Deardorff, 2008) as an organizational principle has demonstrated useful to offer an IC model based on the qualitative data collected in this research project. Therefore, the results obviously confirmed the relevancy and applicability of this framework to the sample in the Myanmar context. The responses proved that the participants expressed their development of IC, agreeing with all the key components of the model.

According to Deardorff's (2008) model, the starting point of intercultural development is the fundamental category '*attitudes'* and from this point, intercultural outlooks are developed and moved to the second category '*knowledge and comprehension'*. However, the results show that '*attitudes'* can lead to '*knowledge and comprehension'* whereas '*knowledge and comprehension'* of cultural differences can in turn enable participants to develop their '*attitudes'* toward their native culture such as respect. Therefore, both '*attitude'* and '*knowledge and comprehension'* components can be starting points and fundamentally important for internal and external outcomes of this model. Moreover, a new key component '*Cultural Reflection (Recommendation for the native culture after observing other cultures; Recommendation for building intercultural friendship)*' and some new definitions for other components were emerged from the study results. For example, the emerging elements relevant for the intercultural development are 'critical views on the native culture', 'explaining the native culture to people from other cultures', and 'offering help to foreigners in the native context'.

Some important educational implications may arise from this study's findings for policy makers, educators and study abroad program directors in higher education institutions in Myanmar. According to the interview data, some students reflected that they were not familiar with providing constructive peer feedback, participating in classroom discussion, and project-based learning before studying abroad but they revealed that they needed to listen to teacher's lectures in the classes instead. Based on these results, it is suggested that educational leaders in Myanmar arrange some training courses for Myanmar university teachers to adopt the student-centered approach in classrooms. As intercultural competence is one of the main goals of international Higher Education (Lambert, 1994; Mahoney & Schamber, 2004), it may be suggested that decision-makers of Higher Education and study abroad program directors in Myanmar universities take into consideration the prominent role that study abroad experience plays on students' IC development, support overseas study programs to continue and create more opportunities for students to participate in these programs.

Limitations And Suggestions for Further Studies

Concerning the limitations of this research, firstly, the participants of this study are undergraduate students at a university in the middle region of Myanmar and all are Burmese apart from one student so the findings may not provide generalization for Myanmar students from the universities in other regions, as intercultural experiences might vary based on students' cultural backgrounds. Hence, further studies with students from different cultural contexts are called for to confirm the validity of the theory.

Secondly, although this study attempted to qualitatively compare the experiences of students who went to Asian and European countries to some extent, the sample size who went to Europe was quite small. Therefore, a quantitatively

comparative study between students who studied in eastern countries and those in the western context may produce results contributing to the better understanding of intercultural experience.

Thirdly, this study focused on IC development of undergraduate students and most of them spent only one-semester in a foreign country. Thus, future studies should involve graduate students with one or two-year length of overseas study as IC development may vary depending on educational level and length of stay in a foreign country.

Finally, in this study, the cross-sectional data were collected from students after their study abroad experiences so pre- and post-collected data would supply valuable information regarding the enhancement of students' intercultural competence.

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Crossing Boundaries through Collaborative Online International Learning (COIL) during Covid-19: A Participatory Case Study in China

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ABSTRACT

Due to the impact of Covid-19, collaborative online international learning (COIL) increasingly plays an important role in the internationalization of higher education. Based on a participatory case study of a COIL program given at Shanghai University (SHU), this paper explores how students, foreign professors, and professors in China prepare, understand, and experience online teaching, learning, and assessment in a COIL program. Three findings include 1). Organizing COIL Programs with a Global Perspective; 2). Enhancing Teaching and Learning through Intercultural Communication; and 3). The Barriers of COIL in Chinese Universities. Taking insiders' perspectives, we argue that a cultural gap regarding teaching and learning styles can affect COIL programs in Chinese universities, posing challenges for both students and teachers. We suggest that program organizers should focus on the cultural gaps affecting these programs, and provide additional opportunities for intercultural communication to address the cultural gaps.

Keywords: Chinese higher education; collaborative online international learning (COIL); COVID-19; interculturalism, online teaching and learning

Introduction

The Covid-19 pandemic accelerated a move toward collaborative online international learning (COIL) in the internationalization of higher education. COIL is widely valued as a way to enhance learning mobility and promote international collaboration. A number of institutions in China have adopted COIL, yet research has not examined these programs or their impact. In this article, we examine a COIL program at Shanghai University (SHU) as a case study.

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Based on reflections from a foreign professor, a professor and organizer from Shanghai University, and two students participating in the COIL program, we explore three research questions. First, what does existing literature say regarding e-learning and COIL in China's higher education sector? Second, how do students and professors prepare, understand, and experience online teaching, learning, and assessment in a COIL program? Third, what are the major challenges that teachers and students face in a COIL program?

The next section reviews research on e-learning and COIL in higher education. Based on the reflections of practitioners and participants, we then explore how SHU's program unfolded and discuss perceived possible room for improvement. Findings indicate that the program has faced a cultural gap (e.g., different teaching and learning styles) that poses challenges for both students and teachers which program organizers should address.

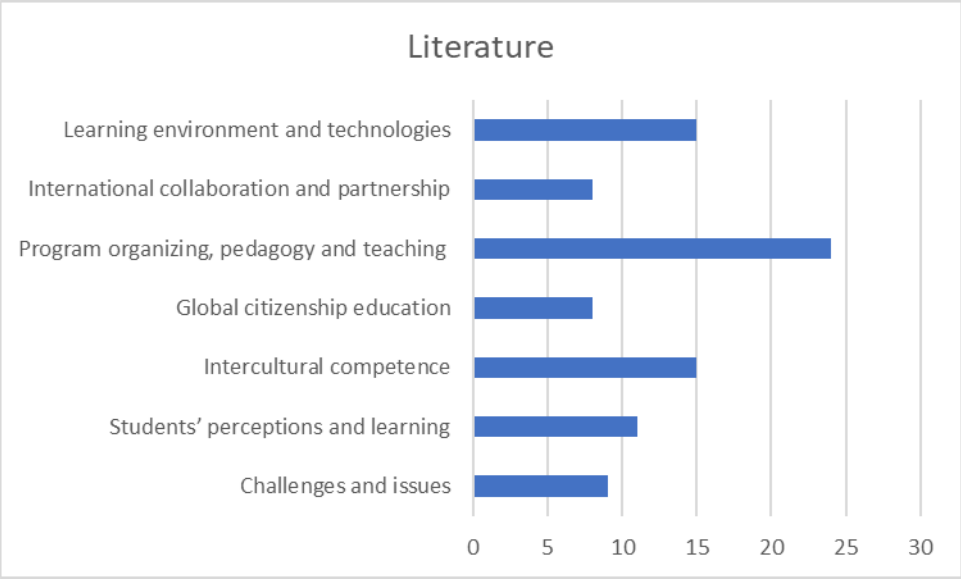
Literature Review

COIL refers to an online teaching and learning practice, created by two or more universities from different countries, in which students learn alongside international peers (Alvarez & Steiner, 2019). Previous literature on COIL has mainly focused on how students view and experience such programs (Dorner, 2018); how instructors prepare and design COIL curricula (Katre, 2020); and how particular departments and faculties promote COIL (de Castro et al., 2019; Mudiamu, 2020).

In this literature review, we searched three databases, including OVID (MEDLINE), ERIC, and the University Library, and we identified 90 related articles. Using Nvivo software, we identified seven major themes as follows: 1) challenges and issues; 2) students' perceptions and learning, 3) intercultural competence; 4) global citizenship education; 5) program organising, pedagogy, and teaching; 6) international collaboration and partnership; and 7) learning environment and technologies. Table 1 shows the prevalence of each of these themes in the reviewed literature. From Table 1, we could see that most of the literature focuses on program organizing, pedagogy and teaching. Other popular areas of research include learning environment and technologies, intercultural competence, and students' perceptions and learning. A few studies focus on intercultural collaboration and partnership and challenges and issues. We therefore suggest that, for future studies of COIL, scholars may need to pay more attention on teachers' and students' perspectives and the cultural issues behind COIL programs and practices.

Figure 1

The prevalence of nine major themes identified in the literature review



Challenges and Issues

The literature addresses the challenges and issues that COIL programs face. According to Alvarez and Steiner (2019), there are three kinds of barriers that affect COIL: didactical, technological, and organisational. The first refers to barriers that 'make[s] the content, the tasks, or the evaluation more challenging' in the classroom (p. 22). These include intercultural conflicts and implementation barriers. Technological barriers include lack of or uneven internet access, communication misunderstanding, and international access to the learning system. Organisational barriers are the challenges of organising COIL programs in the institutions, which include finding participants, developing curriculum, and achieving the program's commitment in terms of promoting international communication. While scholars recognize the three major barriers in COIL programs, Marcillo-Gómez & Desilus (2016) posits that there are additional challenges in terms of culture and technologies. They first contend that culture needs to be considered when working collaboratively because learning is based on one's cultural context, such as collectivism vs. individualism. They then suggest that educators should provide an open learning environment for helping students learn the differences and similarities among cultures. In terms of technologies, they note how universities use different online learning platforms. For example, a university in the U.S. may not be familiar with a Moodle system that a Mexican university uses. As a result, they suggest that program organizers and teachers should provide technological trainings at the beginning of the course.

Students' Perceptions and Learning

Most literature explores the students' experience and perceptions about learning in the COIL program. Dorner (2018) highlighted that the conceptualisation of international learning among students participating in COIL is important for investigating the implementation of COIL programs. He identifies students conceptualising international learning as either 1) a process to integrate information, skills, and knowledge; 2) international encounters designed to harness diversity of views; or 3) an opportunity for interdisciplinary learning (p. 304). Using a mixed method research design, Vahed and Rodriguez (2021) also explored students' experience of participating in COIL and found that COIL experiences positively influenced students' intercultural awareness, stimulated students' global engagement, and promoted their personal and professional development.

Intercultural Competence

Intercultural competence refers to 'behaving and communicating appropriately and effectively in intercultural situations' (Deardorff, 2004, p. 194). Findings on intercultural competence suggest students who participate in COIL believe they will gain intercultural competence (Kayumova & Sadykova, 2016; Saito et al., 2021). De Hei et al. (2020) found that when the group-learning process improves, students' verbal interaction and participation also improve, a finding which suggests the development of intercultural competence depends on a high perceived quality of collaboration. Kayumova and Sadykova (2016) found that cultural barriers are high, but that, nonetheless, a majority of students appreciated cross-cultural collaboration as 'a means of knowledge acquisition and expressed a desire to participate in some research projects' (pp. 253–254). By utilizing intercultural competence perspectives, researchers can enhance their understanding and examination of intercultural communication in the COIL programs, thereby facilitating the development of students' intercultural competence.

Global Citizenship Education

Previous literature highlighted that COIL could be understood as a tool for global citizenship education, enabling students to learn new perspectives, develop critical thinking skills, question their own cultural practices, and position themselves within a global society (King de Ramirez, 2021). King de Ramirez (2021) viewed COIL as a tool for international exchange, global citizenship education, and online education. Studying the implementation of COIL in

nursing education, Potter and Bragadóttir (2019) found that COIL can provide a positive way of promoting global thinking skills and cultural competence for nurses.

Program Organization, Pedagogy, and Teaching

Many studies explore program organization, teaching and pedagogical practice in the COIL programs. For instance, Yang et al. (2014) explored a collaboration between a Chinese university and a U.S. university, finding that social interaction played an important role in the program's efficacy and describing the model of 'community of inquiry' with which the learners interact with their community through cognitive (construction of meaning through sustained communication), social (ability of participants to project their personal characteristics into the community); and teaching presence (the design and facilitation of educational experience) elements (p. 210). Based on their study, Yang et al. proposed that COIL programs could adopt four models to achieve teaching efficacy, including the topic setting model, the teacher's task model, the use of bilingual language resources, and encouraging unfamiliar cultural interactions.

International Collaboration and Partnership

Studies also looked at the international collaboration and partnership issues in developing COIL programs. Saccocio (2016) studied how professors and students work together to build partnerships across countries. McCollum et al. (2019) explored how COIL in a digital Third Space actively engages students for international collaboration. The authors treated students as partners in multiple ways. They noted that students contribute to collaboration in COIL programs as consultants, international co-learners, co-researchers, and co-designers of the programs themselves. Jeong et al. (2007) argued that COIL programs can build joint international knowledge communities.

Learning Environment and Technology

The learning environment and technology could be two important issues raised in previous studies. Nava-Aguirre et al. (2019) described how COIL could become a strategy for experiential learning and Internationalization at Home (IatH). They argue that the IatH project enables professors to adopt COIL as a model in their courses. They could apply for grants from the project for organizing workshops and webinars, with which they are able to present and share their experiences with students through online environments. Studies exploring the use of technologies to support COIL in various contexts examine computer-based technologies (Fraser, 2005); technology-enhanced learning programs (Zhang et al., 2018); and using big data for COIL (Holtz et al., 2018).

