EDUCATIONAL SCIENCES: THEORY & PRACTICE eISSN: 2148-7561, ISSN: 2630-5984

Received: 20 March 2021

Revision received: 1 October 2021

Accepted: 20 November 2021

www.jestp.com

DOI 10.12738/jestp.2021.4.001 ♦ **December** 2021 ♦ 21(4) ♦ 1-16

Article

Educational Disruption and Innovative Teaching During the Pandemic: An Empirical Study

Anas Ratib Alsoud
AL-Ahliyya Amman University, Hourani Center for Applied Scientific Research
a.alsoud@ammanu.edu.jo
https://orcid.org/0000-0002-1410-8843

Hamad Balhareth
Saudi Electronic University
h.balhareth@seu.edu.sa
https://orcid.org/0000-0002-0582-3597

Junainah Abd Hamid
Management and Science University
junainah@msu.edu.my
https://orcid.org/0000-0003-3078-6123

Sakinah mohd shukri
Management and Science University
sakinahshukri@msu.edu.my
https://orcid.org/0000-0002-9100-014X

Sultan Al-masaeed
AL-Ahliyya Amman University, Hourani Center for Applied Scientific Research
s.masaeed@ammanu.edu.jo

Jacquline Tham*
Management and Science University
jacquline@msu.edu.my
https://orcid.org/0000-0003-0966-2425

Abstract

Due to the Covid-19 lockdown, educational disruption has become a global concern, necessitating a concentration of regulators and new researchers to resolve. Thus, the current study examines the role of instructors' inventiveness and commitment to resolving educational disruptions in Malaysian institutions. Additionally, this paper explores the mediating function of educational system improvement in the relationship between teacher innovativeness, teacher commitment, and educational disruption in Malaysian universities. The current study collected primary data from chosen respondents via survey questionnaires. Additionally, the PLS-SEM was utilised to investigate the relationship between the variables in this study. The findings indicated that teachers' inventiveness and devotion to education positively resolve educational disruptions in Malaysian universities. Additionally, the data revealed that upgrading the educational system greatly mediates the relationship between teachers' innovativeness, teachers' dedication, and eradicating educational disturbance in Malaysian institutions. The current study serves as a guide for future scholars who wish to investigate this topic further and serves as a resource for policymakers who wish to design legislation to eradicate educational interruption.

Keywords

Teachers' innovativeness, teachers' commitment, educational disruption, Malaysian universities, improved educational system

Correspondence to Jacquline Tham, Management and Science University, jacquline@msu.edu.my,

Citation: Alsoud A. R., Balhareth H., Hamid J. A., shukri S. m., Al-masaeed S., Tham S. (2021). Educational Disruption and Innovative Teaching During the Pandemic: An Empirical Study. *Educational Sciences: Theory and Practice, 21*(4), 1 - 16. http://dx.doi.org/10.12738/jestp.2021.4.001

Since the pandemic Covid-19 and its consequences became public, it has been a favourite topic of debate among scholars and academics. The Covid-19, a chronic and widespread disease, has wreaked havoc on the global school system. It imposed pressure on educational institutions like schools, colleges, universities, and child care centres to cease operations openly (Pather et al., 2020). The governments of most countries have opted to close educational institutions, believing that this is the only way to combat the spread of Covid-19 (El Masri & Sabzalieva, 2020). As a result of the states' collective efforts to combat the pandemic Covid-19 by periodically closing educational institutions and implementing non-medical and preventive measures such as self-isolation and social distancing, elementary, secondary, and higher education have been closed in more than 100 nations (Harris & Jones, 2020). Due to the lethal disease Covid-19, various school closures worldwide have been a huge success, albeit in varying degrees. By the first quarter of 2021, school closures had significantly disrupted over 825.0 million students' academic lives due to the pandemic's broad spread. García-Morales et al. (2021) Claimed that school closures occurred at various levels, with twenty-three countries implementing school closures at the country level and forty nations implementing school closures at the local level; approximately half of the total student population was impacted. Simultaneously, 122 countries have continued to establish educational institutions.

Rodrigues et al. (2020) assert that implementing school disclosures has been a tremendous success in containing the infectious pandemic and limiting its economic and social consequences in the future. By the way, the school closure project's effectiveness has been demonstrated by the sustained contacts between educational stakeholders and corporate stakeholders. The rapid implementation of the programme to close educational institutions has resulted in a decrease in fatalities and virus infection instances. However, education has been significantly disrupted throughout the world, and the quality of education has been eroded (Watermeyer et al., 2021). When educational institutions disappear, and it becomes impossible for all students to continue their studies on their own, the scope and quality of education suffer. The majority of students who were unable to continue studying due to the severe pandemic onslaught became dissatisfied with the various educational methods adopted due to their inadequacy (Alsoufi et al., 2020). One of the primary reasons for education's lack of consistency, reliability, and efficacy is the institutional management and teaching staff's weakness. Educational administrators and teachers must be forward-thinking and dedicated to their professions and organisations. They must adapt to abrupt change and embrace innovation in technology, processes, and other resources to create a comfortable learning environment, minimising disruption to education and ensuring long-term viability (Hall et al., 2020).

The study investigates the effects of teachers' innovativeness and commitment on eradicating instructional disruption in Malaysia's education system during pandemic Covid-19. Malaysia has also been impacted by Covid-19 and must face the resulting educational costs (Choi et al., 2021). In Malaysia, the disruption of education has revealed substantial educational inequities and the educational system's potential. As with the other places where Covid-19 has not been distributed evenly, it also has a disproportionate impact on children who already face barriers to education (Mohamad Nasri et al., 2020). Even though great attention has been paid to online learning platforms in Malaysia, many schools continue to operate with severe resource constraints. As a result, the learning environment where these learning platforms can be used has not been built, as schools may lack the requisite Internet access. This is particularly true for children and students who live in rural locations where technology has not been integrated into the system, and Internet connection is either unavailable or limited (Wong & Alias, 2021). Such disruption requires educators to focus on the most accessible tools and approaches to serve various student demographics and learning settings (Ali et al., 2021).

Since March 18, 2020, when the lockdown began, it has been vital to provide instant remote teaching. The country has been obliged to adapt fast to emergency distance teaching and learning, necessitating rapid adaptation. To combat the spread of COVID-19, traditional face-to-face classes have been substituted by online learning. These policies have encouraged students to learn from home, and teachers have designed curricula to accommodate synchronous or asynchronous remote learning (Loganathan et al., 2021). Sarawak, Malaysia's

largest state, was compelled to transition 423,962 kids and 1,458 educational institutions (pre-school: 22 958; primary: 193; secondary: 238, 182) in the 12 divisions to online homeschooling due to the outbreak. Teachers continue to teach and learn using a variety of online platforms throughout the Disaster Management Committee's Movement Control Order (MCO) and Conditional Movement Control Order (CMCO) (Azlan et al., 2020). The students ' broad geographical distribution has made the shift to online learning has been made more challenging. Teachers were tasked with developing unique digital technology skills, creating compelling content via online programmes, and making it accessible to students who may not have equal access to technology (Ma et al., 2021).

