The Role of Crisis Management Strategies in the Continuity of School Education in Malaysia

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ABSTRACT:
The issue of disruption and cessation of educational services during crises is one of the issues that receives great attention from governments and educational institutions. Therefore, Malaysia has taken several strategies to ensure the continued provision of school education services during the Covid-19 crisis. The problem of the study appears in evaluating and testing the role of these strategies in ensuring the continued provision of education services to the school sector in order to identify successful strategies. The main research objective was to test the effectiveness of the strategies taken by the Malaysian government to manage the crisis during the Covid-19 period and their role in the continuity of education in Malaysian public schools. The quantitative approach was employed in this research to test the role of crisis management strategies in the school education sector approved by the Ministry of Education in Malaysia in educational continuity. The questionnaire was used as a data collection tool. Data were collected from principals and administrative staff in government schools in the state of Kuala Lumpur, Malaysia, and the study sample numbered 186 participants. The data was analysed using the Statistical Package for the Social Sciences (SPSS) to test the research hypotheses using multiple regression analysis. The study found that there is a positive relationship between crisis management strategies in the school education sector approved by the Ministry of Education in Malaysia and the continuity of education. The crisis management strategies (such as the pedagogy flexibility strategy, the synchronous and asynchronous learning strategy, the media engagement strategy, and the online teaching support strategy) have a positive impact on the continuity of school education in Malaysia, which indicates the effectiveness of these strategies in managing the crisis and their role in ensuring the continued provision of Education services, taking into account that some of these strategies were more effective compared to others from the point of view of principals and administrative staff in these schools. The current study makes an important contribution on the cognitive and applied levels. At the cognitive level, the study contributes to enriching scientific research, especially with regard to studies specialized in crisis management in educational institutions. At the applied level, the study contributes to evaluating the strategies implemented by the Malaysian Ministry of Education during the Covid-19 crisis in the education system and testing their effectiveness compared to each other, which allows managers and officials in the school education sector in Malaysia to strengthen the strategies that have proven effective.

1. Introduction

The issue of crises facing the education sector in the world is one of the issues that is constantly highlighted due to the multiple types of crises, including natural disasters, epidemics, and wars, and their recurrence from time to time. The global education sector has been greatly affected by the outbreak of the Covid-19 virus. On March 11, 2020, the World Health Organization declared the virus a global pandemic, prompting immediate social distancing measures and ensuring personal hygiene to limit its spread (World Health Organization, 2021). In response to this challenge, most educational institutions around the world have suspended classes in schools with the aim of breaking the chain of spread of the virus. This measure greatly affected approximately 1.58 billion students across the world, from pre-school to higher education in about 200 countries, and thus many efforts have emerged to mitigate the impact of this cessation of classes, and among these efforts, online learning has emerged as an alternative in China, Italy, France, Germany, and Saudi Arabia (Azzi-Huck & Shmis, 2020).

At the local level in Malaysia, the Covid outbreak has had a significant impact on the continuity of education delivery in public schools, prompting the authorities to take national measures to confront this crisis. On 18 March 2020, the Malaysian government issued "Movement Control Orders" which resulted in the closure of all educational institutions as a preventive measure to contain the spread of the disease, and accordingly, the traditional educational approach was completely converted to online learning (Dhawan, 2020). This rapid shift to distance learning came within a few days of the World Health Organization declaring the severity of the disease, with educational institutions closed to protect students and teachers (Dhawan, 2020). The Malaysian government embraced digital transformation in the education sector prior to the Covid-19 crisis. The Malaysian Ministry of Education (MOE) released the ICT Transformation Plan 2019-2023, which was launched to support Malaysia's digital education agenda (Selvaratnam, V, 2022). Managers are required to train themselves to master digital technology skills, including possessing digital-focused leadership characteristics. Teachers are also encouraged to master ICT and digital technology competencies so that they do not face difficulties in implementing these changes. Therefore, to achieve transformation in education, school principals and teachers must use these skills to improve the academic performance of students using digital technology methods. This plan helped the Malaysian government to develop various strategies to address the Covid-19 crisis and close schools during the crisis (Yaakob, & Ibrahim, 2019). In this study, the researcher will discuss and evaluate effective strategies for crisis management in its various dimensions and stages in educational institutions in Malaysian government secondary schools in the state of Kuala Lumpur from the point of view of administrative staff.

The study Problem

In 2020, the Malaysian Ministry of Education adopted preventive measures to ensure health quality in the school sector, including adopting strategies that combine ensuring the safety of students and those in charge of the school sector with ensuring the continuity of school education. These strategies faced many obstacles related to virtual learning from home, including the use of technological equipment, group-based projects, the ability to use the Internet, and assessment methods. The Malaysian government faced four main challenges in order to ensure the continued provision of educational services to school students in Malaysia, and in each challenge, it adopted a strategy to overcome them. These challenges are (Izhar N. A et al., 2021):

1 The first challenge facing officials in the school education sector included the varying conditions of schools in Malaysia depending on various factors. To overcome this problem, the Malaysian government adopted a strategy of flexibility in teaching methods.

2 The second challenge facing the continued provision of educational services in the school sector is the method of providing education. Accordingly, the government in Malaysia has adopted a strategy of synchronous and asynchronous learning to provide educational services.