Methodology

In this study, we not only explore the existing literature, but also use a participatory case study design to explore how professors from the two participating universities and students experience the COIL program. The participatory case study, a combination of case study and participatory research, is an innovative research method for studying all phases of a research process in community-based or social research from different participants' perspectives. Participatory research challenges conventional, positivist, and scientific approaches; it balances the relationship between researchers and researched and it empowers participants from socially marginalized groups (Zhu, 2019).

The first, second, third, and fourth authors participated in the COIL program studied here as, respectively, a professor from Canada, a professor from China, and two students. The first author served as a foreign professor from North America and taught the entire internationally collaborative course in Shanghai University. The second author, a professor from China, served as a major host organizer of the course from SHU. Her role was to communicate between the foreign professor and the students from SHU. She also helped to co-teach and provide evaluations in the course. The third and fourth authors were students from SHU. They fully participated in the entire course. After the course, they wrote

a reflexive report about participating in the course. All four of the authors shared different perspectives pertaining to their identities in the course.

In the summer of 2020, we engaged in a two-week course session called "Education in Global Times," a COIL program offered by SHU and a Canadian university. After the summer session, we reflected on our experiences as insider practitioners and students, considered the challenges we faced, and discussed how to best organize future collaborative online teaching and learning activities across countries.

The primary source of data for this research consists of four reflective papers from each of our perspectives. Then, we did a peer review between each other and read the reflective papers together. Treating ourselves as both the researcher and researched, we critically reviewed our experience. As a result of this data analysis, we identified three major findings. We believe this participatory case study methodology could benefit future program organizers, practitioners in higher and adult education, and students.

Shanghai University as a Case Study

Three reasons drove our selection of this COIL program. First, SHU is a prominent institution that is engaged in a variety of internationalization activities. Directly supported and funded by the Shanghai Municipal Government, it is engaged in training professionals to make Shanghai an international financial, trade and technological center. Internationalization has been among its key goals for years, and, in 2020-2021, it renewed efforts to internationalize its faculty and programs despite the COVID-19 pandemic through measures like student and faculty exchange programs, international conferences and workshops, and collaborative research and teaching. SHU thus has abundant experiences with and support for COIL.

Second, because of its short duration and limited participants, the program under study is ideal for assessing the short-term effect of cross-boundary collaborative teaching and learning. Yet, its successful completion demands the gradually accumulated expertise of international collaborative teaching and learning. The 'Internationalized Short Semester' has been a star program at SHU, highly rated among participating students and foreign professors. The program aims to provide a globalized environment for local students—an authentic study-abroad experience without travel.

The program is an expansion of the "International Course Week" of 2012, when professors from universities abroad offered a range of one-week, condensed general education courses to SHU's undergraduate students under an overarching theme. Resources were amassed through the mobilization of SHU's own faculty. Professors at SHU were encouraged to invite their foreign colleagues, and each SHU professor arranged numerous services for their guests, from international travel to the input of student grades for the 1-2 foreign professors each had invited. From 2012 to 2016, the program has been steadily expanding, producing a core team of local teachers, foreign professors, and experienced staff. Over those 5 years, 258 professors across multiple disciplines offered summer courses on the SHU campus. "International Course Week" eventually evolved into the two-week "Internationalized Short Semester." The local teacher-foreign professor collaboration model remained the same, while the extra week helped both teachers and students to adjust to the program and communicate more effectively.

Third, the adaptation of the "Short Semester" into an online program in 2020 shows the flexibility of COIL under unexpected circumstances. When COVID-19 impeded international travel and limited cross-border exchange, SHU's Office of Academic Affairs continued to host the Internationalized Short Semester online via Zoom. More than 40 foreign professors offered 39 courses on subjects ranging from artificial intelligence to fantasy literature. The 2020 theme was "Science, Society and Culture in the Age of Intelligence." In 2021, it was "Educational Innovation in the Post-epidemic Era."

This COIL program is designed to introduce advanced pedagogical concepts and experiences to teachers and students at SHU, as well as cutting-edge research in the foreign professors' fields. In many cases, foreign professors and

local teachers developed new collaborative projects through the program. Some foreign professors who became involved with SHU through these summer courses have since joined SHU's faculty.

Results

We explored how students and professors prepared, understood, and experienced online teaching, learning, and assessment through COIL. Three findings emerged: 1) Organizing COIL Programs with a Global Perspective; 2) Enhancing Teaching and Learning through Intercultural Communication; and 3) Barriers of COIL Implementation in Chinese Universities. We analyze the three findings in the following sections.

Organizing COIL Programs with a Global Perspective

Through analyzing the voices from students and professors, we find multiple factors affecting the organization of COIL in China. These factors include 1) designing the course content with a global perspective; 2) combining diverse teaching and learning tools; and 3) creating a safe, comfortable, and inclusive learning environment. We argue that when organizing COIL programs in Chinese universities, practitioners need to maintain a global perspective.

Designing the Course Content with a Global Perspective

The course entitled *Education in Global Times* is positioned on a general introduction level; it helps students understand some basic concepts in educational research and to cultivate critical thinking skills. During the first week, the foreign professor gave a brief talk on education. The concepts of global education and international education were introduced through a combination of videos and theory. Students learned about global citizenship education in two lessons. The concept of global citizenship was illustrated, which aimed to cultivate students' sense of belonging to the global community. The foreign professor used the Four C's Method (critical thinking, collaboration, creativity, and communication) to assist students through the circle of critical praxis. The students were asked to present in groups based on their study interest in the second week. Through this arrangement of course content, students learned about the concept of global education. They learned about different forms of education with a global perspective and reconsidered the multiple goals of education. Student A said that:

> I gained a brand-new perspective on thinking and a new theoretical model. Just like what was mentioned in the class, I got to know how the world works, becoming outraged by injustice and willing to change it. I got to form a sense of belonging to the global community. In China, there is a serious shortage of courses related to the cultivation of practical ability or spiritual things. This course provides me a global perspective to understand identity, spirituality, and community (Student A's reflective paper).

Both students and the professor co-developed the curriculum for teaching and learning and learned different perspectives and research topics in educational studies. The foreign teacher developed a research project on COIL with the students and professor in China. In her reflective paper, she said that the COIL was "valuable and inspirational"; that the influence of the two-week course would "never stop"; it had "enriche[d] [her] international and online teaching experience"; and would lead to future research.

Combining Diverse Teaching and Learning Tools

The instructors reported that the use of diverse tools for teaching and learning could enhance students' learning motivation and the professors' teaching skills. The foreign teacher explained that "mak[ing] students…talk/share/participate and prompt their learning motivations through various online tools… requires a combination of diverse tools," including Zoom and many others. She credited SHU's tutorials regarding such tools as "well-designed and clearly stated," providing "lots of instructions and suggestions in terms of how to use [them]".

In addition, students expressed satisfaction with the incorporation of diverse methods and tools, which they found convenient and cost-effective, as well as aiding their access to a range of free learning resources. For example, Student B said the following in their reflective paper:

> I was getting used to a combination of online and offline learning methods. I used to take face-to-face lessons on the campus. But [after the shift to distance education in early 2020] [b]oth teachers and students are trying to adapt to the new mode of learning…. During this process, I learned to conduct initiated-learning instead of task-oriented learning.

Students could share and use free learning materials by using free learning tools, which is an advancement in today's teaching and learning environment. Student A said the following in their reflective paper:

> We can find learning materials online and share with our peers. As a student without any income, I like this kind of learning for accessing free online learning materials and discussions.

Creating a Safe, Comfortable and Inclusive Learning Environment

To ensure a safe, comfortable, and inclusive learning environment for the COIL program, the foreign professor provided discussion opportunities for students to share their ideas and experiences with their online classmates. One viable format was group discussion, which transpired in both large group discussions and small group discussions of 12-14 students in Zoom breakout rooms. For the large group discussions, the professor provided some guiding questions. For the small group discussion, she instructed students to introduce themselves to each other and designated a facilitator, a note-taker, and 1-2 reporters to report back to the whole class. She visited each room and make sure every group was discussing the three questions she had supplied. Through these group activities, the students started to get to know each other and enjoyed sharing their experiences and discussing the questions with each other.

The professor also used small interactive online activities. For example, in teaching the concept of "identity," she asked students to draw a picture about themselves and list their identities. After the drawing, she asked students to turn on the cameras and share their pictures with the group, which many did, some of them using the class's WeChat group. This type of activity can help students to visualize concepts.

In general, students showed a positive attitude towards the online curriculum. At the beginning, few students wanted to participate, but group activities made them more comfortable sharing their experiences and opinions. By the end of the course, more than three quarters of the students had spoken in the class. This process proved that providing a safe, comfortable, and inclusive learning environment requires trust and frequent interactions. Sharing one's experience and stories may play important roles in creating a comfortable learning environment.

Enhancing Teaching and Learning through Intercultural Communication

Culture played a significant role in the COIL programs. Previous literature on COIL has addressed how to deal with cultural differences, how to overcome cultural barriers, and how to enhance students' intercultural competence (De Hei et al., 2020; Kayumova & Sadykova, 2016). However, not so many studies focus on how to use intercultural communications in COIL program to not only overcome the cultural barriers, but also enhance teaching and learning activities.

In our study, we found that there was a cultural gap between the Chinese educational system and the foreign higher education system. The cultural gap divides China's educational system from others, which requires a transformation of teaching and learning styles, such as changing from a teacher-centered class to a student-centered class. Our findings suggest that increasing intercultural communication is a useful way to transform a curriculum from a teacher-centered class to a student-centered one under an intercultural context.

Transforming Curriculum

The COIL program gave students a unique opportunity to have a novel learning experience. For example, they learned how to communicate with international scholars, how to develop knowledge and learn about culture from a global perspective, and how to learn in a student-centered classroom.

The foreign professor offered a student-centered curriculum based on Canadian educational philosophies and curricula, which encouraged frequent online interactions between students and teachers and required the teachers to make sure all students had a chance to speak. At the beginning of the course, she expressed three expectations: 1) that students would adapt some key concepts into actual case studies in education; 2) that students would actively participate in in-class discussions and give presentations in groups; and 3) that students would cultivate a new perspective on global education that would help them develop their critical thinking skills. But she noted that it was difficult to implement a Canadian-style student-centered classroom. She questioned whether the Chinese students accepted the Western curriculum and whether the Canadian-style classroom met the students' expectations.

Students did adjust to the student-centered pedagogical style. Many learned to express their opinions. For example, in small group discussions about the challenges of education in South Africa, Indonesia, Ireland and England, some groups had a heated discussion that led to an excellent 20-minute report on their discussion. Many students were glad they had connected with a group of like-minded people and noted that the student-centered curriculum required self-directed learning skills. Student A, for instance, said:

> We were required to go deeper into the reading materials and the course content and ask questions, thus cultivating our habit of critical thinking. Once the professor asked a question or put forward a viewpoint for discussion, we had to form personal views on it and find reasonable grounds to support it. Then, we thought about how to express our opinions and how to organize our answers. In this way, we learned how to connect our [viewpoints] to real world situations and shared them with our classmates. It's not easy. But eventually, we mustered our courage to turn on the microphone and communicate with the professor in English. The distance between teachers and students was greatly narrowed.

Learning through Intercultural Communications

Intercultural communication is "a unique phenomenon deserving of treatment as a special class of communication" - one every individual can achieve (Ellingsworth, 2017, p. 99). It played an important role in enhancing students' learning. Based on our experience, we wondered how culture affects students' perceptions and communications in a COIL program. The professor from SHU said that while Chinese college students are used to teacher-centered and lecture-based courses, they were willing to engage in the student-centered format. She noted:

> Sometimes, they open up more easily than American students, and in a more respectful way toward the instructor and their peers. In terms of reading, Chinese students are used to reading for information, rather than looking for arguments and critically evaluating the texts. But they can be easily trained to read and think critically if the instructor incorporates such goals into the curriculum design.

The students found that they enhanced their learning ability through a better understanding of culture. Student A said that she had gained an understanding of the multiple goals that education can have:

> I deepened my understanding in terms of different cultures and people with different views. I now understand education is a multiple choice question; it all depends on people's different choices of their lives and worldviews. I learned that different cultures, educational policies, and teaching and learning models can also shape different people's views and their different educational purposes.

Our observations suggest that, in order to enhance the teaching and learning in COIL programs, we need to encourage more intercultural communication between Chinese students and foreign professors. This approach could allow students to connect their personal experience in China to the learning content provided by the foreign professor. Meanwhile, students can critically reflect on the different values, ideas, and culture that they learned from the course.