Given the difficult and multifaceted nature of the transition to online learning, there is little doubt that the demand for new solutions to improve educational results has intensified. It is vital to embrace disruption in education to ensure that students receive extensive support and have improved involvement and access to education (Azman et al., 2020). The current study examines and questions the disruption of education caused by the severe outbreak of pandemic Covid-19. This study investigates the effects of teachers' innovativeness and dedication to addressing educational disturbance. Additionally, the project intends to develop a moderator for the enhanced educational system, bridging the gap between instructors' innovativeness and commitment and eradicating educational disruption. The authors' study would be a significant contribution to the literature. To begin, numerous authors have addressed the innovativeness of teaching staff in assessing a country's capacity to eliminate the educational disruption and increase educational sustainability, although typically in broad strokes.

Similarly, some intellectuals have examined the relationship between teachers' dedication and eradicating educational interruptions, but in a context different from Covid-19. The authors effectively examine the relationship between instructors' innovativeness, commitment, and reducing instructional disruptions. Second, researchers have shed light on the effects of instructors' inventiveness and devotion to eradicating educational disruption, although in distinct studies. The authors' action expands the theoretical work by combining the effects of teachers' innovativeness and teachers' dedication to removing instructional interruption. Third, the study's emphasis on an enhanced educational system as a moderator between teachers' innovativeness and dedication and on removing educational disturbance contributes to the literature in and of itself, given the lack of research on this subject. Fourth, the educational sector in Malaysia is the subject of the study, as it is a victim of the Covid-19 pandemic.

The following sections compose the current study: Following an introduction to the research, the study illuminates literary reviews to develop hypotheses about the relationship between instructors' innovativeness and their dedication to eradicating educational disturbance. Then, processes for data collection and analysis of the variables and relationships' dependability were adopted. The effective analysis enables the extraction of real results on the nexus of the relevant factors. The findings are corroborated by earlier research conducted by many authors on a similar issue. Finally, the paper discusses the study's implications and conclusions, followed by its limitations.

Literature Review

Covid-19 is a newly discovered lethal and contagious disease that can spread fast through contact and virus-infected air particles. As a result, it is more likely that the disease will spread quickly in populated areas. The only non-pharmaceutical measure that is successful is crowd control in marketplaces, public spaces, and social institutions (Adi Badiozaman & Segar, 2021). It results in school closures to circumvent the pandemic's predominance by avoiding face-to-face classes, physical contact, and the effect of one's breathing on others. This has successfully contained the pandemic's spread, but it has disturbed a country's educational system. It narrows the breadth of education, diminishes its potential, and has a detrimental effect on knowledge and skill development (Jasmis et al., 2021; Khoma & Vdovychyn, 2021). Though online classes can shield education from pandemic impacts, they are difficult to adopt because of institutions' lack of online education accessories and teachers' incompetence or unwillingness to perform effectively in online classes. However, focusing on an enhanced education system, teachers' innovation, and teachers' commitment can successfully address Covid-19's issues and

resolve school disruption. Since the covid-19 breakout session, other authors have shared their perspectives on the significance of teachers' inventiveness and devotion in improving education systems and eradicating educational disturbance. The current study presents hypotheses with the assistance of these arguments.

Teachers' innovativeness refers to their capacity to adapt to changes in their teaching or educational contexts by altering their attitudes toward new inventions or discoveries, producing new thinking, and developing dynamic abilities for adopting new educational technologies or teaching methods. Zhu and Liu (2020) argue that numerous digital technologies and applications benefit education because they improve and sustain education in various areas. Teachers' innovativeness is defined by their familiarity with and adoption of these digital technologies and applications. The degree to which teachers are inventive determines how much disruption to education occurs during a pandemic, as it can promote digital homeschooling, a distant learning option (Pichardo et al., 2021). d'Orville (2020) wrote an article to examine instructors' inventiveness in resolving education disruptions induced by Ciovid-19. This study is based on previously released studies and arguments from various intellectuals regarding the role of innovation in education and the need to eliminate educational disruption. This study discusses the problem of education disruption caused by the predominance of Covid-19, poses the question of whether there is a path to a new normal school system, and then answers the question by shedding light on teachers' innovativeness and its impact on education disruption. The study concludes that institutions with creative professors have continued high-quality education delivery to students via online platforms and have avoided education disruption. Lagat (2020) did a descriptive-correlational study to examine teachers' innovativeness and educational disruption in the context of Covid-19. The data were obtained using questionnaires created by the researcher and analysed using standard deviation, weighted mean, Rank-Biserial Correlation, and Spearman Rho Correlation. The innovativeness of teachers was assessed through their use of flexible learning tools. According to the study, innovative teachers can implement flexible learning strategies for students that focus on the transition from traditional schooling to an online teaching-learning environment. This minimises disruption to education during pandemics. Similarly, Bubb and Jones (2020) state that teachers who acquire the knowledge and skills to use appropriate digital devices such as smartphones, tablets, computers, and laptops, social media platforms such as What's App, and a variety of educational apps such as Nearpod, Viper (Window), Attendance, too noisy, and thing link can maintain contact with students and continue their education beyond the end of the course of study. Based on the previous study, the following can be hypothesised:

H1: *Teachers' innovativeness has a positive relationship with removing educational disruptions during a pandemic*

Commitment is a vital characteristic of an employee, and it is a necessary qualification for the teaching profession. Teachers that are committed are never satisfied with what they have; rather, they are constantly on the lookout for new ideas and ways to assist students. Teacher commitment refers to the emotional or cognitive bond teachers have with their profession, their students, and the organisation for which they work. Teachers that are dedicated demonstrate passion, excitement, enthusiasm, desire, and energy in their commitment and sense of responsibility to their profession, students, and organisation (ADELOWOTAN, 2021; Hamel, 2021; Tejedor et al., 2021). Carrillo and Flores (2020) suggest that a committed teacher is motivated to help students reach the minimum educational criteria and overcome obstacles in their learning processes. Aslan et al. (2020) conducted a study to determine teacher commitment, teacher leadership, and support for student learning during the covid-19 disruption.

To construct this study, a review of the literature was conducted, focusing on instructors' dedication and student learning during school closures. The descriptive qualitative approach was used to conduct analysis and interpretation following data collection. The instructor's dedication, the teacher's motivation, the resources available to the teacher, the mentoring process, and the success evaluation are all included in the analysis and interpretation. This study asserts that when economic demands, emotional satisfaction, and health are met in some educational

institutions, teachers develop an emotional tie to the organisation and are committed to its aims. Thus, instructors' commitment enhances their efficacy in student attendance, student participation in learning, and assessment of their performance, all of which are necessary for resolving educational disruption. Almazova et al. (2020) argue that devoted teachers are brimming with vitality, excitement, passion, ambition, and enthusiasm. Such teachers are willing to challenge the established quo, transform the educational environment, and pioneer new teaching methods and professions. When the epidemic Covid-19 swept the globe, wreaking havoc on the education sector and prompting school closures, instructors committed to their vocation did all possible to overcome difficulties and continue teaching. Based on the literary grounds presented above, we propose the following hypothesis:

H2: *Teachers' commitment positively impacts removing educational disruptions during a pandemic.*

Ellis et al. (2020) discuss the innovative changes imposed on institutions and individuals to address the education disruption caused by covid-19 and the improvement of the educational system's analysis. The data were gathered through interviews with a global sample of ITE leaders to understand better the role of teacher innovation in improving the education system and mitigating education disruption caused by Covid-19. The study demonstrates that when teachers are encouraged to practice creativity and innovation and are provided with periodic learning and training opportunities, they are prepared to improve teaching resources, teaching methods, and the learning environment for students (Abobaker et al., 2021; Kose et al., 2021; Wijaya & Sumiati, 2021). They never hesitate to adopt education technology or software applications necessary for online education to accomplish this. Thus, the teachers' innovativeness contributes to education sustainability by avoiding disruptions in education. Dhawan (2020) conducted an online study during the Covid-19 crisis to examine the relationship between teachers' innovativeness, educational system improvement, and education disruption reduction. According to the study, teachers with a high level of innovativeness can extract opportunities from difficult situations due to their original thinking and capacity to put innovative thinking into practice. Teachers who possess these abilities help steer the educational system in the right direction. Heavy technologies, software, and innovation are likely to be used for educational purposes.

Through educational technologies and software solutions, disruptions in education can be minimised during Covid-19. Chang et al. (2021) conducted a scholarly article, which sheds light on teachers' innovativeness, education system improvement, and eradicating education disruption. The study concludes that the use of digital technologies such as smartphones, tablets, and laptops, as well as internet services and specialised education applications such as Nearpod, Viper (Windows), Attendance, TooNoisy, ThingLink, BehaviorFlip, and Bouncy Balls, improves education management, course administration, class regularity, and performance evaluation. This level of improvement is only possible when teachers possess innovative knowledge, thinking, and skills and apply them appropriately. This innovative improvement to the education system mitigates disruptions and weaknesses in education. Additionally, Triviño-Cabrera et al. (2021) state that teachers' innovativeness strengthens the educational system in its functions and eliminates time and space constraints on education disruption. As a result,

H3: *Improved educational system plays a mediating role between teachers' innovativeness and removing educational disruptions during a pandemic*

When teachers are committed to their profession or the institution they work in, they are devoted to their work, enthusiastic, dedicated, and responsible. They are perpetually dissatisfied with their contributions to the organisation. They never stop striving to improve school management, student learning, and long-term educational achievement. Teachers' responsible and competent performance enables the school system and its operations to evolve and innovate. Such devoted teachers are an important tool for educational institutions to manage disruptions in education during the Covid1-19 period (Allen et al., 2020; HALEK & UTOMO, 2021). Azhari and Fajri (2021) published a research article to examine the effects of teachers' dedication, education system reform, and minimising education disruption. The study asserts that instructors' sympathetic attachment

to organisational management due to the organization's pleasant and helpful behaviour toward teaching staff has a favorable effect on their ability to perform professional duties efficiently (Başal et al., 2021). Committed instructors are responsible for their own work functions and for administrative, regulatory, and assessment practices. This enhanced educational system is far less likely to be disturbed by the pandemic covid-19.

Similarly, a study conducted by Dias et al. (2020) demonstrates that committed teachers possess the dedication, enthusiasm, and energy necessary to generate new ideas, expend additional effort, devote time, develop strategies in the best interests of the students' organisation, and attempt to implement them. As a result, teachers' devotion improves the educational system. When the education system is strengthened, it becomes easier to overcome the worsening situation in education during health problems and the inability to assemble in one location since online education can be pushed. As a result,

H4: *Improved educational system plays a mediating role between teachers' commitment and removing educational disruptions during a pandemic.*

Research Methodology

The research studies the importance of teachers' innovativeness and commitment in resolving educational disruptions at Malaysian universities and the mediating effect of strengthening the educational system in the relationship between teachers' innovativeness, teachers' commitment, and resolving educational disruptions. The current study collected primary data from chosen respondents via survey questionnaires. The questionnaires use a "five-point Likert scale," with one point representing "strongly disagree" and five representing "strongly agree." The questionnaire linked to the teachers' innovativeness was adopted from Buske (2018), while questionnaires connected to the teachers' commitment were adopted from the work of Pietsch et al. (2019). Additionally, the questionnaire on improving the educational system was adapted from Babintsev et al. (2021), while the questionnaire on removing educational disturbance was adapted from Debbarma and Durai (2021).

In addition, the current article has employed "simple random sampling to select the responders. The teachers are the respondents of the survey, and the researchers have selected the top fifty institutions of Malaysia based on "purposive sampling". Thus, the researchers have sent roughly 1065 questionnaires to the selected teachers, but only 757 surveys were returned after a few days. These questionnaires reflect a roughly 71.08 per cent rate of response. The current study has taken two predictors: teachers' innovativeness (TI) with ten items and teachers' commitment (TC) with eight things. In addition, the researchers have adopted one mediating variable, improved educational system (IES), with six items and employed the remove educational disruption (RED) as the dependent variable with seven items. These constructs are provided in the theoretical framework in Figure 1.

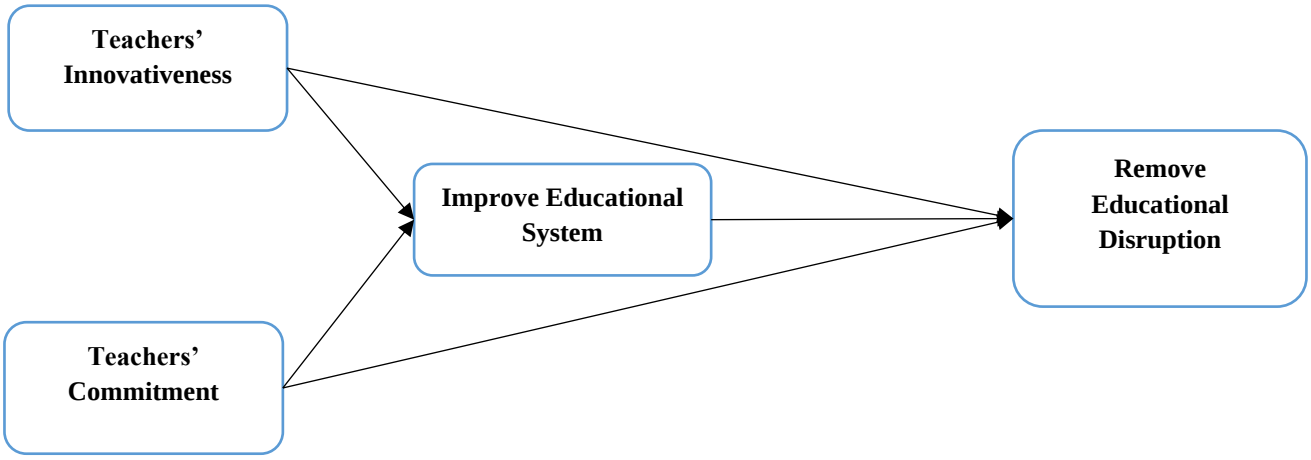

Figure 1: *Theoretical framework*

Additionally, the PLS-SEM was utilised to investigate the relationship between the variables in this study. The statistical tool estimates construct reliability and item validity using the "measurement model assessment" method and the link between the constructs using the "structural assessment model." This statistical tool performs well even in a complex framework and provides the most accurate estimation even when the sample size is huge (Hair Jr et al., 2021). The current paper examined the link between items known as convergent validity using "Alpha, factor loadings, average variance extracted (AVE), and composite reliability (CR)." Additionally, the current work examined the correlation between factors known as discriminant validity using the "Fornell Larcker, cross-loading, and Heterotrait Monotrait (HTMT) ratio." Finally, the current paper examined the relationship between variables using "path analysis."