3 The third challenge facing officials in the Malaysian higher education sector is the presence of a group of students who do not have access to the Internet to benefit from e-learning. To confront this challenge, the government adopted a media engagement strategy.

4 Finally, the fourth challenge relates to the presence of groups that have unstable and weak access to the Internet. To overcome this challenge, a strategy to support online teaching was adopted.

Therefore, the main research problem was identified in evaluating and testing the role of these strategies (pedagogical flexibility strategy, synchronous and asynchronous education strategy, media involvement strategy, online teaching support strategy) in ensuring the continued provision of education services to the school sector. In order to identify successful strategies to be adopted in the future if other crises arise in the future.

Study questions

Based on the study problem, and specifically, the study problem is summed up in answering the following questions:

1. What is the impact of implementing the pedagogy resilience strategy in Malaysian public schools in Kuala Lumpur state on the continuity of education during the Covid-19 crisis?

2. What is the impact of implementing the synchronous and asynchronous learning strategy in Malaysian public schools in the state of Kuala Lumpur on the continuity of education during the Covid-19 crisis?

3. What is the impact of implementing the media engagement strategy in Malaysian public schools in Kuala Lumpur state on the continuity of education during the Covid-19 crisis?

4. What is the impact of implementing the strategy to support online teaching in Malaysian public schools in Kuala Lumpur state on the continuity of education during the Covid-19 crisis?

The approved theory

Many theories and concepts related to the subject of the current study were reviewed for their possible application to crisis management in the school education sector. There are many theories related to crisis management, but very few of them address crisis situations that arise in educational institutions, especially the awareness of the leadership of these

institutions of their ability to manage policies that provide an adequate response to crisis events. The initial list of applicable theories and concepts included the following theories: continuity theory, elasticity theory, and Albaslan and Mitroff theory. The theories were evaluated on the basis of specific criteria, and used Mitroff and Albaslan's (2003) theoretical framework for crises, continuity theory, and resilience theory to fit the problem of the current study, which is the ability of educational institutions to continue providing services during crises, as well as the flexibility that these institutions must have. To face new and unknown situations that require flexibility in dealing with them.

Previous studies

There is a noticeable increase in studies addressing crisis management during the Covid-19 period, especially in the education sector. In the current study, we will address studies that directly examined the strategies taken to confront the Covid-19 crisis in the education sector.

First: Flexibility in Pedagogies Strategy

The strategy of flexibility of pedagogy, according to the Malaysian Ministry of Education, is defined as the powers granted by the Ministry to government schools to practice the educational process smoothly and flexibly, depending on the special circumstances of each school. This mechanism includes: flexibility in determining the appropriate schedule for classes, flexibility in the mechanism for providing virtual classes over the Internet, flexibility In verifying students' tasks and assignments, and flexibility in the way students are evaluated, it also includes flexibility in providing virtual lessons from home, and flexibility in the factors that affect giving virtual lessons. There are a number of studies that addressed these mechanisms to ensure teaching flexibility, including the study (Boufalta and Touidjeni, 2022), which showed that distance education is a major challenge for some universities, and explained the difficulties that students face with this type of education, and came up with the following suggestions: Organizing school days To clarify the distance learning system, improve the technological infrastructure, and train faculty members to deal with it. A study (Hamzah et al., 2021), which revealed the Malaysian Ministry of Education's initiative to develop students' skills in using digital technology in education, pointed to the positive relationship between school leadership and technology teaching, with a focus on digitalization as a strength for improving academic performance. Al-Maliki's (2021) study in Jeddah showed the mediation of applying technological leadership in secondary schools and recommended building a leadership vision and providing motivation for the use of technology and innovation in education. The study by Al-Arifan (2021)

and the study by Nasr and Jawtan (2022) recommend training school principals on crisis management strategies and developing their strengths to improve response and provide support to teachers and students during educational crises. On the other hand, a study by Mahmoud and Enas (2022) suggests developing school leadership practices using technology in accordance with the standards of the International Association for Technology in Education, with a focus on training leaders and providing the necessary support to improve educational performance. While Abdel Dayem Zaki's study (2021) indicates the need to strengthen the role of kindergarten teachers in dealing with crises and providing the necessary resources and support to manage educational crises in this educational environment. Most previous studies indicate the importance of flexibility in teaching methods and diverse methods to ensure the continuity and effectiveness of education during crises. Based on the above, the first hypothesis can be derived as follows:

The first hypothesis: There is a statistically significant impact of implementing the pedagogy flexibility strategy in Malaysian public schools in the state of Kuala Lumpur on the continuity of education during the Covid-19 crisis.