Barriers of COIL Implementation in Chinese Universities

In our study, we identified three major barriers to the implementation of COIL in Chinese universities. The three barriers include language challenges, technological challenges, and assessment challenges. These barriers may raise questions in terms of the future direction of developing COIL in Chinese universities. In the following section, we analyze these three barriers.

Language Barriers

In our study, we found that the students had little practice in spoken English, and they found it difficult to express their ideas and organize what they wanted to say in a few minutes during the group discussion and Q&A activities. Nevertheless, students truly felt they had learned a lot from the class discussions. During the class discussions, they actually expressed their opinions and engaged in conversations with their peers by using English. They still felt that they could learn and share more if there were no language barriers. We believe that it will take time and repeated practice with COIL for students to overcome such language barriers.

Technological Barriers

In addition, technological barriers are another important issue. For example, the students sometimes had a bad connection to the Internet, which affected overall attendance in the lecture sessions, as well as the results of examinations. Online learning is closely linked to a new-mode of self-learning, with which most Chinese students have not been familiar. The conventional style of pedagogy in China emphasizes classroom management, discipline, and the performance of the instructor, while online learning calls for students to play a more active role in learning. Students are required to think independently and to manage their own time. At the beginning of the testing course, most students were not accustomed to self-learning. They struggled to forego a strong dependence on the teacher and textbook, and they set their own learning goals according to the course syllabus. Eventually, they shared materials and experiences with their classmates online, with the aim of creating an atmosphere of collective learning. After all, an equal, open, and sharing new learning environment requires joint efforts from everyone.

Assessment Barriers

One of the biggest problems in COIL is that the assessment for teaching and learning is not yet developed. Studying at home demands a lot of self-control from students, given the temptations of mobile phones, TVs, and other forms of entertainment within reach. The outcome of online learning basically depends on students' self-discipline, instead of effective monitoring or external supervision. In addition, a fully functional system to make synchronous tests possible for fair long-distance exams or other forms of assessment does not yet exist. Therefore, instructors need to develop their own measurement and assessment strategies for evaluating students' learning outcomes and their own teaching efficiency.

Discussion

This study used the COIL program at SHU as a case study and analyzed how students, foreign professors, and professors in China prepare for, understand, and experience online teaching, learning, and assessment in a COIL program. Three findings emerged. First, designing a global course content, using multiple learning tools, and creating a safe, comfortable and inclusive learning environment are all challenging tasks. Second, a cultural gap can exist within COIL programs. One cultural gap may include different teaching and learning styles and contents, such as the teacher-centered style and the student-centered style. We contend that scholars and practitioners need to pay more attention to this issue to increase intercultural communications in COIL. To enhance the teaching and learning in COIL programs, intercultural

communications between Chinese students and foreign professors should be encouraged. The third finding highlights three major barriers to the implementation of an effective COIL program in a Chinese university: language, technology, and assessment. These barriers should be the focus of future research and COIL development.

Based on our findings from this participatory case study in China, we suggest that although COIL can provide a convenient online learning approach to enhance Chinese college students' international learning experience during the pandemic, course organizers may need to focus on the limitations caused by cultural conflicts and cultural barriers. In order to better organize COIL programs in higher education, we suggest that designers and practitioners should pay more attention to the following aspects: cultivating students' learning skills, providing students with opportunities to develop global perspectives, and helping to increase students' intercultural communication. The use of COIL in Chinese universities is approximately a decade old. During the Covid-19 pandemic, COIL played a critical role in promoting internationalization in higher education. We conclude that the development of COIL programs should not be limited to improving online teaching and learning practice but should also focus on cultural issues in order to promote increased intercultural communications between individuals, universities, and nations.

Conclusion

We are living in a world with increased technological development, cultural interaction, and expression of individual identities, each of which require collaborations in teaching and learning across countries. This study contributes to our understanding of how COIL programs can be effectively organized and practiced from four insiders' perspectives. This article has its core purpose of stressing the growing importance of COIL studies in higher and international education. A comprehensive literature review is provided to discuss the current studies in the field and what we could explore for future research.

This article also has as its purpose the intent to close cultural gaps between students and teachers from different countries. We find that while organizing COIL programs requires a global perspective, it is also important to be aware of the cultural gaps and intercultural communications happening through the teaching and learning process. Our study particularly contributes to an understanding of the cultural gaps existing in COIL programs, and we suggest that scholars and practitioners need to pay more attention to the cultural issues, such as different philosophical foundations in the curriculum and different teaching and learning styles in each country, in order to bridge cultural differences and close the cultural gap. Finally, we also point out that teachers and students in COIL programs face several challenges in terms of learning, technological, and assessment barriers. It serves to stress that a deeper understanding of teachers' and students' needs and challenges would inform more effective COIL programs in the future.

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COVID-19 Experiences of International Students in Vancouver, British Columbia, Canada

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Abstract

This study looked into the lived experiences of international students during the COVID-19 pandemic in Vancouver, British Columbia, Canada. The research focused on how international students viewed the COVID-19 pandemic, their personal, social, economic, health and hygiene, and schooling experiences. A validated and reliable researchers-made questionnaire was used. Weighted means and Fisher's Exact Hypothesis Testing on Association were used to analyze the responses of the international students. The researchers used Fisher's exact test since they wanted to know whether the proportions for one variable were different among values of the other variable. Foreign students had a solid grasp of the potential risks COVID-19 posed and accepted the associated lockdown requirements. The survey results indicated that the students' nationality played a vital role in their perception of their financial health and well-being. Students were insecure with their accommodation, expenses, and scheduling. Lastly, they also felt alone, and economically challenged.

Keywords: COVID-19, pandemic, international students, Vancouver, Canada

Introduction

The United Nations Department of Economic and Social Affairs (n.d.) labeled COVID-19 as a human, financial, and collective catastrophe impacting directly on societies. COVID-19 does not differentiate, affects populations across the world, and has penetrated the core of humanity. Despite attempts by societies and leaders to guard themselves, the pandemic destroyed lives, crippled governments, tore families apart, ravished global financial markets, and proved how interdependent we are as nations ("Rethinking Social Change in the Face of Coronavirus," n.d.).

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On March 18, 2020, Mike Farnworth (BC Public Safety Minister) announced a public health emergency in reaction to the developing threat of COVID-19. The province of British Columbia (BC) could now curtail travel to or from the province, obtain, fix costs, or limit food, apparel, gas, petroleum, or other commodities as well as the use of property, service industries and tools. In addition, through this announcement, health authorities (federal and provincial) would mount a speedy and efficient comeback to the outbreak. To assist in flattening the infection curve, Canadian authorities released comprehensive strategies to limit the spread of the virus (Government of Canada, 2020a). It explained precise actions that would safeguard people and societies from contracting and spreading the virus. As a direct response, Canada passed comprehensive regulations to limit the financial effects of COVID-19 (Canadian Press, 2020).

Across Vancouver, medical professionals, through Dr. Gerald Da Roza (Head of Medicine at Royal Columbian Hospital in New Westminster) compared BC to Italy. In downtown Vancouver, eateries, coffee shops and diners persistently remained open for business, served eat-in patrons and permitted extended lineups. As a direct result of this development, doctors requested Dr. Bonnie Henry, BC Provincial Health Officer, to sanction firm control measures and inform citizens (Crawford & Johnston, 2020).

Splinter protest factions emerged in the West End and various areas around Vancouver, in spite of the noticeable international effect of COVID-19. The activists demanded that the lockdown be lifted. Some promoted counter-narratives, claiming that the virus was a ruse and that supplying treatment was the correct solution rather than vaccination drives. Adrian Dix, BC Health Minister viewed the activists as individuals with limited views. Many residents reported feeling that their personal safety was at stake amidst the demonstrators. Vancouver Police, however, reassured them that they would keep an eye on the rallies (St. Denis, 2020).

On March 17, 2020, John Horgan, BC Premier, declared their decision to suspend face-to-face classes from kindergarten to Grade 12 (Mangione, 2020a). When this decision was made public, all post-secondary institutions in the province followed suit. As a result of this colleges and universities drastically moved all student instruction and assessment to online modality (Ebrahim, 2020). Since classes were held virtually, college and university administrative operations were also done virtually and so office administrative staff were working from home. This scenario rendered the college and university campuses deserted without any form of in-person attendance and activity.

In Canada, international students immediately are introduced into Canadian society. International students in Canada do not live in a bubble. A huge percentage of colleges and universities do not have exclusive dormitories for their students. These students live independently by renting an entire apartment, a room, or any form of accommodation (Canadian Bureau of International Education, 2020). For international students to be immersed even deeper into the Canadian way of life, the government allowed international students to work up to 20 hours a week. Having these conditions enjoyed by the international students themselves, made them feel basically integrated into the very fiber of Canadian society. Therefore, the experiences of the locals were generally experienced also by the international students ("Student life in Canada," 2021)

Research Questions

The authors of this paper were interested to determine the experiences of international students of Vancouver, British Columbia, Canada during the COVID-19 pandemic. It is to this end that the research question of this scholarly work be posed: "What is the extent of COVID-19 related experiences of International students in Vancouver, BC, Canada?" The researchers identified factors as key components of this investigation. The researchers agreed to examine the lockdown, personal, social, health and hygiene, economic and schooling experiences of international students amidst a worldwide life-threatening health crisis.

Literature Review

Personal Experiences

Being away from the comfort of one's home is challenging to say the least. The experience becomes extraordinarily difficult when it is compounded with having to deal with a global pandemic that claimed millions of lives. Studies made direct links between the elderly and the threats associated with severe illness as a result of contracting COVID-19. Older patients presented an increased likelihood of requiring admission to a hospital (The U.S. Centers for Disease Control and Prevention, 2020a). This was concluded after an early influx of fatalities from long-term residential care facilities (Holliday, 2020). Initially, COVID-19 appeared to be only affecting the elderly and those with underlying illnesses, resulting in many younger individuals feeling less vulnerable. This was particularly evident in the case of David, from Indiana, USA, a

seemingly vigorous 27-year-old man who was in his final year as a medical student. David is a health fanatic who exercised up to six times a week at the gym. His body is muscular and toned. Applying his medical knowledge, he was committed to recommended hygiene routines and practiced social distancing. Heeding all the warnings, David believed he was not susceptible to the coronavirus. Finally, he too was exposed to the virus, ending in a positive test result (Vega, 2020).

It is not unusual to be frightened, tense and apprehensive when witnessing others deal with the fallout of the pandemic ("Apart. Not alone.," 2020). A large proportion of foreign students across Canada felt concerned about being removed from relatives, completing studies and finding accommodation. As campus residences shut down, students were forced to seek alternative housing during the pandemic, leaving foreign students feeling more abandoned and helpless (Gomez et al., 2020). They were left with two choices: to return home to relatives or to stay in Canada to avoid entry issues upon their return (Zhao, 2020). As the pandemic took its toll around the world, related buzzwords such as "new normal" emerged. In the absence of a so-called cure, this term was adopted throughout the world. The term "new normal" refers to the risks of contracting COVID-19 while going about one's normal routine until effective shots were made available (Maragakis, 2020).

Social Experiences

Around the globe, people were mandated to quarantine since the start of the pandemic. During this time, schools and universities closed their doors, some were forced to work from home, while others were terminated (MacLeod, 2020; Dangerfield, 2020). Government leaders requested their residents refrain from in-person interaction and practice safe distancing protocols to delay the spread and finally "level the infection curve" (The U.S. Centers for Disease Control and Prevention, 2020b).

Some governments encouraged complete "physical distancing" rather than mere "social distancing" to emphasize the need to be a minimum of two meters apart from others and to always observe preventative measures such as masking up. Experts explained that social distancing as an approach was dissimilar to physical distancing (Maragakis, 2020). Individuals were instructed to be physically distant by working remotely rather than in the workplace, continuing education online, connecting with others through social media platforms and cancelling summits, events and gatherings. By mid-March 2020, several tertiary institutions had switched to online learning in answer to the warning calls of the BC provincial leadership (Steacy, 2020).

Canadian authorities wasted no time in issuing guidelines on physical distancing. Canadian citizens were advised to steer clear from overcrowded areas and get-togethers, physical forms of greeting, restrict contact with higher-risk adults, and keep a safe distance of at least six feet. Residents were requested to remain home, limit in-person contact and rather use mobile applications (Government of Canada, 2020a). As a direct consequence, online purchases soared to 99.3% between February and May 2020 (The Canadian Press, 2020b). Many relied on online communication tools such as Zoom, Facetime and Skype to contact relatives, co-workers and friends (Teboe, 2020).