Research Findings

The current article used the “Alpha, factor loadings, AVE and CR” to examine the correlation between convergent validity items. The values of “factor loadings and AVE” are more than 0.50, the indication of valid convergent validity. In addition, the values of “Alpha and CR” are also larger than 0.70, the indication of valid convergent validity. The convergent validity results are given in Table 1.

Table 1: *Convergent validity*

Constructs	*Items*	*Loadings*	*Alpha*	*CR*	*AVE*
Improve Education System	IES1	0.801	0.860	0.895	0.589
	IES2	0.828			
	IES3	0.732			
	IES4	0.754			
	IES5	0.802			
	IES6	0.678			
Remove Educational Disruption	RED1	0.731	0.872	0.901	0.565
	RED2	0.750			
	RED3	0.747			
	RED4	0.742			
	RED5	0.777			
	RED6	0.760			
	RED7	0.754			
Teachers' Commitment	TC1	0.693	0.811	0.861	0.573
	TC2	0.562			
	TC3	0.593			
	TC5	0.751			
	TC6	0.746			
	TC7	0.660			
	TC8	0.781			
Teachers' Innovativeness	TI1	0.776	0.890	0.912	0.567
	TI10	0.638			
	TI2	0.803			
	TI3	0.811			
	TI4	0.777			
	TI5	0.751			
	TI7	0.714			
	TI9	0.741			

In addition, the current article has used the "Fornell Larcker, cross-loading and HTMT ratio" to examine the correlation between variables called discriminant validity. The values of "Fornell Larcker" have been shown that the relationship with the variable itself is stronger than with other variables and the indication of valid discriminant validity. The Fornell Larcker results are given in Table 2.

Table 2: *Fornell Larcker*

	IES	*RED*	*TC*	*TI*
IES	0.768			
RED	0.638	0.752		
TC	0.554	0.721	0.688	
TI	0.656	0.604	0.664	0.753

The values of "cross-loadings" have also been shown that the relationship with the variable itself is stronger than with other variables and the indication of valid discriminant validity. The cross-loading results are given in Table 3.

Table 3: *Cross-loadings*

	IES	*RED*	*TC*	*TI*
IES1	**0.801**	0.565	0.455	0.601
IES2	**0.828**	0.424	0.423	0.449
IES3	**0.732**	0.460	0.438	0.438
IES4	**0.754**	0.529	0.398	0.547
IES5	**0.802**	0.387	0.377	0.419
IES6	**0.678**	0.519	0.440	0.509
RED1	0.448	**0.731**	0.580	0.613
RED2	0.501	**0.750**	0.533	0.581
RED3	0.498	**0.747**	0.512	0.577
RED4	0.477	**0.742**	0.442	0.599
RED5	0.449	**0.777**	0.456	0.622
RED6	0.496	**0.760**	0.616	0.627
RED7	0.488	**0.754**	0.631	0.609
TC1	0.486	0.595	**0.693**	0.492
TC2	0.323	0.385	**0.562**	0.312
TC3	0.331	0.438	**0.593**	0.426
TC5	0.333	0.486	**0.751**	0.442
TC6	0.377	0.488	**0.746**	0.440
TC7	0.377	0.465	**0.660**	0.514
TC8	0.405	0.564	**0.781**	0.533
TI1	0.542	0.583	0.517	**0.776**
TI10	0.474	0.506	0.438	**0.638**
TI2	0.442	0.634	0.473	**0.803**
TI3	0.525	0.642	0.543	**0.811**
TI4	0.545	0.646	0.535	**0.777**
TI5	0.368	0.510	0.419	**0.751**
TI7	0.576	0.635	0.492	**0.714**
TI9	0.438	0.653	0.552	**0.741**

The "HTMT ratio" values are not larger than 0.90 and show that the relationship with the variable itself is stronger than with other variables and indicates valid discriminant validity. The HTMT results are given in Table 4.