Second: Synchronous and Asynchronous Learning Strategy

The strategy of synchronous and asynchronous learning is defined according to the Malaysian Ministry of Education as the powers granted by the Ministry to schools to practice the educational process through two main means: synchronous learning and asynchronous learning. Previous studies show different approaches to education that countries are adopting during the COVID-19 crisis. Among these studies is the study (Ahmed et al., 2020), whose results revealed a relationship between the use of Facebook, social capital, and academic performance, and suggested benefiting from Facebook in developing social capital and improving academic performance, especially for university students with social skills and self-esteem. The study by Abu Alwan Bashir (2022) reviewed e-learning strategies in Sudan during global pandemics, providing recommendations to enhance e-learning, including the use of various electronic tools and providing the necessary training for teachers and students. As for the study (Basilaia, Kvavadze, 2020), it reviewed the experience of switching to distance education in Georgia during the Covid-19 pandemic, and showed the success of this transition in achieving learning despite the challenges. And a study (Yulia, 2020) that explained the impact of the Covid-19 pandemic on education in Indonesia, focusing on the

importance of using various strategies to improve the online education experience.

There are also recent studies that addressed distance education methods as a new method of teaching during the Covid-19 crisis, including the study (Gurung, 2021), which presented the challenges that teachers faced while teaching online during the Covid-19 pandemic, as they used platforms such as Zoom, Google Meet, and WhatsApp and Google Classroom. Teachers faced challenges in communicating with students in remote areas and teaching numerical subjects, but nevertheless, most participants were satisfied with online teaching and were willing to overcome challenges in order to make learning possible for students. The second study (Bebbington, W, 2021) noted that the Covid-19 pandemic in 2020 represents an important opportunity for transformation in universities, with strategies for university education focusing on blended delivery of teaching and investment in developing staff skills in online teaching. The third study (Sufian et al., 2020) addressed the social and educational impacts of the COVID-19 pandemic on education, focusing on utilizing technology and teamwork in facing challenges. As for the fourth study conducted on a group of Arab countries (Al Lily et al, 2020), it addressed the application of distance education as a response to the Covid-19 pandemic in Arab countries, highlighting the emergence of the concept of "distance society" as a result of this experience. A study (Sahu et al., 2020) focused on the importance of electronic communication for students and the need to support them during the Covid-19 pandemic, emphasizing the role of technology in facilitating education and making it more effective. Finally, the study conducted (Izhar et al., 2021) discussed the strategies of the Malaysian Ministry of Education for implementing online education during the COVID-19 pandemic, stressing the importance of providing the necessary support to teachers in providing lessons online and overcoming the challenges facing the digital education process, as well as The study showed an analysis of teachers' challenges in preparing and designing online lessons, suggesting further research to improve digital education processes. Therefore, based on the results of previous studies that showed the adoption of different methods of education, whether synchronously or asynchronously, with the aim of ensuring the continued provision of education services. Accordingly, the second hypothesis can be derived as follows:

The second hypothesis: There is a statistically significant impact of implementing the synchronous and asynchronous learning strategy in Malaysian public schools in the state of Kuala Lumpur on the continuity of education during the Covid-19 crisis.

Third: Mass Media Engagement Strategy

Media engagement strategy is defined as the strategy used to deliver lessons to students through media such as television to which Malaysians have 97.6% access (Izhar et al., 2021), and who may not have access to technological tools. Previous studies have shown that there is an involvement of media outlets such as radio and television in providing educational services during crises. Among these studies is the study (Suyo-Vega J. A. et al., 2022), which discussed how to adopt educational policies to confront the emerging coronavirus pandemic (Covid-19). In Latin America, it showed that virtual conditions provided crucial opportunities to ensure the continuity of basic educational services for citizens. Its findings showed that the priority was to ensure the continuity of educational services through the use of mass communication resources such as radio, television and digital platforms, highlighting the challenges facing Internet access in homes and the resulting inequalities. A study (Madhubhashini, G.T., 2021) that emphasized the role of television as an educational medium during the COVID-19 pandemic, examining the opportunities and challenges of using it as an alternative educational tool. The results showed that television was an effective medium for learning among school students in rural areas during the pandemic, as it had a positive impact due to weak internet coverage in those areas. The use of television as well as radio and online platforms was another option to enable rural students with formal learning. The study (Tadesse, S., & Muluye, W., 2020) indicates the need to design strategies to expand the scope of educational technology and improve technological infrastructures for education, including creating online educational resources and providing mobile learning and education via radio and television. A study (Jimola, F. E., 2021., & Ofodu, G. O) found that learning channels used during the pandemic mainly included television stations, air schools via radio programmes, virtual learning and private teaching. As well as the study (Béché, E., 2020), which provided a look at Cameroonian responses to the Covid-19 pandemic in the field of education, noting the challenges faced by educational authorities in ensuring the continuity of formal education and reducing educational inequality, and reviewing institutional, societal and individual initiatives to achieve this. Based on the previous discussion, it can be said that media such as radio and television have contributed significantly to the continuity of providing educational services during crises. Accordingly, the third hypothesis can be derived.

Hypothesis Three: There is a statistically significant impact of adopting a media engagement strategy in Malaysian public schools in the state of Kuala Lumpur

on the continuity of education during the Covid-19 crisis.