As universities and colleges in Canada closed their campuses, classes were pivoted to online mode. These international students were so far away from their families, they found themselves increasingly isolated, lonely, and worried about their future (Gomez et al., 2020). The COVID-19 restrictions also limited students' from personally knowing their professors and develop personal relationships with their classmates. Moreover, these international students failed to personally experience the diversity of Canadian universities and colleges (Alam, 2020). Students resorted to emails, Zoom, and Skype either for guidance from professors and supervisors or to complete team-based assignments and projects (Belle, 2020)

Health and Hygiene Experiences

One of the most pressing issues international students faced during the pandemic were related to health and hygiene. COVID-19 being a communicable disease, international students needed to adhere to the health protocols issued, implemented and monitored by the BC Ministry of Health.

The rapid rate of infection had heavily impacted public healthcare structures, financial markets and communities across the globe, according to WHO's Dr. Tedros Adhanom Ghebreyesus and EU Commissioner Jutta Urpilainen (n.d.). The Canadian government recommended timed, recurrent handwashing in an attempt to help contain the spread of the virus.

Public health organizations all over the world issued directives to limit the spread of the virus. The Massachusetts Institute of Technology Medical (n.d.) laid down the following tips to help prevent infection: 1. Commit to sanitizing hands often with hand cleanser and clean water. Conceal coughs and sneezes with the inside of the elbow, do not touch your face, isolate in case of illness and get medical assistance. 2. Keeping to social distancing protocols by remaining two meters away

from others and refraining from physical contact while greeting. Make a concerted effort to circumvent large groups of people and conduct online meetings instead. 3. Every individual was advised to mask up in public. 4. Keeping surfaces sanitary by using anti-bacterial products, specifically focusing on items regularly touched, such as mobile screens (MIT Medical, n.d.). Medical experts in infectious disease control and epidemiology worldwide have emphasized the significance of adapting to recommended sanitizing practices. Evidence demonstrated that the easiest way to contain the spread of COVID-19 virus begins with hand sanitizing (Mineo, 2020).

One of the most vulnerable segments of the population is the international students. They experienced specific practical and emotional challenges during the pandemic, and are at risk of mental ill-health, but may not actively seek out support from university services. Proactive and personalized approaches to student support will be important for positive student experiences and the retention of students who are studying abroad. The rapid transition to online learning during the pandemic presented unique challenges for international students. Unfamiliar online learning environments led to difficulties in articulating educational issues and queries in a second language, which may have limited access to previously received support (Al-Oraibi et al., 2022).

Economic Experiences

Canadian education is quite costly. The Canadian federal government allowed international students to work for a maximum of 20 hours a week. The income students earn from their employment helps them pay for their rent, transportation and food. Thus, during the COVID-19 pandemic, students' potential incomes were threatened.

According to the Vancouver Economic Commission ("Economic Impact," n.d.), pre-pandemic, the city had all-time low joblessness figures at just 4%. This rate had climbed to 11% by May 2020. Various divisions of the British Columbia economy were completely immobilized during the pandemic, leaving hundreds of thousands out of work and their futures uncertain (Shaw, 2020). According to Finance Minister Carole James the economic impact of COVID-19 varies depending on the gender, income and the sector where one is employed (Mangione, 2020b). Minister James further explained that those employed in hospitality, retail sectors and food industries had especially been hard-hit as far as lay-offs were concerned.

By March 2020, the Canadian administration announced directives concerning sustained employment during the pandemic (Government of Canada, 2020a). This report outlined the entitlements and obligations of workers. To prevent misunderstandings, national and provincial requirements were merged. The orders included the obligation on workers to remain informed on developments relating to the pandemic, and to follow leadership procedures on arriving for duty and associated workplace safety regulations. Immigration, Refugees and Citizenship Canada provisionally deferred the 20-hour work week regulation for those in possession of student visas (El-Assal & Thevenot, 2020) and were employed in necessary services like health, critical infrastructure, or the allocation of food and other critical items. This decision shows the importance the Canadian government placed on international students who were already absorbed in the Canadian labor market to help meet the additional dilemmas posed by the pandemic. Federal procedures were introduced as a mark of appreciation to foreign students. The Canadian Bureau on International Education agreed that the Canada Emergency Response Benefit (CBIE, 2020) would also be available to foreign students who met the requirements. The unfortunate reality was that students were not informed that they may be eligible for any type of government assistance (Bula & Xu, 2020; "Canada: Some Int'l Students Eligible for Support," 2020).

Academic Experiences

International students in Canada were supposed to be on active study for them to qualify for Post-Graduation Work Permit. Face-to-face modality had been generally also the way international students were educated in their respective home countries. However, when the lockdown was implemented due to the COVID-19 pandemic, international students were forced to attend classes and deal with university-related transactions virtually.

There are two vital provisions that study visa holders in Canada need to adhere to. They shall enroll at a Designated Learning Institution until they complete their studies and actively pursue their course of the program of study (Government of Canada, 2020b). The online or remote study is not incorporated in the definition of active study, as it does not require the individual's physical presence in the country (Government of Canada, 2020c). However, at the start of the pandemic, the Canadian administration conceded to some changes in the policies that regulate study visa permits. During this period, Immigration, Refugees and Citizenship Canada made allowances for online learning (El-Assal & Thevenot, 2020) without facing consequences when applying for post-graduate work permits (PGWP).

From March, almost all tertiary institutions in BC transitioned to online learning (Zussman, 2020). This was part of a strategy to avoid campus-wide infections and place staff and faculty at risk (Iwai, 2020). Once declared a pandemic by the World Health Organization, Canadian academic institutions took additional precautions in an attempt to eliminate the virus. Canada's swift response harked back to the lasting effects of the 2003 SARS outbreak. Campus management decisions were guided by both federal and provincial announcements concerning the spread of COVID-19 (McQuigge, 2020).

Prior to the shift to distance learning, IT experts held web-based seminars on how to gain optimal benefits from online applications and assist instructors in providing lectures in the most meaningful way. This trial phase was confusing for many instructors and students. While some instructors were uncomfortable with the impersonal nature of a screen and microphone, others had connectivity issues or were just uncertain about how to conduct lectures in an electronic environment. For students, there were numerous benefits, such as not having to travel to campus, being in class with illness and the choice to attend lectures when they deemed it fit (Iwai, 2020).

Certain students articulated their apprehensions regarding their economic welfare, the level of assistance received, and the apparent value of online studies. Some students questioned how certain practical classes could be offered remotely, such as photography and cinematography (The Canadian Press, 2020a). In spite of these concerns, a study conducted by Kahn et al. (2017) discovered positive links between the use of online learning, student involvement and meeting learning objectives. Dumford and Miller (2018) agree, stating that internet-based lectures facilitate shared learning between students.

The literature reviewed in Farnell et al. (2021) suggests that COVID-19 has inevitably brought about new risks and challenges that affect the access, study process and retention of students, particularly those coming from underrepresented, vulnerable, and disadvantaged groups. Even for students who still go on to study abroad, recent studies on student learning experiences during the COVID-19 pandemic have identified the following challenges faced by students. Challenges related to:

- studying conditions (i.e., access to a quiet place to study, equipment, reliable internet connection and course study materials, and confidence in using online platforms)
- funding (i.e., loss of employment/income, difficulty in meeting living costs and issues in receiving scholarships)
- well-being (i.e., lack of supportive social networks and prominent feelings of frustration, anxiety, and boredom with academic activities)

Methodology

Sample

Canada welcomed a total of 494,525 international students in 2017. British Columbia attracts 119,110 or 24% of international students. Vancouver, being the biggest city, has the lion's share in the province. This was the primary reason why Vancouver was chosen as the sample location. Self-completion questionnaires formed the basis of the data gathering, which was conducted in June 2020. To confirm the lucidity of the questions, 15 students took part in a pre-test (Diamantopoulos et al., 1994) but did not take part in the actual research study. Snowball sampling was used in getting respondents for this study. Snowball sampling was deemed appropriate since international students know other international students who may be their classmates, friends, or acquaintances ("Snowball Sampling," 2010). Researchers received a total of 117 fully completed questionnaires.

Instrument

The study utilized a validated and reliable researcher-made questionnaire. Based on the researchers' immigration stories and readings, they were able to design the survey questionnaire. The survey questionnaire was subdivided into 2 parts: Part 1 covers the profile of the respondents and Part 2 inquires about the different domains of COVID-19 experiences in the areas of Domain 1: On COVID-19 and Lockdown, Domain 2: Personal Experiences, Domain 3: Social Experiences, Domain 4: Health and Hygiene Experiences, Domain 5: Economic Experiences and Domain 6: Schooling Experiences. This survey tool was subjected to validity testing from 6 panels of experts which recorded a Lawshe's Content Validity Ratio (CVR) of 0.85 which is tantamount to establishing a good ability of the items used in the questionnaire to reflect the variables of the construct being measured. Likewise, an internal consistency Cronbach alpha score of 0.86 signifies that the items used in the study were consistently rated by the respondents 86 out 100 times if the same instrument shall be administered to them. The rundown of each domain reliability is shown as follows:

Table 1

Reliability Measures

Reliability Measure	Cronbach	Interpretation
Instrument Overall Reliability Score	0.86	Good for Implementation
Domain 1: On COVID-19 and Lockdown	0.819	Good for Implementation
Domain 2: Personal Experiences	0.912	Good for Implementation
Domain 3: Social Experiences	0.791	Good for Implementation
Domain 4: Health and Hygiene Experiences	0.814	Good for Implementation
Domain 5: Economic Experiences	0.889	Good for Implementation
Domain 6: Schooling Experiences	0.912	Good for Implementation

Statistical Treatment of Data

The questionnaire used a 4-point Likert Scale represented as a range of 1-Strongly Disagree, 2-Disagree, 3- Agree, and 4- Strongly Agree. In this study, frequency and simple percentages were used to make sense of the respondents' demographic profiles. Weighted means were computed to determine the extent of perception of the students with respect to the different domains of experiences.

Moreover, Fisher's Exact Hypothesis Testing on Association was used to analyze the responses of the international students. The choice of the appropriateness of the statistical tool springs from the fact that Fisher's exact test is a statistical significance test used in the analysis of contingency tables represented by the profile of the students (column) and the extent of their experience (row) tested at 0.05 level of significance. In this hypothesis testing, if the p-value of the relationship is less than or equal to the level of significance (0.05), then there was a very high chance of rejecting the null hypothesis (*Ho: There is no significant association between the profile of the students and their extent of experience relative to covid-19*) and be freed from a Type 2 error. The researchers used Fisher's exact test since they wanted to know whether the proportions for one variable were different among values of the other variable (McDonald, 2014). Likewise, Fisher's Exact Test is nonparametric in the sense that it does not assume that the population is based on theoretical probability distributions. This is important to note because the selection of the respondents did not come from a probabilistic manner or random sampling since it is impossible to have a list of all the students and have all their contact information for the randomization. This study applied convenience sampling in gathering the responses where only available respondents and those who consented to participate in the study were included. Additionally, the assumption that "Each observation is mutually exclusive - in other words, each observation can only be classified in one cell" was also satisfied by the use of the statistical tool since the respondents can only choose uniquely one of the 4 options *(Strongly Agree to Strongly Disagree)* in the scale for each domain of experience.

Coding and Positionality

All data extracted from the survey were coded in Microsoft Excel. To uphold the anonymity of the identities of the respondents a coding mechanism for their names was instituted. Respondents were encoded in terms of their numbers (Respondent 1, 2, …). Furthermore, the researchers were cognizant that they were immigrants themselves and may have similar experiences with the international students being new to Canada. These experiences have been the source for the researchers to come up with this study.

Preparation of the Data Collection Tool

The survey was administered fully online to adhere to the principles of safety and ethical considerations, especially during the pandemic. The online survey method involved using Google Forms, which has an automatic response collection system embedded in the program itself. Therefore, all data collected were automatically retrieved from the Google Form Response tab.

Results

Answers to the study questionnaires were charted, evaluated and assessed: the central objective being to depict the lived experiences of foreign students during the COVID-19 pandemic in Vancouver, BC, Canada. The survey represented a minimum of ten (10) nationalities, of which the majority (53% of respondents) were of Indian origin. Brazilian students constituted 14,5%, with smaller contributions from Nigerian, Russian, Iraqi and Taiwanese students.