Table 4: *Heterotrait Monotrait ratio*

	IES	*RED*	*TC*	*TI*
IES				
RED	0.723			
TC	0.652	0.844		
TI	0.729	0.607	0.772	

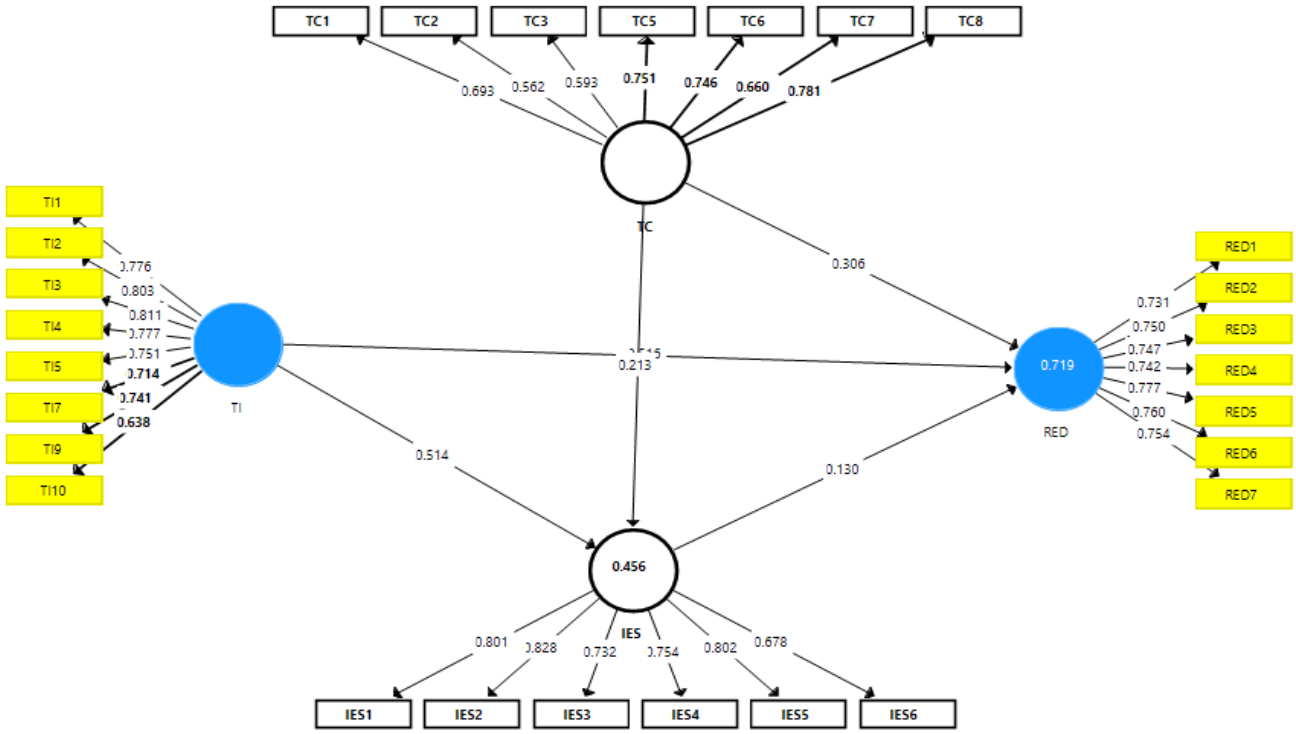

Figure 2: *Measurement model assessment*

Finally, the current article has used the "path analysis" to examine the association between variables. The findings in Table 5 related to the direct path revealed that the teachers' innovativeness and commitment positively link with removing the educational disruption in Malaysian universities and accepting H1 and H2. The results exposed that if one per cent increase in IES, the RED will also increase by 0.130 per cent and vice versa. In addition, the statistics also exposed that if one per cent rise in TC, the RED will also increase by 0.306 per cent and vice versa. Finally, the figures exposed that if one per cent increase in TI, the RED will also increase by 0.516 per cent and vice versa.

Table 5: *Direct path analysis*

Relationships	*Beta*	*Standard Deviation*	*T Statistics*	*P Values*	*L.L.*	*U.L.*
IES -> RED	0.130	0.029	4.509	0.000	0.073	0.183
TC -> IES	0.213	0.039	5.454	0.000	0.140	0.291
TC -> RED	0.306	0.029	10.695	0.000	0.258	0.366
TI -> IES	0.514	0.040	12.790	0.000	0.443	0.589
TI -> RED	0.516	0.031	16.567	0.000	0.456	0.573

The findings in Table 6 related to the indirect path also exposed that improve educational system significantly mediates among the nexus of teachers' innovativeness, teachers' commitment and remove the educational disruption in Malaysian universities and accepts H3 and H4.

Table 6: *Indirect path analysis*

Relationships	*Beta*	*Standard Deviation*	*T Statistics*	*P Values*	*L.L.*	*U.L.*
TI -> IES -> RED	0.067	0.016	4.094	0.000	0.036	0.099
TC -> IES -> RED	0.028	0.008	3.645	0.000	0.014	0.041

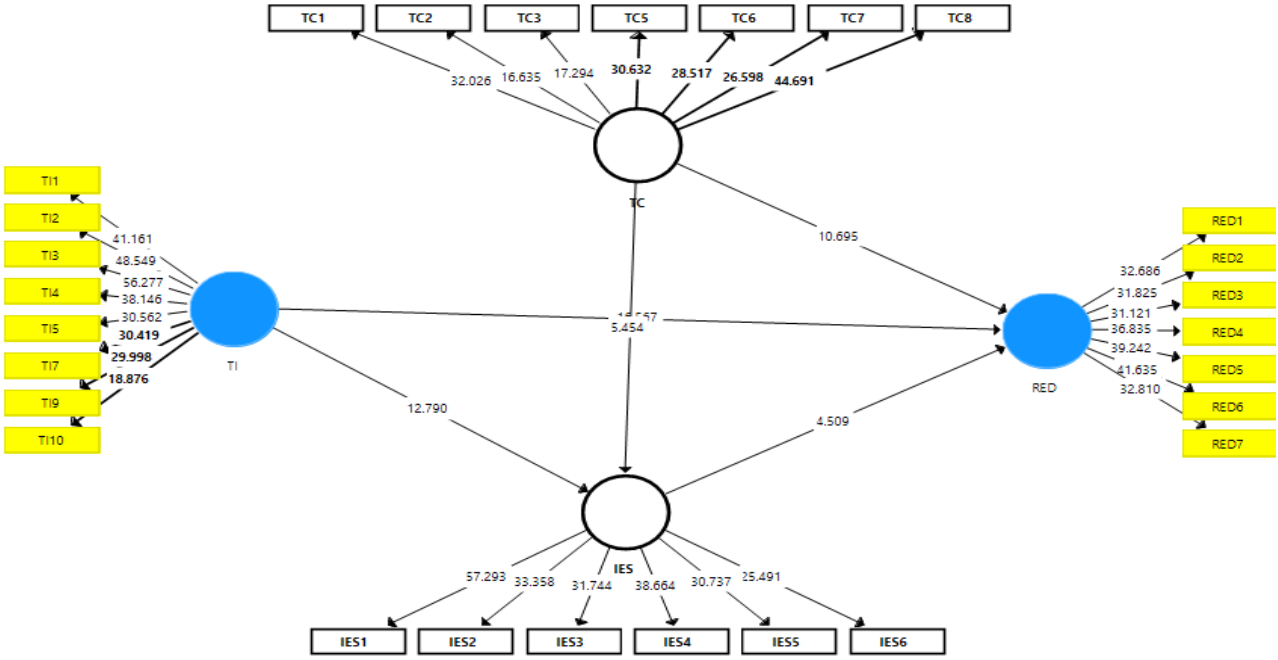

Figure 3: *Structural model assessment*

Discussions

The findings suggested that instructors' inventiveness correlates positively with eliminating educational disruptions during pandemics. These findings are corroborated by Kaden (2020) recent work, which examines the role of teachers' innovativeness in resolving educational disturbance. This means that in critical situations such as health crises, adverse geographic changes, or political mishaps when regular classes in the education building are prohibited, the teachers' ability to comprehend the situation, accept the changes, and develop innovative skills to continue teaching online promotes distance learning and eliminates education disruption. As a result, the teacher's inventiveness helps to minimise interruption in teaching. These findings corroborate a previous study by Zhou et al. (2020), which found that teachers' willingness to adapt to new educational requirements is beneficial in difficult situations that limit teachers and students' ability to interact on an actual plate-form, as they can use digital means of education such as digital social media and various apps specifically designed for providing virtual classrooms to continue teaching their classes. Thus, instructors' inventiveness contributes to the reduction of educational disturbance. These findings corroborate a previous study by Clark et al. (2021), which found that teachers who possess the ability to acquire the knowledge and skills necessary to use appropriate digital devices such as smartphones, tablets, computers, and laptops, social media platforms such as what's an app, and various educational apps such as Nearpod, Viper (Window), Attendance, TooNoisy, and thing link maintain contact with students and continue their education.