Fourth: Online Teaching Support Strategy

The online teaching support strategy is defined as the plans developed by the Malaysian government to secure a stable and fast connection to the Internet to reach a suitable bandwidth to manage the educational process in Malaysia smoothly with the participation of the public and private sectors. At the global level, many studies have shown the important role of governments in supporting the distance education process due to its need for technical equipment. For example, Hanafi et al., 2021 studied in Indonesia how the COVID-19 pandemic affected Islamic boarding schools, noting that educational leadership should focus on training programs to develop blended learning for teachers, and provide technical facilities by the government to implement Effective blended learning. Also in Indonesia, a study (Hidayat et al., 2021) addressed crisis management in the education sector during the COVID-19 pandemic, noting weaknesses in online learning, such as technical weakness and difficulty in communication, and calling for improving technological infrastructure and providing support to provide connectivity. Stable on the Internet. In the Philippines, a study (Cahapay, M. B., 2021) showed that the continuity of education after the current crisis poses a major national challenge, given poor access to technology and electricity, requiring support to improve internet connectivity. In Egypt, a study (Al-Shamayla, 2021) showed that the application of distance education in secondary education schools faces obstacles such as the lack of direct interaction between the teacher and the student and high Internet costs. In China, the OECD (2020) pointed to opportunities for developing alternative online education, especially in light of the spread of Covid-19. Finally, there is a study (Wen, Kim Hua, 2020) that pointed out the importance of access to online infrastructure and resources to improve teachers' intentions, and called on the government to provide the necessary support to ensure stable internet connection in every school.

At the local level in Malaysia, a study (Harun et al., 2021) demonstrated the impacts of the COVID-19 pandemic on the socio-economic and well-being of Malaysians, and focused on its impacts on university students, especially in relation to infrastructure and internet to support online learning and teaching. The study revealed important technical issues, recommended that providing insights to relevant ministries could have a significant impact in developing appropriate responses, and indicated the need to improve Internet coverage and facilities. For its part, the study (Sueraya et al., 2021) confirmed that the biggest challenge faced by most Malaysian teachers during the Covid-19 pandemic is the transformation of the education system in addition to the challenges of access to the Internet and appropriate tools by students. A study (Nordin et al., 2021) indicated that higher education institutions in Malaysia were directly and indirectly affected by the Covid-19 pandemic, which led to the replacement of traditional learning with online learning to ensure continuity of education. Therefore, the new situation required intervention from the government and the private sector to contribute to supporting the online teaching process by providing a stable connection. Therefore, the fourth hypothesis in the study can currently be derived as follows:

Fourth hypothesis: There is a statistically significant impact of implementing the strategy to support online teaching in Malaysian public schools in the state of Kuala Lumpur on the continuity of education during the Covid-19 crisis.

Knowledge gap and scientific contribution

Based on a review of previous studies, it was found that there are many gaps that previous studies fell short of. Below we review these knowledge gaps. There is no quantitative study that tests the impact of crisis management strategies (pedagogical flexibility strategy, synchronous and asynchronous learning strategy, media involvement strategy, online teaching support strategy) on educational continuity. Therefore, this study is considered a serious contribution to previous studies in the field of crisis management in institutions. Malaysian education at the secondary level.

In the context of the knowledge gap in terms of the sector in which the current study is applied, the current study is also considered a knowledge contribution to the field of managing secondary education institutions during crises, especially in Malaysia, which applied four strategies for managing secondary education institutions during the Covid-19 crisis, where no study has previously done so. It tested the impact of crisis management strategies adopted in Malaysia on the continuity of educational service delivery during the Covid-19 crisis.

Conceptual framework

The conceptual framework of the current study was built based on previous studies, where the measures of all variables were adopted based on previous studies, namely; The study (Izhar, N.A et.al, 2021), which referred to the strategies adopted by the Malaysian government to manage the crisis during Covid-19 to ensure the continued provision of educational services, as well as the study (Rayburn, S.W et.al, 2021), which investigated the continuity of education during crises. . The research questionnaire measures two types of

variables, which are the independent variables (strategy for flexibility of pedagogy, strategy for synchronous and asynchronous learning, strategy for engaging media, strategy for supporting online teaching), and the dependent variable, which is (continuity of education). The following figure shows the proposed study model
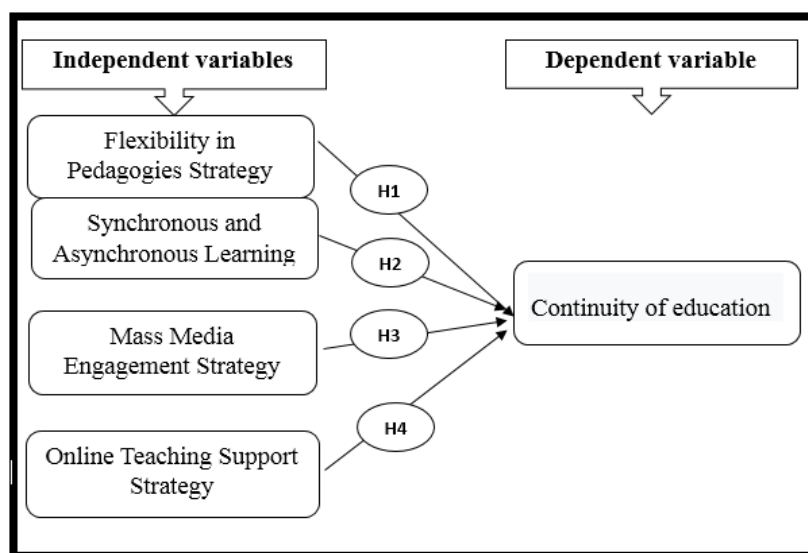