From the outset, the number of female contributors ranked higher at 78%, while males made up the remaining 22%. When the survey was conducted, the majority of students were in the 26-30 age group, amounting to 46%. A large percentage of the students (57%) stated that they were unmarried, while those who were wedded, constituted 40,2% of total contributors. Over one quarter (25,6%) of these students had already been in Canada for 13-15 months by March 2020. Prior to the lockdown, most of the student participants had completed only a single semester at the university, while only a small amount had completed four terms by this point. Amidst the lockdown, 57% of respondents stated they were employed, while the remaining percentage claimed to be unemployed. Of those who were employed during this period, 61% specified that their establishments had work cutback arrangements in place and that it had directly or indirectly impacted on them. As far as

Table 2

The Level of Perceived Experience of International Students During the COVID-19 Lockdown (N = 117)

On COVID-19 and Lockdown	Weighted Mean	Standard Deviation	Description
I see COVID-19 virus as dangerous for all	3.49	0.92	Strongly Agree
I think COVID-19 is a hybrid of influenzas	2.47	1.26	Disagree
I don't understand the science of COVID-19	1.80	1.10	Disagree
You are in support that the lockdown implemented by governments was appropriate	3.44	0.91	Strongly Agree
Lockdown made you feel alienated from the world you are used too	2.86	1.12	Agree
Lockdowns globally took a serious impact on cross-border trades	3.62	0.71	Strongly Agree
Lockdown brought out the creation of the new normal to necessary groceries shopping	3.27	0.77	Strongly Agree
Factor Average	**2.99**	**0.97**	**Agree**

3.25-4.00	*Strongly Agree*
2.50-3.24	*Agree*
1.75-2.49	*Disagree*
1.00-1.74	*Strongly Disagree*

reduced work hours were concerned, a large percentage (40%) revealed that their billable hours had been reduced by between 1% to 25% as opposed to periods prior to the lockdown. In addition, 33% of students surveyed, revealed that their work hours had been reduced by at least 50% by the time lockdown was imposed. Some students (12%) opted not to disclose by what percentage their hours were cut back during this period. Those most affected by reduced hours were actively employed in the retail sector (38,89%) and food industry (32,41%), while the remainder were employed as caregivers, in hospitality, or the wellness sector.

Students were requested to give their opinion on the COVID-19 pandemic and whether a strict lockdown was really required. Most agreed strongly with the following statement: "*Lockdowns globally took a serious impact on cross boarder trades"* and seeing *"COVID-19 virus as dangerous for all".*

In addition, students also stated that they *were "in support of the lockdown implemented by the governments and also deemed it appropriate".* This is reflective of their COVID-related experiences as foreign students in Canada. Conversely, they disagreed about the belief that "*COVID-19 is a hybrid of influenzas*" and that they *"did not understand the science behind COVID-19"* (Table 2).

Table 3

Personal Experiences of International Students During the COVID-19 Lockdown (N = 117)

Personal Experiences	**Weighted Mean**	**Standard Deviation**	**Description**
Lockdown enhanced your technology skills rapidly	2.56	1.23	Agree
I felt isolated during the lockdown	2.72	1.22	Agree
I learned new skills that kept me entertained	2.50	1.18	Agree
I binge watched on my favorite movies, series, and other videos	2.63	1.26	Agree
I developed some form of anxiety or panic attacks	2.45	1.01	Disagree
I visited parks	2.17	0.98	Disagree
With more free time, I was able to develop personal plans	2.33	1.12	Disagree
With more free time, I became more reflective	2.53	1.09	Agree
Factor Average	**2.49**	**1.14**	**Disagree**

3.25-4.00	*Strongly Agree*
2.50-3.24	*Agree*
1.75-2.49	*Disagree*
1.00-1.74	*Strongly Disagree*

The survey results suggest that many of the students felt isolated during the lockdown. Respondents claimed they spent their free time "*binge watching their favorite movies, series and other videos*". Similarly, they acknowledged that with more free time, they became more reflective.

In contrast, many revealed that they didn't relate to *"giving in to anxiety or panic, developing personal plans and visiting parks"* as part of their lives as foreign students in Canada (Table 3).

As far as the social aspect of the quarantine period was concerned, respondents agreed that "*I got to spend more time online with my family and friends back home",* but were in strong disagreement that they "*met new friends".*

Table 4

Social Experiences of International Students During the COVID-19 Lockdown (N = 117)

Social Experiences	Weighted Mean	Standard Deviation	Description
I developed more meaningful relationships	2.39	1.19	Disagree
I got to spend more time online with my family and friends back home	2.91	1.07	Agree
I met new friends	1.71	0.78	Strongly Disagree
Attended small gatherings	1.83	0.84	Disagree
I went out of my apartment just to see/watch other people	1.98	0.93	Disagree
I was excited to do my grocery shopping because I will see a lot of people	1.97	1.03	Disagree
I enjoyed the small talks I had with strangers when out in public	1.96	1.05	Disagree
Factor Average	**2.11**	**0.98**	**Disagree**

3.25-4.00	*Strongly Agree*
2.50-3.24	*Agree*
1.75-2.49	*Disagree*
1.00-1.74	*Strongly Disagree*

Students denied having "*attended small gatherings*" or left their homes "*purely to see/watch other people*", were not enthusiastic about "*doing their weekly shopping to see a lot of people*" and did not like to partake in "*small talk with strangers when they were out in public*" (Table 4).

When probed about their wellness and sanitation practices during this time, students emphasized that they washed or sanitized their hands where possible, refrained from touching their faces, all types of physical exchange, wore masks and maintained appropriate distances in public areas. In addition, students claimed to have followed government recommended guidelines regarding washing hands for at least 20 seconds. Consequently, they concluded that they'd "not fallen ill for the duration of the lockdown". They also revealed their disagreement with some health and sanitizing recommendations at this time. Many did not agree that they should be wearing a mask if they were more than six feet away from another person. By this time, they had already stopped all forms of exercise. Furthermore, they indicated that they did not like being isolated from people and did not deem home-based work to be a safer option (Table 5).

Table 5

Health and Hygiene Experiences of International Students During the COVID-19 Lockdown (N = 117)

Health and Hygiene Experiences	Weighted Mean	Standard Deviation	Description
I kept my distance every time I am in public	3.49	0.68	Strongly Agree
I wore masks and other protective gears	3.29	0.98	Strongly Agree
I don't think masks are necessary if I am socially distancing 2 meters away	1.97	0.89	Disagree

Health and Hygiene Experiences	Weighted Mean	Standard Deviation	Description
I like to have a mask on for 8 hours a day when I work	2.51	1.26	Agree
I refused to meet with friends in person	2.58	1.18	Agree
I continued to jog and do other physical activities	2.37	1.05	Disagree
I felt unsafe every time I go to work.	2.57	1.30	Agree
I felt vulnerable every time I go out in public	2.64	1.13	Agree
My employer has put safety measures to protect its workers	2.95	1.26	Agree
COVID-19 made me practice more personal hygiene	3.36	0.77	Strongly Agree
I followed all protocols of the government communications for washing my hands for 20 seconds	3.34	0.97	Strongly Agree
I sanitized my hands where possible	3.60	0.54	Strongly Agree
I avoid touching my mouth, eyes, and nose when I am outside my home	3.51	0.76	Strongly Agree
I avoid hugs and all forms of human physical contact	3.47	0.77	Strongly Agree
I enjoyed alienating myself from society	2.05	1.16	Disagree
I believed all information shared to me by the government and health authorities	2.97	1.09	Agree
I am more healthy working from home	2.12	1.35	Disagree
I have not fallen ill for the duration of the lockdown	3.34	0.92	Strongly Agree
I have time to exercise at home	2.77	1.12	Agree
Factor Average	**2.89**	**1.01**	**Agree**

3.25-4.00 *Strongly Agree*
2.50-3.24 *Agree*
1.75-2.49 *Disagree*
1.00-1.74 *Strongly Disagree*

Students were very concerned about their day-to-day expenses in Vancouver. Post-graduation work opportunities represented a major concern for these students. Many had doubts about being able to pay tuition fees, especially since the imposed lockdown necessitated the use of technology to buy essential items. The respondents refuted that they "*welcomed lay-off to collect financial stimulus aid from government*" and that their bank balances were higher during the lockdown. Student loans, credit card and other expenses were delayed and many professed to have taken on two jobs (Table 6).

Table 6

Economic Experiences of International Students During the COVID-19 Lockdown (N = 117)

Economic Experiences	Weighted Mean	Standard Deviation	Description
Lockdown increased the use of technology for shopping necessities	3.02	1.04	Agree
I voluntarily declined work hours for safety reasons	2.09	1.18	Disagree
I worried on my living expenses here	3.37	0.92	Strongly Agree
I embraced lay off to collect government financial aid help stimulus	1.64	1.19	Strongly Disagree
I worried if I could afford to complete my studies	2.92	1.19	Agree
I was anxious whether I can return to work before my funds run out	2.51	1.43	Agree
I have more money during lockdown	1.64	0.86	Strongly Disagree
My spending habits changed	2.94	1.11	Agree
I was forced to do cost-cutting measures	2.97	1.13	Agree
I was wary of my employment opportunities after graduation	3.21	1.14	Agree
My family's financial support decreased	2.52	1.34	Agree
I needed to send money back home to support my family	1.91	1.24	Disagree
Loan payments were deferred	1.39	1.36	Strongly Disagree
Credit card payments were deferred	1.76	1.29	Disagree
Rent payment was deferred	1.70	1.19	Strongly Disagree
I have at least 2 jobs now	1.60	0.86	Strongly Disagree
Factor Average	**2.32**	**1.15**	**Disagree**

3.25-4.00	*Strongly Agree*
2.50-3.24	*Agree*
1.75-2.49	*Disagree*
1.00-1.74	*Strongly Disagree*

Regarding academic progress, students made it clear that "*instructors maintained consistent classes through online platforms*". Students conceded that guidelines to simplify the transition from in-person learning to an online modality were sufficient, the institutions communicated COVID-19-related updates prior to quarantine, and course work was placed on the web or emailed, and students completed tasks with negligible oversight from instructors. Most did not report any noteworthy technical issues while transitioning to online learning but maintained that team assignments were not easy to

coordinate in an online setting and added that paying tuition fees presented an obstacle. Furthermore, students felt they had a raw deal studying online as opposed to in-person tuition (Table 7).

Table 7

Schooling Experiences of International Students During the COVID-19 Lockdown (N = 117)

Academic Experiences	Weighted Mean	Standard Deviation	Description
The university/college regularly sent communications/updates on Covid-19 prior to the lockdown	3.04	1.00	Agree
There were sufficient guidelines that instructed the students on the shift of the mode of instruction from face-to-face to online mode	2.91	1.07	Agree
I had technical problems shifting to online classes	2.40	1.08	Disagree
I received technical support from the university/college	2.21	1.29	Disagree
My professors held regular on-line classes	3.47	0.80	Strongly Agree
It was challenging for me to have an appointment with my professor	2.03	1.09	Disagree
Course works were posted on the web or emailed, and I independently worked on them with minimal faculty supervision	2.61	1.17	Agree
I felt short-changed with online compared with face-to-face classes.	2.54	1.17	Agree
Group and team projects were difficult to do in an online class	3.25	0.96	Agree
I did other things while my professors were holding an online class	1.72	1.02	Strongly Disagree
Quizzes and examinations were a lot easier in an online mode	1.84	1.17	Disagree
Payment of school fees was difficult	3.13	1.24	Agree
Transactions with university/college service offices were usually delayed during the lockdow	2.58	1.38	Agree
Registration was more challenging since I could not personally appeal to authorities for consideration	2.09	1.30	Disagree
I experienced more learning online than face-to-face studies	1.76	1.22	Disagree
I found that there was extensive research to undertake to study for my courses	2.46	1.45	Disagree
My professors were present with the use of other technological apps	2.37	1.26	Disagree
I availed of online counseling service of the college/university during the lockdown	1.70	1.29	Strongly Disagree
Factor Average	**2.45**	**1.17**	Strongly Disagree

3.25-4.00	*Strongly Agree*
2.50-3.24	*Agree*
1.75-2.49	*Disagree*
1.00-1.74	*Strongly Disagree*

Table 8

Association Between the Profile and the Extent of Experience in Different Domains of the Participating International Students

Profile	Personal	Social	Health & Higene	Economic	Academic
Nationality	0.623	0.000*	0.003*	0.001*	0.356
Sex	0.676	0.547	0.380	0.104	0.048
Age	0.280	0.589	0.980	0.227	0.363
Marital Status	0.389	0.359	0.993	0.442	0.138
Length of Stay	0.050*	0.203	0.763	0.104	0.111
Terms Completed	0.090	0.612	0.494	0.213	0.912
Work Status	0.213	0.110	0.912	0.077	0.000*
Industry of Work	0.000*	0.000*	0.000*	0.001*	0.000*

**Fisher's Exact Test of Association is significant at p-values less than or equal the level of significance at 0.05*

The researchers were also keen to find out if students' demographic profile and line of work were linked to their perceived experiences of the lockdown. It was evident that their level of employment was directly related to their varying experiences as far as their studies were concerned. Finally, the sectors of foreign students were employed in, were markedly connected to each level of experience portrayed. This means that the trades these students were employed in, largely influenced their financial, personal and wellbeing perspectives (Table 8).

Discussion

The world was by no means prepared for the COVID-19 onslaught, more specifically, the lasting effects it would have and the element of uncertainty it posed. The most significant lifestyle adaptations were seen in education and employment. In particular, tertiary institutions were forced to implement emergency procedures to continue education as far as possible in an attempt not to defer semesters. For international students in particular, the pandemic posed additional challenges.