The findings suggested that instructors' dedication to removing instructional disruptions during pandemics is positively related to their ability to do so. These findings are corroborated by Nambiar (2020) research, which demonstrates that students who are committed to their teaching profession exhibit energy, excitement, passion, desire, and enthusiasm. Students are willing to challenge the status quo, alter the conditions of a teaching environment, and develop something different or novel in terms of their teaching methods and profession. When the pandemic Covid-19 spread around the world and impacted the education sector, resulting in school closures, instructors committed to their profession made every effort to overcome the difficult circumstances and find a means to continue teaching. This demonstrates that instructors' dedication assists them in resolving educational interruptions. These findings corroborate Rapanta et al. (2020) earlier study, which asserts that teachers who are devoted to the institution where they provide their services align their intentions and actions with the organization's aims. During a pandemic, online or distant education might be a beneficial approach to continue your education. Committed instructors provide new ideas, conduct research, and develop the skills necessary for online instruction; as a result, they contribute to lessening disruption in education. These findings are also supported by Mahmood (2021) scholarly article, which explains that teachers' commitment to their profession motivates them not only to accept the deteriorating state of the education sector as a result of pandemic covid-19 but also to challenge established practices and adopt innovative methods such as using different apps to manage courses, teach students via virtual classes, ensure their attendance, evaluate their learning students, and achieve desired goals. As a result, committed teachers help to minimise disruptions in teaching.

The findings suggest that an enhanced educational system acts as a buffer between instructors' inventiveness and the elimination of educational disruptions during pandemics. These findings are corroborated by Mishra et al. (2020) research article, which demonstrates that the only way to mitigate the educational disruption caused by restrictions on face-to-face education within institutions' boundaries was through homeschooling via online tutors who are proficient in online teaching. This is achievable through teachers' efforts with a high level of innovativeness in an enhanced and inventive education system. These findings are corroborated by a previous study conducted by Košir et al. (2020), which indicates that when teachers exhibit a high level of innovativeness, they can extract opportunities from difficult situations due to their innovative thinking and ability to put innovative thinking into practise. Teachers with these qualities guide the educational system in the right direction. Innovative and sophisticated technologies and software are almost certain to be used in education. Education interruption can be minimised during covid-19 using educational tools and software solutions. The findings suggest that an enhanced educational system acts as a buffer between teachers' commitment and the elimination of educational disruptions during pandemics. These findings are corroborated by Shrestha et al. (2021) research article, which states that committed teachers have the dedication, enthusiasm, and energy to generate new ideas, exert extra effort, devote time, develop strategies that are in the best interests of students and the organisation, and do their best to see that these strategies are implemented. As a result, teachers' devotion helps to strengthen the educational system. When the education system is strengthened by the addition of high-quality human resources (teaching staff), it becomes easier to overcome the worsening situation in education during times of health crises when gathering in one location is not possible since online education can be pushed.

Implications

The new study has significant theoretical implications because it contributes significantly to the body of knowledge on educational improvement. This article discusses the role of teachers in resolving educational interruptions caused by pandemic Covid-19's widespread prevalence. It investigates two broad concepts, teacher innovation and teacher commitment, and their implications for eradicating educational disruption. Several previously published research articles have examined the relationships between teachers' innovativeness, teachers' dedication, and the elimination of educational disturbance. However, there is no concurrent

investigation into the effects of teachers' innovativeness and commitment to eradicating educational disturbance in the literature. The current examination of teachers' inventiveness and commitment in eradicating educational disturbance occupies a unique position in the literature. Though the relationship between an improved educational system and teachers' innovativeness, commitment, and eradication of educational disruption has been examined for the first time in the literature, it has been analysed as a mediator between teachers' innovativeness, commitment, and eradication of educational disruption. The current study serves as a guide for future scholars who wish to investigate this topic further and serves as a resource for policymakers who wish to design legislation to eradicate educational interruption. The current study is significant for global economies, particularly those affected by pandemics such as covid-19 because it addresses the disruption of education produced by pandemic prevalence. This aids government and educational institution management in controlling disruptions in education by promoting teachers' competencies and their relationships with education stakeholders. This study demonstrates that the disruption to schooling produced by pandemic covid-19 may be addressed by increasing teachers' inventiveness, devotion, and improvement to the educational system.

Conclusions & Limitations

The purpose of this study was to examine the effects of teachers' innovativeness and commitment on resolving educational disruption caused by Covid-19 and the effect of an improved education system on the association between teachers' innovativeness and commitment and resolving educational disruption. The authors gathered data from the educational sector in Malaysia's economy to explore ways to improve the education system, teachers' innovativeness, teachers' dedication, educational disruption, and their mutual relationships. The empirical findings indicated a favourable correlation between teachers' innovativeness and their dedication to resolving educational disturbance. The findings suggested that when teachers exhibit innovativeness, they submit to adversity. Rather than that, they think differently and attempt to extract opportunities from a complex circumstance, enabling them to mitigate the interruption to education produced by Covid-19. Additionally, the results indicated that teachers' devotion to their teaching profession or organisation pushes them to work tirelessly to defend the organization's effectiveness and thus minimise education disruption during a pandemic. Additionally, the results indicated that instructors' innovativeness and devotion strengthen the education system, hence minimising educational disruption.

Numerous limits are identified in this work of literature, and it is hoped that future academics will build upon and eliminate these shortcomings. This study focuses exclusively on instructors' function, such as their innovativeness and devotion, and their impact on eradicating educational disruption. Teachers' talents, students' talent, and access to online education accessories, among other factors, all play a role in resolving educational disruption. However, these all-important aspects were overlooked, leaving the study incomplete. Additionally, the writers must assess teachers' abilities, students' talent, and students' access to online education accessories to determine how to minimise education interruption. The purpose of this study is to examine the mediating effects of an enhanced education system on the relationship between teachers' innovativeness and dedication and educational disruption. Additionally, an enhanced education system can mediate instructors' innovativeness and devotion, thereby minimising instructional disruption.

References

Abobaker, R. M., Khalil, S. E., Merghani, M. M., Mahadeen, A., Abdelraheem, E. G., & Hamdan-Mansour, A. M. (2021). E-learning Success Factors from the Perspective of Academic Staff at Nursing and Education Colleges During COVID-19 Pandemic: A Comparative Study. *Educational Sciences: Theory & Practice*, *21*(3), 1-11. https://jestp.com/index.php/estp/article/view/1458/800

ADELOWOTAN, M. (2021). Educational Innovations for Coping Up with Covid-19 Situation in South African Universities. *Eurasian Journal of Educational Research*(95), 139-155. https://ejer.info/index.php/journal/article/view/449/12

Adi Badiozaman, I. F., & Segar, A. R. (2021). Exploring online teaching competence in the context of the COVID 19 pandemic: insights from Sarawak, Malaysia. *Journal of Further and Higher Education*, 1-14. https://doi.org/https://doi.org/10.1080/0309877X.2021.2002284

Ali, M., de Azevedo, A. R., Marvila, M. T., Khan, M. I., Memon, A. M., Masood, F., Almahbashi, N. M. Y., Shad, M. K., Khan, M. A., & Fediuk, R. (2021). The influence of covid-19-induced daily activities on health parameters—a case study in Malaysia. *Sustainability*, *13*(13), 7465. https://doi.org/https://doi.org/10.3390/su13137465

Allen, J., Rowan, L., & Singh, P. (2020). Teaching and teacher education in the time of COVID-19. *Asia-Pacific Journal of Teacher Education*, *48*(3), 233-236. https://doi.org/https://doi.org/10.1080/1359866X.2020.1752051