Illustration 1: The proposed study models

2. Study Methodology

Based on the research problem and research questions, which were quantitative in nature, the current study adopted the positivism research philosophy to suit the research problem and questions. I also followed the deductive approach to reach knowledge. The current study also followed the quantitative method to collect data, answer the research questions, and test its hypotheses. Government secondary schools in the state of Kuala Lumpur in Malaysia are considered the target population for the study. There are 113 schools in the state of Kuala Lumpur, and the principals and administrative staff in these schools constitute the target sample. Purposive sampling was adopted in the current study as a type of non-probability sampling. Sample size was determined according to Hair et al. (20164), where there must be at least 5 observations for each parameter. Likewise, 36 items were used in the survey questionnaire to test the research model, then the total sample size of the sample size n equals 5*36, and the result is 180 samples. 186 questionnaires were collected, which is a number that meets the required sample size.

The current study relied on the questionnaire as a data collection tool and was built on previous studies, as the study variables were derived from a study (Izhar, N.A et.al, 2021) and a study (Rayburn, S.W et.al, 2021). The research variables included in the model are: Pedagogy flexibility strategy, synchronous and asynchronous learning strategy, media engagement strategy, online teaching support strategy, and educational continuity.

The content validity of the study was tested by a group of academics in the educational field, as well as some principals in Malaysian secondary schools. A pilot test of the study tool was conducted in order to evaluate its reliability. The questionnaire was distributed to 54 school sector workers in the state of Kuala Lumpur, and the Cronbach alpha coefficient for reliability exceeded 0.7 to collect the study variables. Data were analysed using SPSS. Some data analysis techniques were adopted, such as descriptive statistics for demographic variables, Cronbach's alpha analysis for reliability, and multiple regression analysis to test hypotheses.

3. Study Results

A study focused on evaluating crisis management strategies in basic education institutions in Malaysia during the Covid-19 pandemic, which were adopted by the Ministry of Education with the aim of ensuring continuity in the provision of educational services. The study aimed to understand the role that each strategy plays in maintaining the continuity of education in public schools in Kuala Lumpur. The study model was built on previous research, and based on the relationship between four main variables: the crisis management strategies adopted by the Malaysian government in the basic education sector, namely the teaching flexibility strategy, the synchronous and asynchronous learning strategy, the media engagement strategy, and the online education support strategy. The effect of these strategies on educational continuity was tested as a dependent variable in the study. Multiple regression analysis was

used to test the effect of the independent variables on the dependent variable at a significance level of 0.05. The decision rule here is that if the p-value is greater than 0.05, we accept the null hypothesis and say that there is no statistically significant effect of the independent variable on the dependent variable. If the P-value is less than 0.05, we reject the null or null hypothesis and accept the alternative hypothesis and say that there is a statistically significant effect of the independent variable on the dependent variable.

The correlation coefficient R indicates the relationship between the independent variables of crisis management strategies in secondary education in Malaysia (pedagogy flexibility strategy, synchronous and asynchronous learning strategy, media engagement strategy, online teaching support strategy) with the dependent variable represented by (education continuity) . Since the correlation coefficient is equal to 0.800, as shown in the

table below, it can be said that there is a very strong correlation between the independent variables as a whole on the one hand and the dependent variable on the other hand, and it can also be said that the direction of this relationship is positive or positive, given that the sign of the correlation coefficient is positive.

On the other hand, the coefficient of determination R^2 indicates the ability of the independent variables to explain or predict the variance in the dependent variable, and considering that the value of the coefficient of determination here is equal to 0.640, this means that the four independent variables adopted in the initial study model explain 64% of the variance in the dependent variable (Continuity of education), and this percentage indicates that important independent variables were included in the study model that were able to explain the variance in the dependent variable by more than 64%.

Table 1: Summary of the regression analysis model between crisis management strategies on educational continuity

Standard error	Modified coefficient of determination	Coefficient of determination R^2	Correlation coefficient R
0.400	0.632	0.640	0.800

The ANOVA table is considered one of the important tables in regression analysis using statistical analysis software. Through the probability value, the study model as a whole can be judged. If the P-value is less than 0.05, it can be said that all the independent variables, on the one hand, have a statistically significant effect on the variable. Dependent on the other hand, but this does not mean that every independent variable has an impact on the dependent variables, but it can be said that there is at least one independent variable that has an impact on the dependent variable. From the

table below, we can conclude that the probability value P-value is equal to 0.00, which is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis and say that there is a statistically significant effect for the four independent variables (pedagogical flexibility strategy, synchronous and asynchronous learning strategy, strategy for engaging media Media, strategy for supporting online teaching) on the dependent variable represented by (continuity of education).

Table 2: Summary of ANOVA table

Model	Sum of Square	Degree of Freedom	Mean of Square	Fisher Coefficient	P—value Significance
Multiple Regression	51.669	4	12.917	80.530	0.000

The ANOVA table is considered a comprehensive test of the significance of all independent variables on the dependent variable, but the ANOVA table is not sufficient to show the effect of the independent variables on the dependent variable, because it does not show the significant effects of each independent variable separately on the dependent variable, and therefore the

Coefficients table must be used, which can be extracted from the program SPSS to show the effect of each independent variable on the dependent variable. The table below shows the standardized and unstandardized coefficients for the independent study variables and the t-test in addition to the probability value.