The objective of this study was to find out what the personal, health, wellbeing and financial experiences of foreign students were in Vancouver, Canada during this period, the level and quality of education they received, and the related difficulties they faced. The results would prove invaluable in measuring the extent of these experiences and developing efficient and improved alternative instruction methods as well as suitable government interventions for international students in case of a similar pandemic or emergent situations.

Based on these findings, many students came from lower income families and were forced to work in order to fund studies and lifestyle expenses, while some had the additional responsibility of sending money home to their families. A large percentage agreed that financial assistance from families also decreased during this time.

While these challenges were compounded by feelings of loneliness or isolation, foreign students in Vancouver complied with regulations, believed in the value of lockdowns, but disagreed about voluntarily declining work hours for safety reasons.

These findings are significant for the field of comparative and higher education for several reasons:

1. Emergency preparedness. Higher education will likely be able to adapt to any future threat, based on the lessons learnt from COVID-19. Universities are suitably prepared, and faculty trained to shift classes online if the need arises. This research shows that it is possible, though not ideal, to continue lectures online for extended periods.
2. International students are bound by the laws of the country they study in but chose to willingly comply with all lockdown regulations in Vancouver, demonstrating that foreign students were not willing to risk having their study visas revoked through non-compliant behavior.
3. The Canadian government accommodated the needs of foreign students, suitably adapting visa regulations where required, eliminating the need for students to travel and study online from their home countries while in lockdown. This

somewhat simplified the lives of students who were anxious about paying tuition fees and completing their studies with valid permits.

4. Foreign students played a significant role in providing essential services through their employment in retail and other sectors during the pandemic, contributing to the BC province's economy and the welfare of others.

5. Tuition fees are significantly higher for foreign students in Vancouver but constitute a significant source of sustainable income for Canadian tertiary institutions and associated employment of staff and faculty. Retaining international students throughout the pandemic meant that the business aspect of education could continue while offering an acceptable level of instruction.

Conclusion

Foreign students had a solid grasp of the potential risks COVID-19 posed and accepted the associated lockdown requirements. A common consequence was that students felt lonely. To further prevent the feelings of isolation, respondents stayed in touch with relatives from around the globe, through social media platforms. Their sanitizing routines were influenced by the guidelines issued by the BC Provincial government's health officials. Foreign students were duly concerned about their prevailing lifestyles and futures in Vancouver, BC, predominantly as a result of threats to their sustained employment, but also the probable lasting consequences the virus posed to the BC labor market. Overall, students easily transitioned from in-person to online learning, though they faced challenges such as completing team assignments and tuition payments. The survey results indicated that the students' nationality played a vital role in their perception of their financial health and well-being. In addition, their length of stay in Vancouver determined their lived experience. Being actively employed or unemployed presented a gauge for the variations in how students experienced their academic studies. Finally, the trade or industry in which foreign students worked, impacted heavily on their social wellbeing, financial experiences, and overall wellness.

Students' personal experiences related directly to insecurities regarding accommodation, payment of tuition and managing a rigorous academic schedule. Deciding to remain in Canada or return home seemed to be a life-altering decision for many with devastating potential consequences. In terms of social experiences, students complied with directives to isolate, keep their distance and saw the reasoning behind the regulations. Academically, foreign students easily adapted to online learning with minimal difficulty, transitioned swiftly and managed to continue academic studies from the comfort of their homes, apart from the perceived feeling of diminished value obtained from e-learning as opposed to in-person. Predictably, the largest overall concern for foreign students were issues related to employment, job security and future earnings. Many viewed themselves as ranking lowest in the pecking order, fearing that they may be the first casualties to be made redundant in the case of an economic downturn. Finally, from a health and hygiene perspective, students adhered to sanitizing protocols and claimed not to have contracted COVID-19 during the lockdown period or require medical intervention. While the sample of foreign students was in Vancouver, BC, Canada, their experiences can by no means be described as unique and similarly, international students across the globe may have had comparable experiences, however, Canada seemingly assisted where possible by changing work and study regulations to accommodate their needs.

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Gender Disparity in Chinese Academia: A Conceptual Analysis Through Organizational Theory Lens

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Abstract

Women academics face unparalleled challenges such as underrepresentation and marginalization in Chinese higher education. A review of the literature revealed a tendency in the scholarly discussions that separates gender from the social and organizational processes, which is a missed opportunity to better understand how gender interacts with the broader social, cultural, and political contexts. Using three major organizational theory perspectives, this conceptual paper addresses the issue of academic gender disparity through analyzing organizational culture, organizational management, and the way higher education institutions interact with the external environments. Higher education institutions are gendered organizations that create, fortify, and reproduce gender inequalities. This essay will provide various methodological, epistemological, and ontological possibilities of interventions for transformative organizational change.

Keywords: academic gender disparity, women in academia, Chinese higher education, organizational theory, organizational change

Introduction

This conceptual paper examines the nuances of the academic gender disparity issue in China using organization theories as the analytical lens. After presenting common themes that emerge from current literature on gender disparities in Chinese academia, this paper analyzes the way that Chinese higher education institutions interact with the external environments, organizational culture, and organizational management. I maintain that higher education institutions are gendered organizations that create, fortify, and reproduce gender inequalities.

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The term "academics" refers to teachers in universities with teaching and research duties (Dai et al., 2021). While gender used to be conflated with sex in the past, activists and researchers have clarified that gender is not necessarily attached to one's biological sex. Rather, gender is much more complex, and better understood as a social construction and a social performance (Schilt & Westbrook, 2009). Women academics face unparalleled challenges in higher education worldwide (Gonzales et al., 2023). Studies in various national contexts show that women are underrepresented in academia and marginalized in low-paid and low-ranked positions (John et al., 2020). Oftentimes, women navigate the male-dominated environment and struggle with work-life balance alongside their career advancement journey toward tenure or leadership positions (Aiston, 2011; Fritsch, 2015; Goulden et al., 2011; Kim & Kim, 2020; Naseem et al., 2020; Tsaousi, 2020). During the academic life circle, an increasing number of women are pushed out or left behind, a phenomenon described by Jensen (2006) as the "leaky pipeline." Despite the complexities and distinctiveness of the Chinese social, cultural, historical, and political structures, women academics in Chinese academia are confronted with similar, if not more severe challenges.

Gender disparities in Chinese academia manifest in many ways. Women are underrepresented in research activities. In 2019, only 26.5% of research and development (R&D) personnel in China were women. Among those awarded membership to the Chinese Academy of Science and Engineering, a lifelong honor given to Chinese scientists who have made significant achievements in various fields, women take up only 4.95% (Huang & Zhao, 2018). Additionally, similar to the "leaky pipeline," women academics' positions in Chinese higher education institutions are highly stratified, where most of them occupy lower-ranked positions rather than leadership roles and teaching roles instead of research (Huang & Zhao, 2018).

While there has been an abundance of research on academic gender disparities in the West, gender equity at the faculty level is still a new area in scholarly discussion in China. With a unique historical and cultural heritage and social structure adding to the complexity of the challenge, it is worth examining the reasons why and interventions for gender disparities in Chinese academia. To unpack the academic gender disparity in China, I first dove into the literature addressing the issue. I reviewed peer-reviewed empirical studies written in both Chinese and English by searching on academic search engines in Chinese (e.g. CNKI.net) and English (e.g. Google Scholar, and ERIC). I noticed a lack of attention paid to the organizational lens in the current literature. Centering organizations as the entities of discussion rather than individuals and departments allow interrogations of the college or university context internally and externally and provides a powerful entry point for transformative organizational change (Gonzales et al., 2018). The following section will dive into the existing literature that touches on the issue of academic gender disparity in China.

Problematize Existing Literature

Gendered Perceptions and Expectations

Two common themes that emerged in the literature are gendered social expectations and gendered perceptions of capacities. Existing studies voice concerns over the gendered perception of women's capabilities, pointing out that gender stereotypes exist among women academics due to the prevalence of beliefs in the biological gender divide among both genders. As Gaskell et al. (2004) presented, most male academics (63% of men under 40 and 69% of men over 40) surveyed in 5 normal universities (higher education institutions that train teachers in China) in 2004 believe that biological difference between male and female is a major reason leading to gender differences in physical characteristics, character features or intelligence. That said, an updated perspective is needed for understanding academics' beliefs today concerning the reasons for academic gender disparities.

Literature points out the potential damage of biology-based perceptions on gender differences. Opposite to viewing gender as socially constructed (Risman, 2004) or as an institution that is embedded in all social processes of everyday life and social organizations (Lorber, 1994), the biological-based perception separates one's biological sex from the broader social and organizational processes, allowing the overlooking of structural inequalities and undermining of women's capabilities in academia (Gaskell et al., 2004). For example, women are considered naturally less fit for research and leadership roles compared with their male counterparts because of the biological sex-based traits assigned to them (Gaskell et al., 2004). In addition, under the gendered perception of one's capabilities, women's leadership styles are not considered as different from men's but rather deficit and inferior. While men are perceived as naturally rational and male

leaders are trusted, women are the direct opposite, and emotional, and women leaders are associated with negative terms such as being indecisive and weak (Rhoads & Gu, 2012; Zhao & Jones, 2017).

Closely linked to how women are perceived are the social expectations on gender roles, which play a prominent part in shaping the current landscape of gender disparities in Chinese academia. The traditional social-cultural ideology of "xian qi liang mu" (virtuous wife and caring mom) enforces idealized images of women as mothers and housewives, whereas men are prevalently considered the bread-earner. While the dual-career and dual-income family model becomes widely accepted in society and women's participation rate in the labor market is as high as 60% as of 2019 (Statista, n.d.), women are still expected to take on more domestic and childcare responsibilities in China (Guo & Chu, 2019). The gender ideologies conformed to findings from a study that examined the impacts of having prekindergarten children on faculty's research productivity: the research productivity gap between women and men in academics widens when the childcare burden is considered. In other words, an increased amount of domestic work in a family has more negative impacts on women's academics than on male academics (Yuan, 2017).

Some studies illuminate the process of internalizing social expectations as a way of doing and being by many women academics. When faced with the dilemma of fulfilling their career goals and family responsibilities simultaneously, their male counterparts can invest more effects in their career. Chinese women academics tend to conform to their assigned gender roles at the cost of their advancement ambitions (Ren & Caudle, 2019). Zhao and Jones (2017) suggested that gender expectations are internalized when one believes their compliance is a free choice. The authors shared a women interviewee's use of the passive voice when referring to women's domestic responsibilities and the reaffirmation of her willingness to comply by saying "'men should do great things' and 'women should get small things done'" (Zhao & Jones, 2017, p. 8). As contradicting as it sounds, the interviewee's contradictory statement is a perfect example of how women conform to their gender roles assigned by social-cultural expectations and effectively perform such roles to justify their doings (Wiggins, 2017).

Pushing the Boundaries

Although the existing literature exposes gender inequality in Chinese academia and provided practical solutions to narrow the gap, there is a general lack of connections between the discussion of gender disparities and the functionality of higher education institutions as organizations. In other words, researchers have approached the problem as if it arises in vacuous spaces or within individuals (Gumport, 2012). For example, using marriage status, time spent in housework, and women academics' cognitive gender segregation to capture their essential characteristics, Guo and Chu's (2019) study isolated gender from other organizational and social contexts. When the authors concluded that both gender and factors other than gender such as gender ratio in higher education institutions and the appraisal systems impact women's career development in academia, they overlooked the fact that imbalanced gender ratio and the potentially problematic appraisal system are part of the gendered problems. There also exists a tendency to explain the reasons for gender disparities by emphasizing individual choices and behaviors. For example, in Yuan's (2017) study, "effort put in work," measured by hours spent in research per week, was used as a moderator. The author argued that gender discrimination does not exist as "efforts put in work" moderates the impact of family support needs on one's research output. This conclusion shifted the blame to women academics as it indicated that women academics not putting enough time in work contributes to the disparities. The approach taken assumed that women academics have complete free control over how much time they invest in research versus domestic duties. While Zhao and Jones (2017) and Gaskell et al. (2004) disputed this notion, it is an easy trap to fall into for quantitative analysis where gender is considered a variable separated from other factors.

Separating gender from the broader social and organizational processes is a missed opportunity to better understand how gender interacts with the broader social, cultural, and political contexts. That said, I employed an organizational theory lens in this conceptual work to further the discussions about the cause and potential remedies for gender disparities in Chinese academia. As Gonzales et al. (2018) maintained, organizational theory offers "a powerful entry point for transformative work because it takes entire entities (rather than individuals or departments, for example) as the central units of analysis, and is concerned with analyzing such entities holistically" (p. 507). The goal of this conceptual piece is not to negate the contributions of the current literature. Rather, I aim to push the boundaries of current literature and provide additional or alternative perspectives to the issue in discussion. In the next section, I will start with an overview of the analytical lens and reexamine academic gender disparity from an organizational theory point of view.