Almazova, N., Krylova, E., Rubtsova, A., & Odinokaya, M. (2020). Challenges and opportunities for Russian higher education amid COVID-19: Teachers' perspective. *Education Sciences*, *10*(12), 368. https://doi.org/https://doi.org/10.3390/educsci10120368

Alsoufi, A., Alsuyihili, A., Msherghi, A., Elhadi, A., Atiyah, H., Ashini, A., Ashwieb, A., Ghula, M., Ben Hasan, H., & Abudabuos, S. (2020). Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. *PloS one*, *15*(11), e0242905. https://doi.org/https://doi.org/10.1371/journal.pone.0242905

Aslan, A., Silvia, S., Nugroho, B. S., Ramli, M., & Rusiadi, R. (2020). Teacher's leadership teaching strategy supporting student learning during the covid-19 disruption. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, *5*(3), 321-333. https://doi.org/https://doi.org/10.31538/ndh.v5i3.984

Azhari, B., & Fajri, I. (2021). Distance learning during the COVID-19 pandemic: School closure in Indonesia. *International Journal of Mathematical Education in Science and Technology*, 1-21. https://doi.org/https://doi.org/10.1080/0020739X.2021.1875072

Azlan, C. A., Wong, J. H. D., Tan, L. K., Huri, M. S. N. A., Ung, N. M., Pallath, V., Tan, C. P. L., Yeong, C. H., & Ng, K. H. (2020). Teaching and learning of postgraduate medical physics using Internet-based e-learning during the COVID-19 pandemic–A case study from Malaysia. *Physica Medica*, *80*, 10-16. https://doi.org/https://doi.org/10.1016/j.ejmp.2020.10.002

Azman, A., Singh, P. S. J., Parker, J., & Ashencaen Crabtree, S. (2020). Addressing competency requirements of social work students during the COVID-19 pandemic in Malaysia. *Social Work Education*, *39*(8), 1058-1065. https://doi.org/https://doi.org/10.1080/02615479.2020.1815692

Babintsev, V., Goncharuk, Y., Goncharuk, S., & Komarova, I. (2021). Academic physical education system: questionnaire survey to rate student satisfaction. *Theory and Practice of Physical Culture*(3), 20-22. https://cyberleninka.ru/article/n/academic-physical-education-system-questionnaire-survey-to-rate-student-satisfaction

Başal, A., Toraman, M., & Celen, K. M. (2021). ONCOLL: A quasi-experimental study on the effect of a web-based platform on teaching collocations. *Eurasian Journal of Applied Linguistics*, *7*(1), 68-84. https://ejal.info/wp-content/uploads/2021/06/10.32601-ejal.911181-1690495.pdf

Bubb, S., & Jones, M.-A. (2020). Learning from the COVID-19 home-schooling experience: Listening to pupils, parents/carers and teachers. *Improving schools*, *23*(3), 209-222. https://doi.org/https://doi.org/10.1177%2F1365480220958797

Buske, R. (2018). The principal as a key actor in promoting teachers' innovativeness–analyzing the innovativeness of teaching staff with variance-based partial least square modeling. *School Effectiveness and School Improvement*, *29*(2), 262-284. https://doi.org/https://doi.org/10.1080/09243453.2018.1427606

Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: a literature review of online teaching and learning practices. *European Journal of Teacher Education*, *43*(4), 466-487. https://doi.org/https://doi.org/10.1080/02619768.2020.1821184

Chang, T.-Y., Hong, G., Paganelli, C., Phantumvanit, P., Chang, W.-J., Shieh, Y.-S., & Hsu, M.-L. (2021). Innovation of dental education during COVID-19 pandemic. *Journal of Dental Sciences*, *16*(1), 15-20. https://doi.org/https://doi.org/10.1016/j.jds.2020.07.011

Choi, J.-J., Robb, C. A., Mifli, M., & Zainuddin, Z. (2021). University students' perception to online class delivery methods during the COVID-19 pandemic: A focus on hospitality education in Korea and Malaysia. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *29*, 100336. https://doi.org/https://doi.org/10.1016/j.jhlste.2021.100336

Clark, A. E., Nong, H., Zhu, H., & Zhu, R. (2021). Compensating for academic loss: Online learning and student performance during the COVID-19 pandemic. *China Economic Review*, *68*, 101629. https://doi.org/https://doi.org/10.1016/j.chieco.2021.101629

d'Orville, H. (2020). COVID-19 causes unprecedented educational disruption: Is there a road towards a new normal? *Prospects*, *49*(1), 11-15. https://doi.org/https://doi.org/10.1007/s11125-020-09475-0

Debbarma, I., & Durai, T. (2021). Educational disruption: Impact of COVID-19 on students from the Northeast states of India. *Children and youth services review*, *120*, 105769. https://doi.org/https://doi.org/10.1016/j.childyouth.2020.105769

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems*, *49*(1), 5-22. https://doi.org/https://doi.org/10.1177%2F0047239520934018

Dias, M. J., Almodóvar, M., Atiles, J. T., Vargas, A. C., & Zúñiga León, I. M. (2020). Rising to the Challenge: Innovative early childhood teachers adapt to the COVID-19 era. *Childhood Education*, *96*(6), 38-45. https://doi.org/https://doi.org/10.1080/00094056.2020.1846385

El Masri, A., & Sabzalieva, E. (2020). Dealing with disruption, rethinking recovery: Policy responses to the COVID-19 pandemic in higher education. *Policy Design and Practice*, *3*(3), 312-333. https://doi.org/https://doi.org/10.1080/25741292.2020.1813359

Ellis, V., Steadman, S., & Mao, Q. (2020). 'Come to a screeching halt': Can change in teacher education during the COVID-19 pandemic be seen as innovation? *European Journal of Teacher Education*, *43*(4), 559-572. https://doi.org/https://doi.org/10.1080/02619768.2020.1821186

García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, *12*, 616059. https://doi.org/https://doi.org/10.3389/fpsyg.2021.616059

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Springer Nature. https://library.oapen.org/handle/20.500.12657/51463

HALEK, D. H., & UTOMO, D. H. (2021). Examination Improving Character towards Environment Care Through Their Creativity and Innovation at School (A Case Study at the Senior High School 3 Ternate City). *Eurasian Journal of Educational Research*(96), 82-101. https://ejer.info/index.php/journal/article/view/543/49

Hall, A. K., Nousiainen, M. T., Campisi, P., Dagnone, J. D., Frank, J. R., Kroeker, K. I., Brzezina, S., Purdy, E., & Oswald, A. (2020). Training disrupted: Practical tips for supporting competency-based medical education during the COVID-19 pandemic. *Medical teacher*, *42*(7), 756-761. https://doi.org/https://doi.org/10.1080/0142159X.2020.1766669

Hamel, T. (2021). La technologie et le 'style de guerre américain. *Res Militaris*, *11*(1), 1-32. https://resmilitaris.net/index.php/2021/01/01/id1032512/

Harris, A., & Jones, M. (2020). COVID 19 – school leadership in disruptive times. *School Leadership & Management*, *40*(4), 243-247. https://doi.org/https://doi.org/10.1080/13632434.2020.1811479