Table 3: Coefficients summary table

Model	Unstandardized Coefficient		Standardized Coefficient Beta	T	P-Value
	B	St Error			
Fixed Coefficient	0.397	0.201	-	1.972	0.050
Flexibility in Pedagogies Strategy	0.235	0.063	0.237	3.713	0.000
Synchronous and Asynchronous Learning Strategy	0.359	0.067	0.357	5.382	0.000
Mass Media Engagement Strategy	0.244	0.055	0.249	4.058	0.000
Online Teaching Support Strategy	0.101	0.042	0.125	2.378	0.018

The previous table shows a test of the relationship of the independent variables with the dependent variable, as it shows the value of the coefficients of the research variables, and also shows these values in the standard case and the non-standard case. It can also be observed that the calculated T-Test value can be compared with the tabular T value to judge the four research hypotheses. The outputs of the SPSS program make it possible to test hypotheses by looking at the P-Value or Sig. The rule of judgment here is that if the P-value is less than 0.05, which is the value of the confidence level that was adopted in this study, then we can say that there is a significant effect. Statistics for the independent variable on the dependent variable, while there is no statistically significant effect if the P-value is greater than 0.05. Therefore, all hypotheses are considered met, and it can be said that the four strategies have an impact on the continuity of education in schools in Kuala Lumpur.

The Coefficients table is considered one of the important tables to test the relationship of the independent variables with the dependent variable individually, and through it a mathematical regression equation can be written. Through column B, it is possible to deduce the regression equation for the mathematical relationship between the four independent variables (crisis management strategies) on the dependent variable (continuity of education), as follows:

Table 4: Multiple regression equation for the current study

Y (continuity of education) = 0.397 + 0.235 **X1** (Teaching Flexibility Fundamentals Strategy) + 0.359 **X2 (**Synchronous and asynchronous learning strategy) + 0.224 **X3** (media engagement strategy) + 0.101 **X4** (Online teaching support strategy)

4. Discuss the Results

First: Pedagogy Flexibility Strategy: The study addresses the role of implementing the Pedagogy Flexibility Strategy in Malaysian government schools during the COVID-19 pandemic, in an attempt to understand how this strategy affects the continuity of education under the exceptional circumstances imposed by the pandemic. The results were positive, as they confirmed that the implementation of the pedagogical flexibility strategy has a tangible impact on the continuity of education in Malaysian secondary schools.

It is clear from the study that the aforementioned strategy included several aspects, including determining the appropriate timetable for classes, offering virtual classes online, evaluating students in a flexible manner, and providing the necessary supplies to implement virtual lessons. These aspects reflect the efforts of the Malaysian government to confront the challenges of the pandemic and ensure continuity of education for students. The study's findings are consistent with previous research that discussed the role of technology and digital leadership in developing education during the pandemic. A previous study by (Hamzah et al., 2021) indicated that the Malaysian Ministry of Education took initiatives to develop students' skills in using digital technology in education, and another study by Al-Maliki (2021) showed a moderate degree of application of technological leadership in secondary schools in Jeddah during the pandemic. Other research that confirms the importance of technology in facing educational challenges during the pandemic is a study by (Boufalta, and Touidjeni, 2022), which stressed the need to improve the technological infrastructure of universities to support distance education. Overall, the results indicate that technology and resilience strategies play a critical role in enabling educational continuity during difficult circumstances such as the pandemic, which reflects the importance of developing educational systems to be responsive and adaptive to future challenges.

Second: Synchronous and asynchronous learning strategy: The second research question was asked about the role of synchronous and asynchronous learning strategy in Malaysian public schools during the COVID-19 pandemic. The results show that the synchronous and asynchronous learning strategy positively affects the continuity of school education. Many steps and measures have been taken to ensure the continuity of the educational process during the COVID-19 pandemic in school education in Malaysia according to this strategy through the use of electronic platforms such as "Zoom", "Hangouts" and "Microsoft Team" to provide virtual classes simultaneously, in addition to Using social media platforms such as "WhatsApp" and "Telegram" to communicate and overcome problems of teaching and learning online. In a previous study, Abu Alwan Bashir (2022) presented strategies for digital transformation in education with the aim of ensuring the continuity of the educational process during global pandemics. This strategy was consistent with previous studies in the same context. Gurung's (2021) study showed the challenges that teachers faced in teaching online during the COVID-19 pandemic and their use of platforms such as Zoom and Google Meet to teach lessons. The study of Izhar et al. (2021) argue that the synchronous and asynchronous learning strategy enhances the continuity

of education in Malaysia by adopting synchronous and asynchronous modes of online teaching and learning, and recommends further research to improve online learning processes. Finally, the study of Basilaia and Kvavadze (2020) revealed a successful experience of transitioning to distance education in Georgia through the use of electronic platforms such as "EduPage" and "Gsuite". The study by Basilaia and Kvavadze (2020) indicated that the use of electronic platforms such as "EduPage" and "Gsuite" contributed to achieving success in the distance education process. In another study by Ahmed et al. (2020), it was found that the strength of the Facebook platform and community factors are significantly related to social capital and academic performance. This study demonstrated the possibility of using Facebook as an educational assistant during the pandemic. Overall, the importance of a synchronous and asynchronous learning strategy is evident in ensuring continuity of education in exceptional times such as the COVID-19 pandemic. This strategy provides a variety of technical tools and platforms that enable teachers and students to continue the learning process effectively, and enhances communication and student interaction with educational content. It is important to continue research studies in this field to develop and improve the use of technology in education, and to enhance the readiness of schools and teachers to effectively face future challenges.