My analysis is not without limitations. While I collected literature in both English and Chinese, the literature covered in this analysis may not be comprehensive due to access issues with some Chinese literature search engines. As well, the way gender is discussed in this conceptual piece is binary. Although one's gender, as a social construction and a social performance (Schilt & Westbrook, 2009), does not necessarily fall into the sphere of either men or women (Bosson et al., 2018), I was not able to further the discussion of gender non-binary academics in the academia in this paper due to the lack of literature addressing non-binary people.

A New Look into Academic Gender Disparity

The Analytical Lens

The analytical lens I employed in this analysis is adapted from the work of Gonzales and her colleagues (2018), which offers overviews and critical perspectives into major schools of thought regarding organization theories. I applied three of the four schools of thought on organizational theories discussed by Gonzales and her colleagues (2018): environment perspectives, organizational culture, and scientific management to understand why gender disparities persist. First, the environment perspective as a school of thought asserts that the survival, functioning, and development of an organization depend not only on the internal operations and leadership but also on the external environment such as the economic, social, and cultural conditions (Marion & Gonzales, 2013; Stern & Barley, 1996). Meanwhile, the organizational culture school of thought suggests that an organization's culture is operationalized through various elements such as beliefs, values, assumptions, and visual artifacts (Schein's 1993). Gonzales et al. (2018) caution that the culture of organizations usually symbolizes power relations that may give some advantages and marginalize others. Finally, scientific management theories (Fayol, 1949; Taylor, 1919) were primarily concerned with effectively managing people and resources for maximum productivity, which minimizes human emotions and connections.

Examining higher education problems using the lens of organizational theories is not uncommon. In fact, there has been a wealth of examples that approach higher education issues through an organizational theories lens such as faculty hiring and promotion (Hora, 2020), university leadership styles (Chaffee & Tierney, 1988), and higher education institutions and the market and the industry (Berman, 2012; Slaughter & Rhodes, 2004; Smuts & Hattingh, 2020). Hora (2020), for instance, examined how the culture of an institution partially decides the type of candidates the search committee favors. With that said, the subsequent sections draw attention to the chief findings of the study as they pertain to each of the three organizational theories employed. From an environmental perspective, I will elaborate on how gender disparity issues interact with global, national, and historical factors. Then, I will dive into the culture and hierarchical structure of academia through the lens of organizational culture and scientific management. While the organizational theory lens approaches organizations as the unit for analysis, it does not overlook the role of individuals agency. Therefore, I also incorporated the analysis of individual behaviors and impacts in my analysis, underscoring the role individual agency plays in constructing or resisting the gender dynamics in Chinese academia.

The Global, National, and Historical Shaping Forces

This section highlights the findings based on the environment organizational lens. Aligning with the environmental perspectives in organizational theories, higher education institutions are part of and affected by the external environment within and beyond the naturally occurring boundaries. The complex global and national structure and social and cultural conditions (Gonzales et al., 2018). In fact, the global competition in the knowledge-based economy impacts higher education institutions' goals and practices. Higher education institutions globally, including Chinese universities and colleges strive to excel in the global brain race by building world-class research universities. In this context, academic research productivity, measured by publications in prestigious journals, has become a top priority for the higher education sector (Hazelkorn, 2015). To catch up with the global intellectual competition and to build "world-class research universities," for decades, China has been implementing the cash-per-publication reward policy, linking the number of SCI papers to higher education funding allocations. The macro-level ideologies and policies that prioritize research are manifested on the meso level in the form of hiring and promotion policies that favor research activities and outputs. Since

women are more likely to hold teaching positions than their men colleagues, they tend to receive fewer resources and recognition in an academic system where research is valued more than teaching and other academic activities.

National policies also impact women's academic experience in academia. Examples of policies that may impose adverse impacts on all women including women academics' professional experience and career advancement include the national family planning policies and the retirement policy. After a few decades of implementing the One-Child Policy to control the population size, China revised the family planning policy in 2014 with the Universal Two-Child Policy that allows a family to have two children. Some argue that the new family planning policy could further set women back (Huang, 2018; Zhou & Gao, 2019). Employers expect that having a second child leads to women employees' taking more time off work and thus some may have greater reservations about hiring and promoting women (Zhou & Gao, 2019; Zhou, 2018). Further, the retirement age for women is five years ahead of men, which may affect women's career development as they are older and reach higher ranks at their institutions (Rhoads & Gu, 2012). On a positive note, favorable national policies and regulations can significantly improve women's academic experience. As the Chinese government works on updating the Law on the Protection of Women's Rights and Interests, there are high hopes that workplace gender discrimination can be reduced (The National People's Congress, 2022).

Besides global competition and national policies, cultural heritage also interferes with the gender status quo in academia. Scholars warn that one should not overlook the importance of history, especially the violence and power imbalance that reside in the historical context (Gonzales et al., 2018). Indeed, the long-standing traditional values and beliefs implicitly inform binary gender roles rooted in Confucianism and remain strong in modern Chinese society (Faure & Fang, 2008; Li, 2008). As a famous saying goes "Women's ignorance is a virtue," women's intelligence and agency to be part of the intellectual community has long been disapproved and deprived in history. Under the Confucius set of ideologies, women are considered followers rather than leaders, supporters of important journeys that men embark on instead of the protagonist of critical endeavors. As China undergoes modernization, more and more avenues open for improvement in gender representation in the labor market. Tatli et al. (2017) found, for example, marketization and individualism encourage women to compete in the modern workforce, shedding a positive light on the shifting cultural landscape. However, perceptions about talent, potential, and suitability continued to be colored by traditional gender norms and ideologies and should be taken into consideration when one interrogates academic gender disparities.

The Gendered Organizations

Although the broader social, cultural, historical, and political contexts shape policies and practices at the organizational level, organizations themselves also contribute to the consolidation of the unequal distribution of resources and power. By creating organizational cultures and establishing hierarchical structures, organizations take an active part in fortifying and reproducing "power structures in ways that support bureaucracies that significantly advantage some and disadvantage others" (Amis et al., 2020, p. 14).

From an organizational culture perspective, higher education organizations form the culture of an "old boy network" or "brotherhood" that pushes women to the peripheries of academia (Ramohai, 2019, p. 225). Culture in higher education is integrated into all facets of its functionality and is reflective in "individual and organizational use of time, space, and communication" (Tierney, 1988, p. 18), which is never free from the saturation of power imbalance (Amis et al., 2020; Ray, 2019). In Chinese academia, it is common to discuss research and lay foundations for projects over several bottles of beer during lunch or dinner meetings, a male-centered way of bonding that makes most women uncomfortable (Rhoads & Gu, 2012). This communication style is coupled with the "guanxi" culture in China, referring to personal trust and relations, and oftentimes involves moral obligations to exchange favor that is pervasive in any public and private sector. Therefore, it is much more challenging for women academics to network and establish collaborative relations in male-dominated environments as "doing good research is not as important as schmoozing with powerful bureaucrats and their favorite experts" (Shi & Rao, 2010, p. 128).

Second, the organizational structure of higher education institutions is increasingly characterized by job specialization or academic Taylorism. Taylorism, a concept first put forward by Frederick Taylor (1919), describes the process of dividing a task into smaller parts to allow employees to complete assigned work as efficiently as possible. In the academy, pulling apart the academic profession (Gehrke & Kezar, 2015; Lorenz, 2012) becomes a common approach universities take for administrators to "have more control over the role definition of academic labor and maximize

organizational resources" (Gonzales et al., 2018, p. 522). Traditionally, academics' roles are complex professional roles that integrated research, teaching, and services. Under academic Taylorism, more contingent teaching-focused positions are created, which seldom lead to advancement in the academic profession. While academic Taylorism does not directly lead to devaluation of teaching and service roles, it consolidates the hierarchical structure in academia, allows those in higher ranked status, men in most cases, to hold a higher degree of control over others and get away from abusing the power they possess (Young et al., 2015).

If the sexist organizational culture is the agency of gender discriminative structures, the Taylorized and hierarchical structure of Chinese academia consolidates gender inequality. When taken together, women academics in China are not only marginalized in "unimportant" and less rewarded positions but feel stuck in those positions. Their exclusion from higher-ranked faculty positions or administrator roles leads to their absence in the decision-making process, which in turn keeps them further away from the "old boy network." Moreover, what institutionalizes and legitimizes such inequalities is the myth of meritocracy based on the false assumption that advancement and rewards are given only based on one's capabilities and performance (Lynn et al., 2009). Overlooking organizations' participation in reproducing inequality, one falsely assumes that rewards are given based only on merit, easily reducing causes for gender disparities to individuals' traits or behaviors rather than the injustice of the system.

The Participation of Individuals

Thus far, I have established gender disparities stem from organizational structures and cultures that situate in a broader organizational environment. While I challenge that only individuals are to blame for sexism in academia, there is no denying that individual acts of discrimination and microaggressions feed on the hierarchical structure and fortify the patriarchal culture. The social constructivist perspective on organizational culture suggests that members of an organization can create, disrupt, or revise organizational identity (Garcia, 2016). If a good portion of academics believe that the academic gender disparity is a result of biological differences between males and females (Gaskell et al., 2004), it is unsurprising that the organizational structure and organizational culture are less welcoming and inclusive for women. Recognizing individuals as agentic is vital in the organizational analysis as the social constructivist viewpoint allows one to discern the reasons why the problematic organizational culture and structure continue to exist despite the nonexistence of explicit gender discriminative regulations in an organization.

Another way individuals and organizations interact is that individual biases are empowered by their connections to the legitimized and institutionalized sexism in the organizational culture and structure. This is particularly the case when individuals easily hide behind the façade of an organization, refusing to admit or recognize the part they have taken in the gendered organizational processes. For example, some interviewees in Rhoads and Gu (2014)'s study claimed that academic gender discrimination does not exist at their institution. There is no wonder why fighting against gender inequity feels like banging one's head against a brick wall, an analogy used by Ahmed (2012) to describe institutional resistance to diversity workers' advocates for change that is universal when any marginalized group stands up for themselves. Here, I intentionally did not specify men as the oppressor in academia. In fact, by conforming and complying with the norms, women's doing, thinking, and being, sustain and reproduce the system of oppression. Gerth and Mills (1964) demonstrated how personality traits and conduct patterns are shaped by institutional orders. Along the same line of thoughts, one can contemplate how "the context of daily life creates action indirectly by shaping actors' perceptions of their interests and directly by constraining choice" (Risman, 2004, p. 432), particularly for marginalized women academics. After all, what causes women's under-representation in the academic professions both in research and leadership is the gender schema through which both men and women perceive and evaluate women (Zhao & Jones, 2017).

Current literature provides a glance into Chinese women academics' resistance and agency. Ren and Caudle (2019), for example, offered examples of Chinese women academics seeking help from their families to cope with work-life balance after they have kids. Unfortunately, studies that focus on telling counter stories of how women academics resist the current organizational culture and structure are rare finds in the literature, mainly because studies addressing academic gender disparities are mostly quantitative (e.g. Yuan, 2017; Guo & Chu, 2019).

Discussion and Implications

The critiques and alternatives we can offer to an existing problem are shaped and constrained by our approach and response to the problem (Scott, 2004). Andreotti et al. (2018) discussed interventions for organizational change at methodological, epistemological, and ontological levels. Methodological intervention emphasizes changing practices in the existing system to achieve the goal more effectively and efficiently without shifting the goal itself. The epistemological level embraces interrogation of the validity and value of knowledge. Epistemological interventions interrogate what is valued and rewarded and what is undervalued and unrewarded in academia, what historical, cultural, and political dimensions construct such perceptions of value and legitimacy in academia, and whether women benefit from such a value system or are wounded by it. Lastly, ontological interventions encourage one to focus on different ways of being with the aim to change the system entirely instead of making changes to the system. I argue that methodological interventions are important, yet insufficient, and epistemological, and ontological interventions are needed for transformational change to occur.

Methodological interventions do not cast doubts on the system itself. Most of the national policies on the agenda to mitigate gender disparities such as relaxing the criteria limit for women to apply for certain research funds and offering an allowance to women academics for childcare assistance (Huang & Zhao, 2018) might adversely impact women academics by reproducing a deficit narrative to their experiences despite their benign intents. Within higher education institutions, methodological interventions call for institutional policies and practices to assist women academics to navigate the system such as reducing women academics' workload in teaching and student services after they give birth to a child (Yuan, 2017). Interventions at this layer generate "good" outcomes, however, the underlying problems with the structures and cultures of the organization remain unaddressed. It is also risky that the illusion of institutional commitments to gender equity, or in other words, the illusion of "comrades in arms," according to Rhoads and Gu (2012, p. 745) surface. When the organizational leaders who claim to commit to gender equity and ensure to look after their colleagues as "comrades" are mainly men, the existing male privilege undergirds the idea of "comrades in arms," building obstacles against those seeking to engage with epistemological or ontological conversations.