Jasmis, J., Aziz, A. A., Jono, M. N. H. H., Zamzuri, Z. F., & Elias, S. J. (2021). An analysis model for an integrated student activities management system for higher education during rmo/cmco/pasca covid-19 period in Malaysia. *Procedia Computer Science*, *179*, 798-803. https://doi.org/https://doi.org/10.1016/j.procs.2021.01.067

Kaden, U. (2020). COVID-19 school closure-related changes to the professional life of a K–12 teacher. *Education Sciences*, *10*(6), 165. https://doi.org/https://doi.org/10.3390/educsci10060165

Khoma, N., & Vdovychyn, I. (2021). Universal basic income as a form of social contract: assessment of the prospects of institutionalisation. *socialspacejournal.eu*, *21*(1), 97-115. https://socialspacejournal.eu/wp-content/uploads/2021/12/Social-Space-Journal-1202121.pdf

Kose, N., Kayapinar, U., & Erkirc, S. (2021). The Effect of Tablet Use on EFL Reading Achievement. *Eurasian Journal of Applied Linguistics*, *7*(2), 58-72. https://ejal.info/menuscript/index.php/ejal/article/view/86/8

Košir, K., Dugonik, Š., Huskić, A., Gračner, J., Kokol, Z., & Krajnc, Ž. (2020). Predictors of perceived teachers' and school counsellors' work stress in the transition period of online education in schools during the COVID-19 pandemic. *Educational Studies*, *7*, 1-5. https://doi.org/https://doi.org/10.1080/03055698.2020.1833840

Lagat, K. T. (2020). Education amidst COVID-19 disruption: Perceived difficulty in implementing flexible learning strategies of teacher education faculty members in a state university. *Philippine Social Science Journal*, *3*(3), 142-150. https://doi.org/https://doi.org/10.52006/main.v3i3.264

Loganathan, T., Chan, Z. X., Hassan, F., Kunpeuk, W., Suphanchaimat, R., Yi, H., & Majid, H. A. (2021). Education for non-citizen children in Malaysia during the COVID-19 pandemic: A qualitative study. *PloS one*, *16*(12), e0259546. https://doi.org/https://doi.org/10.1371/journal.pone.0259546

Ma, G., Black, K., Blenkinsopp, J., Charlton, H., Hookham, C., Pok, W. F., Sia, B. C., & Alkarabsheh, O. H. M. (2021). Higher education under threat: China, Malaysia, and the UK respond to the COVID-19 pandemic. *Compare: A Journal of Comparative and International Education*, 1-17. https://doi.org/https://doi.org/10.1080/03057925.2021.1879479

Mahmood, S. (2021). Instructional strategies for online teaching in COVID-19 pandemic. *Human behavior and emerging technologies*, *3*(1), 199-203. https://doi.org/https://doi.org/10.1002/hbe2.218

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, *1*, 100012. https://doi.org/https://doi.org/10.1016/j.ijedro.2020.100012

Mohamad Nasri, N., Husnin, H., Mahmud, S. N. D., & Halim, L. (2020). Mitigating the COVID-19 pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, *46*(4), 546-553. https://doi.org/https://doi.org/10.1080/02607476.2020.1802582

Nambiar, D. (2020). The impact of online learning during COVID-19: students' and teachers' perspective. *The International Journal of Indian Psychology*, *8*(2), 783-793. https://www.academia.edu/download/64147377/18.01.094.20200802.pdf

Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., Green, R. A., Hulme, A. K., Johnson, I. P., & Meyer, A. J. (2020). Forced disruption of anatomy education in Australia and New Zealand: An acute response to the Covid-19 pandemic. *Anatomical sciences education*, *13*(3), 284-300. https://doi.org/https://doi.org/10.1002/ase.1968

Pichardo, J. I., López-Medina, E. F., Mancha-Cáceres, O., González-Enríquez, I., Hernández-Melián, A., Blázquez-Rodríguez, M., Jiménez, V., Logares, M., Carabantes-Alarcon, D., & Ramos-Toro, M. (2021). Students and Teachers Using Mentimeter: Technological Innovation to Face the Challenges of the COVID-19 Pandemic and Post-Pandemic in Higher Education. *Education Sciences*, *11*(11), 667. https://doi.org/https://doi.org/10.3390/educsci11110667

Pietsch, M., Tulowitzki, P., & Koch, T. (2019). On the differential and shared effects of leadership for learning on teachers' organizational commitment and job satisfaction: A multilevel perspective. *Educational Administration Quarterly*, *55*(5), 705-741. https://doi.org/https://doi.org/10.1177%2F0013161X18806346

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital science and education*, *2*(3), 923-945. https://doi.org/https://doi.org/10.1007/s42438-020-00155-y

Rodrigues, M., Franco, M., & Silva, R. (2020). COVID-19 and disruption in management and education academics: Bibliometric mapping and analysis. *Sustainability*, *12*(18), 7362. https://doi.org/https://doi.org/10.3390/su12187362

Shrestha, S., Haque, S., Dawadi, S., & Giri, R. A. (2021). Preparations for and practices of online education during the Covid-19 pandemic: A study of Bangladesh and Nepal. *Education and information technologies*, 1-23. https://doi.org/https://doi.org/10.1007/s10639-021-10659-0

Tejedor, S., Cervi, L., Pérez-Escoda, A., Tusa, F., & Parola, A. (2021). Higher education response in the time of coronavirus: perceptions of teachers and students, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 43. https://doi.org/https://doi.org/10.3390/joitmc7010043

Triviño-Cabrera, L., Chaves-Guerrero, E. I., & Alejo-Lozano, L. (2021). The figure of the teacher-prosumer for the development of an innovative, sustainable, and committed education in times of COVID-19. *Sustainability*, *13*(3), 1128. https://doi.org/https://doi.org/10.3390/su13031128

Watermeyer, R., Crick, T., Knight, C., & Goodall, J. (2021). COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *Higher Education*, *81*(3), 623-641. https://doi.org/https://doi.org/10.1007/s10734-020-00561-y

Wijaya, E. S. A., & Sumiati, A. (2021). Teacher's Competences in Technology-Based Education in Indonesia: The Case of a Vocational Accounting Teaching School. *Educational Sciences: Theory & Practice*, *21*(2), 145-155. https://jestp.com/index.php/estp/article/view/1436/799

Wong, L. P., & Alias, H. (2021). Temporal changes in psychobehavioural responses during the early phase of the COVID-19 pandemic in Malaysia. *Journal of behavioral medicine*, *44*(1), 18-28. https://doi.org/https://doi.org/10.1007/s10865-020-00172-z

Zhou, L., Wu, S., Zhou, M., & Li, F. (2020). 'School's out, but class' on', the largest online education in the world today: Taking China's practical exploration during The COVID-19 epidemic prevention and control as an example. *Best evid chin edu*, *4*(2), 501-519. https://doi.org/https://dx.doi.org/10.2139/ssrn.3555520

Zhu, X., & Liu, J. (2020). Education in and after Covid-19: Immediate responses and long-term visions. *Postdigital Science and Education*, *2*(3), 695-699. https://doi.org/https://doi.org/10.1007/s42438-020-00126-3