Third: Media Engagement Strategy: The results demonstrate the impact of the media engagement strategy on the continuity of education in Malaysia during the Covid-19 pandemic. This strategy included many new plans and methods taken by the government to meet the needs of the exceptional period, including the educational television program, ETV and RTM programs, and Internet programs. Students who were not connected to the Internet were also directed to watch educational programs on television, and program schedules were tracked through the Ministry's official websites and social media. The strategy also included the Tutor TV program in cooperation with the private sector. Based on the field study, trend analysis showed high approval of these methods in Malaysian schools, indicating the effectiveness of implementing the strategy in Kuala Lumpur. By testing the impact of the strategy on continuity of education, we found that its application has a positive impact that is considered statistically significant in Malaysian schools. The study confirms the role of the strategy of involving local media in the e-learning system during the Covid-19 pandemic in Malaysia. Previous studies have also discussed this topic, such as the study by Tadesse and Muluye (2020) who called on countries to expand educational technology and create online educational resources. In addition, Madhubhashini's (2021) study confirmed

television as an effective learning medium for rural school students during the pandemic, indicating the importance of providing alternatives to formal education. On the other hand, Gerosa et al.'s (2021) study revealed that media consumption did not improve knowledge or prevent the spread of fake news beliefs during the pandemic. Finally, Van Aelst et al.'s (2021) study indicates an increase in television news use during the pandemic, but this increase was more among those who already trust traditional media.

Fourth: Online education support strategy: Based on the results, it appears that the online education support strategy has a positive impact on the continuity of education in Malaysia during the Covid-19 pandemic. This strategy included a set of plans and measures taken by the Malaysian government to meet the needs of the exceptional period, including: providing free handphones with internet for 12 months to students in need, contributions from the private sector to enhance e-learning, and providing training programs for teachers in cooperation with UNICEF. The field study indicates moderate approval of these new methods, which indicates good implementation of the strategy to support online education in Kuala Lumpur schools from the point of view of administrators. By testing the impact of this strategy on the continuity of education, it was found that there is a statistically significant positive effect in Malaysian schools, through testing the fourth sub-hypothesis. Covid-19, which forced educational institutions in Malaysia to fully adopt the electronic system. The study (Harun et al., 2021) focuses on the effects of the pandemic on university students, noting the importance of infrastructure and the Internet to support online learning and teaching. The study revealed that internet coverage and connectivity were the main issue in online education, with challenges in internet connectivity, with 49% of students reporting poor internet connections. While Al-Enezi's (2021) study pointed to factors such as the absence of the Internet and digital technology in some homes in poor countries as factors that reduce the effectiveness of distance education. In addition, Gurung's (2021) study highlights the challenges teachers faced while teaching online, especially in remote areas and teaching numerical subjects. The study (Hanafi et al., 2021) demonstrates the importance of the role of educational leadership in responding to the crisis and confirms the necessity of improving technical facilities to ensure continuity of education. The study (Al-Shamayleh, 2021) highlights the obstacles facing the implementation of the distance education system in secondary education schools, with a focus on the cost of Internet subscription as a major obstacle. The study (Hidayat et al., 2021) focuses on weaknesses in online learning, including technical and communication factors, while the study (Wen, Kim Hua,

2020) emphasizes the importance of access to online infrastructure and resources in improving teachers' intentions. Finally, the study (Sueraya et al., 2021) reviews the challenges that teachers face in teaching online, including the lack of knowledge and skills in implementing online education and the challenges of accessing the Internet and appropriate tools for students.

Cognitive contribution
This study is considered an enrichment to the scientific library, especially with regard to studies specialized in crisis management in educational institutions, given the small number of these studies, especially the quantity of them. The subject of the study is consistent with modern administrative trends, which point out the importance of school principals using crisis management strategies, especially at the present time. In addition, there is no precedent for documented global pandemics in the recent modern era that affected all aspects of life, including the educational process. Which led to the lack of previous global scientific studies documenting how to deal in all aspects of life during pandemics in general and education in particular. Finally, the current study draws attention to the necessity of introducing the concepts of blended learning into schools and universities in a serious and official manner, so that the electronic (digital) transformation during global pandemics will be smoother and easier.

Applied contribution
The current study helps shed light on effective strategies for crisis management in school education institutions in Malaysia, which helps principals and workers in this sector to enhance useful strategies, which contributes positively to enhancing the continuity of education. The results of the study also help in forming a comprehensive framework that can be relied upon in diagnosing the strengths and weaknesses of the strategies and plans adopted by the Malaysian government to ensure the continuation of school education during the Covid-19 crisis, which provides an opportunity for decision-makers in the educational field to comprehensively evaluate the four strategies taken by the Malaysian government. During the Covid-19 crisis to develop it and avoid its weaknesses.