To engage with epistemological and ontological interventions, reflexivity is required for both supra-organizational decision-makers and micro-level individuals in an organization, particularly on how their positionality limits or interferes with their understanding or ability to know, recognize, and value certain things (Gonzales et al., 2018). These layers of interventions urge reflections on the societal perceptions of gender-based labor division and individual beliefs about one's role in society, family, and the workplace. Meanwhile, each agentic individual in higher education should constantly and consciously check their implicit biases that undermine and overlook certain types of work, traits, personalities, and communication styles, and stand up against such biases.

The epistemological interventions call for re-evaluating the value of knowledge and work in academia. When methodological interventions seek to improve women's academics' research productivity, epistemological interventions question why metrics to evaluate academics' productivity are highly skewed toward research outputs and whether the current academic appraisal mechanism aligns with the core purpose of higher education. Strong as the external shaping forces are, it remains a vital ethical requirement that institutional leaders find ways to reflect broad social values and reclaim the importance of care work, work that focuses on caring for others' non-academic needs (e.g. providing emotional support to students and colleagues, organizing community-building events, etc.) in the academic profession, which is how elitism or sexism that "continuously reproduce prevailing academic values" is rejected (Cardozo, 2017, p. 421). Interventions at this layer include updating criteria for hiring and promotion to include teaching and service commitment and re-bundling the academic profession to allow higher-level of autonomy individually in terms of defining their work. Specifically, besides making efforts to further engage women with research opportunities, institutions, and individuals should also reevaluate the value of teaching and service to include academics' involvement and contribution in those areas in the tenure and promotion system.

Last but not least, the ontological interventions ensure inclusivity for different ways of being. The role gender plays in both the public and private spheres needs to be reimagined. For example, state policymakers may reconsider the laws for maternity and parental leaves as well as employer childcare welfare policies. Specifically, instead of only giving women academics allowance for giving birth and childcare, higher education institutions should also encourage and reward men who participate in domestic work and childcare responsibilities. By doing so, there is hope to reverse the

existing discourse that asserts women are more productive and valuable in the domestic and private sphere, and men the opposite. This way, as Montgomery (2020) puts it, rather than doing "gatekeeping", interventions engage with "groundskeeping" (p. 135), which emphasized individuals' experience and growth in the organizations instead of limiting their possibilities. As collective leadership that rejects traditional scientific management "[makes] more deliberate and conscientious efforts to equitably engage those less-powered institutional actors" (Taylor, 2020, p. 193), ontological interventions push the notion of inclusion further. Women should not only be physically included but also recognized and valued in the system. Interventions at this level work on rejecting the notion of considering women's traits as inferior or "feminine" leadership style as a deficit.

For future studies, I appeal to the need to understand the gendered power dynamics in academia. Further study may consider adopting qualitative approaches to engage in in-depth interactions with academics in Chinese universities. This way, researchers can better grasp the nuanced experiences and struggles faced by women academics. Future research may further examine organizational culture in Chinese higher education institutions. Studying how men and women academics make sense of the organizational culture and participate in creating such a culture at their institutions will illuminate the process of creating and sustaining gender inequity. Another potential area of exploration can be the lived experiences of women academics. As organization studies oftentimes overlook individual agency, it is also of vital importance to examine how individuals may sustain or disrupt and revise the patriarchal academic environment via the experiences of women leaders in Chinese academia. Last, as I mentioned earlier, the current literature approaches gender in a binary way. Future research may expand the discussion of academic gender disparities in China to non-binary people.

Conclusion

This conceptual piece adds to the existing literature on gender disparities in Chinese academia by explicitly focusing on the organizational aspects of the problem. I attempted to unbundle the intertwined relationships among the environment, organizations, and individuals. I established that the problem of gender disparities in Chinese academia is embedded in the historical, social, cultural, and political environment and it is consolidated in organizations via organizational structures and cultures. While individuals are empowered by such a structure and culture, their attitudes and acts also feed into the organization, reinforcing gender stereotypes and microaggression at the meso level. Hence, it is of vital importance to examine academic gender disparity in China through the lens of organizational theories and engage with epistemological and ontological interventions for transformative change.

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Review of Melissa Whatley's *Introduction to Quantitative Analysis for International Educators*

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Introduction

With international higher education (IHE) professionalizing as a field, many graduate programs focusing on the study of international and comparative higher education have been established across the globe. The new generation of students educated in these programs are commonly designated as scholar-practitioners (Streitwieser & Ogden, 2016), and this population was a key target group for Melissa Whatley's new book *Introduction to Quantitative Analysis for International Educators.* The book introduces "international educators to the basics of quantitative analysis and how it can be used to inform and to assess their work in the field" (Whatley, 2022, p. vii).

By providing scholar-practitioners with a field-specific approach to using quantitative analysis in IHE, the text contributes to the practice, teaching, and research of comparative and international higher education. Overall, Whatley's book serves the broader IHE community by putting forth an introductory, practice-based approach to quantitative analysis that will be attractive to students in introductory statistics courses and to more advanced researchers.

Overview of the Book

The first four chapters of the book introduce the researcher to beginner topics, such as data collection, types of variables, differences between descriptive and inferential statistics, measures of central tendency and variability, as well as hypothesis testing. Chapter 5 covers the one-way ANOVA and chi-square tests of independence, and Chapter 6 overviews correlation. Then chapters 7-9 delve into more advanced regression topics and quasi-experimental research, which Whatley argues is likely to increase in the near future (p. 165).

The final chapter 10 explains to readers how quantitative articles should be structured and what should be included in each section – a tremendous resource for early career scholars and graduate students, though perhaps not as relevant to practitioners. The book rounds out with useful appendices of critical values, answers to the practice questions, an overview of IHE journals, a glossary of key terms, and a bibliography of all referenced empirical literature and statistical guidebooks.

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For instructors, there is a companion site (Whatley, n.d.) that includes prepared slides of all the book's chapters, as well as quick links to the sample datasets used throughout the text. On the site, Whatley also lists corrections or amendments to the text and maintains a list of data sources in IHE research. Along with these timesaving materials, the sample datasets and practice problems allow this text to anchor quantitative research methods courses focused on IHE.

An Innovative and Timely Contribution to International Higher Education

The book considers the specificities of conducting quantitative research in IHE, and in doing so, it outlines the tools and strategies international educators have to explore the dynamics of their practice from a quantitative perspective. As an expansive yet succinct text, this book sets the stage for the next generation of research methods education in IHE studies—one that requires a field-specific, applied approach.

The examples from empirical IHE research that are integrated into each chapter to explain concepts and for use in the practical examples and exercises set the book apart as distinct to the study of IHE. The "Practice Problems" at the end of each chapter are exemplary in illustrating the concepts presented. Whatley walks readers through a variety of research scenarios in international education, from comparing the GPA differences between study abroad and non-study abroad students, to correlations of the quality of international students' friendship networks and students' feelings of social connectedness. These international education practice examples are the richest contributions of the book and what sets it apart from other introductory statistics textbooks.

Beyond the practice examples, each chapter lists further research articles from IHE that have used the topic presented in that chapter (e.g. correlation) in the "Recommended Reading" section. These example articles from IHE for each statistical analysis topic are a gold mine for seeing the methods implemented in practice, including how the concepts and results are presented and described. This element is surely advantageous also for even more advanced researchers, who can use vetted example articles to review when drafting manuscripts.

Discussion of the intricacies of conducting certain analyses offers a rich context for budding and more experienced international educators to think critically about how they are using data to make decisions. Through this, the author establishes why a distinct text on quantitative methods is necessary for global education practitioners.

Advancing Criticality in Quantitative Research in International Higher Education

The book has numerous strengths and I also saw one main area of improvement that could be considered for the next edition. To advance the rigorous use of quantitative methods in IHE research, it could incorporate a more detailed introductory discussion that situates quantitative analysis within higher education research methodologies, introduces critical approaches to quantitative research, and details data sources and research designs specific to IHE.

The introduction could benefit from onboarding the three different research communities in social science (Tashakkori et al., 2020), the importance of leading with research questions, and deciding when a quantitative approach would be deemed as appropriate. This is critical to avoid the 'methodolatry' of being a wholly 'quantitative' or 'qualitative' researcher that seeks to lead with their method of choice instead of the most appropriate approach based on the research questions they have (Janesick, 1994). As White (2017) emphasizes, "undue attachment to preference for particular methods … limits the range of research questions you can address and can also prevent you from fully developing your skills as a researcher" (p. 96). Such a re-framing would make clear that the quantitative approach is just one option in the analytical toolbox available to international scholar-practitioners. A revised introduction could also incorporate critical approaches to quantitative research. As Whatley herself argues in the preface, "international educators must also think more broadly in their critical approaches to analyzing and assessing the field" (Whatley, 2022, p. vii). To keep up with the cutting-edge developments in statistical analysis, introducing the student researcher to Critical Quantitative (e.g. Wells & Stage, 2015) and QuantCrit (e.g. Pérez Huber et al., 2018) from the start would bring them up to speed on the state-of-the-art in quantitative research and ensure they avoid potential pitfalls in designing studies, especially ones that attempt to better understand equity and access in IHE.

In addition, IHE-specific data sources and designs could be emphasized. Whatley has begun a list of secondary quantitative data sources in IHE on her companion site, and beyond adding this list to the book, the advantages and disadvantages of each source could be parsed out, as well as overall the limits of primary and secondary data in IHE. This

explanation could take into consideration the unique needs of international educators in accessing data (particularly from one's own institution) and the unique challenges of common datasets (e.g. OECD, UNESCO), institutional data (e.g. low sample sizes and/or response rates) and data types (e.g. using Rasch analysis for Likert data; Boone, 2016). A discussion of comparative research in IHE could also prove fruitful, especially since most of it uses large-scale quantitative analysis (Kosmützky & Krücken, 2014). Finally, how statistical analysis can be integrated into mixed methods research with examples could round out this section (e.g., Doyle et al., 2022; Whatley & Stich, 2021). Other quantitative adjacent methods like social network analysis, which are increasingly used in international higher and comparative education research, could also be included. Further, quantitative research designs common in IHE could be discussed in more depth, such as addressing the singular value of descriptive research and statistics, which can and sometimes should stand on their own (Loeb et al., 2017; White, 2017).

Early on in the book, Whatley claims that "descriptive statistics are limited to describing a particular sample, and researchers are often interested in conducting analyses that generalize to a larger population"–while a valid assumption, it is critical to emphasize the importance of descriptive statistics to beginning researchers (Loeb et al., 2017). Descriptive statistics can stand on their own, and depending on the research question, it may be more appropriate to use descriptive statistics combined with qualitative data than to force an inferential analysis. Another example is the list of survey design recommendations (Whatley, 2022), which is useful since many IHE practitioners must create their own surveys without the help of a survey methodologist. However, such do-it-yourself survey creation can undoubtedly impact the results of the institutional-level research commonly undertaken by IHE's scholar-practitioners. A few texts, such as the one by Andres (2012) could be recommended as additional resources for independently designing surveys. At the same time, such methods-focused instruction may be a little too advanced for an introduction.

Conclusion: A TrailBlazer

Melissa Whatley's *Introduction to Quantitative Analysis for International Educators* provides an advanced introduction to conducting robust quantitative research in international higher education. In preparing to write this review, I used this book while working through a thesis research project and can confidently state that it is a helpful reference for emerging scholars of IHE. While aimed at the novice scholar-practitioner, the use of empirical examples to illustrate each of the statistical techniques will also interest the more advanced international education researcher. While the book is an excellent resource for scholars, readers should be aware that the book starts from an assumption that researchers have already decided to conduct quantitative analysis (rather the presenting a discussion of when quantitative is the appropriate method) and the book may be less approachable for those without a solid training or background in quantitative research or international education data sources.

There is no doubt this book is destined for a second edition as it becomes a mainstay in methods courses in the ever-growing number of graduate programs in IHE across the world. The second edition could be made more accessible to the broad range of practitioners and scholars who work in this field by leaning less on hand calculations of formulas. To Whatley's point, "As international education professionalizes as a field, it is increasingly essential that scholars, practitioners, and other individuals in international education are able to use quantitative data to assess, evaluate, and critically examine international education activities and practices—both at individual institutions and on broader scales" (Whatley, 2022, p. vii). There will continue to be demand for more IHE-specific instruction, and Whatley's *Introduction to Quantitative Analysis for International Educators* provides a blueprint for future methods textbooks in the field.

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