5. Conclusion

The problem of the study focused on testing and evaluating crisis management strategies in pre-university education institutions during the Covid-19 period, which were adopted by the Ministry of Education in Malaysia to ensure the continuity of providing education services during this crisis. Therefore, the main research problem was identified in evaluating and testing the role of these strategies in

ensuring the continued provision of education services to the school sector. This is in order to identify successful strategies to be adopted in the future if other crises arise in the future. Therefore, the study aimed to identify the role of each strategy in the continuity of providing school education in public schools in Kuala Lumpur. To achieve the objectives of the study, the study model was built based on previous studies based on the relationship between four main variables in the research that represent the strategies adopted by the Malaysian government to manage the crisis in the sector. School education, which is (the strategy for flexibility of pedagogy, the strategy for synchronous and asynchronous learning, the strategy for engaging media, the strategy for supporting online teaching) and testing its impact on continuity of education as a dependent variable. In the current study, government secondary schools in the state of Kuala Lumpur in Malaysia are the target population for the study, which number 113 schools in the state of Kuala Lumpur. The study sample included 186 principals and administrative employees in these schools. Through the quantitative approach chosen in this research, the role of crisis management strategies in the pre-university education sector approved by the Ministry of Education in Malaysia was tested. The study concluded that there is an impact of crisis management strategies (pedagogical flexibility strategy, synchronous and asynchronous learning strategy, media involvement strategy, and online teaching support strategy) on the continuity of education. Which indicates the effectiveness of these strategies in managing the crisis and their role in ensuring the continued provision of educational services, taking into account that some of these strategies were more effective compared to others from the point of view of the principals and administrative staff in these targeted sample schools, and the effectiveness of these strategies was, respectively; The strategy for synchronous and asynchronous learning, the strategy for engaging media, the strategy for flexibility of teaching methods, and finally the strategy for supporting online teaching.

The study presented some recommendations, the most important of which are: Developing e-learning methods in Malaysian government schools to be a substitute for traditional education to ensure the continued provision of education services during any crisis without affecting the quality of these services. Adopting a unified synchronous educational system for all Malaysian government schools to ensure high quality in the provision of educational services, which serves as a Malaysian national project for pre-university education. Adopting a unified educational policy to make use of media in school education as much as possible for easy access by students in all Malaysian regions, especially remote ones. Providing support mechanisms for students in the school education stage to enable them to have safe and continuous access to the Internet in a way that supports the education process effectively.

References

1. Abu Alwan, Saad Mamoun Abdul Rahman; Bashir, Shahnaz Abdul Rahman Othman (2022). Strategies to activate e-learning in Sudan during global pandemics: the Corona-19 pandemic as an example. Journal of Information Studies & Technology (JIS&T), 2022(1), 7

2. Abu Karsh, Nasr Nasser; Hegazy, Gultan Hassan (2022). The degree to which school principals use crisis management strategies from the point of view of teachers in the South Nablus Directorate. Al-Quds Open University Journal for Educational and Psychological Research and Studies, 13(38).

3. Ahmed, Muhammad Idris; Mustafa, Chi Su; Abdel Rani, Nour Shozana (2020). Responding to COVID-19 through online learning: The relationship between Facebook density, community factors with social capital and academic performance. - Journal of Egyptian Archeology/Egypt 17 (3) (2020), 1-20. ISSN 1567-214X. 20 pages + 13 figures, 3 tables + 4 frames.

4. Hamad Al-Arifan, Proverbs (2021). Managing the educational crisis in the Kuwaiti Ministry of Education and Higher Education in light of the (Covid-19) pandemic from the point of view of its employees: a proposed scenario. Journal of the College of Education (Assiut), 37(3), 202-236.

5. Zaki, Ahmed Abdel Aziz and Abdel Dayem, Mohamed (2021). A proposed strategy for managing educational crises in Egyptian kindergartens (the Corona crisis as an example). Journal of Childhood and Education, 47(1), 249-302

6. Al-Shamayla, Fatima Muhammad Salama (2022). Transformational leadership at Al-Huffaz Academy in Jordan and its role in enabling teachers to manage the crisis and master distance learning skills during the Corona pandemic (Covid-19). Journal of Educational and Psychological Sciences, 6(26), 1-20

7. Al-Anazi, Call of departure; Obaid (2021). Educational leadership strategy in light of the Corona (COVID-19) pandemic in the Kingdom of Saudi Arabia. Journal of the College of Education (Assiut), 37(5), 375-396

8. Al-Maliki, Single Adel (2021). The degree of application of technological leadership in secondary schools in Jeddah in light of the Corona pandemic from the point of view of male

and female teachers. Journal of the College of Education (Assiut), 37(10), 276-320.

9. Mahmoud, Enas Ahmed Fathi (2022). A proposed list of digital leadership practices in Egyptian schools in light of the International Association for Technology in Education's standards for educational leaders. Educational Administration, 33(33), 213-331

10. Azzi-Huck, K., & Shmis, T. (2020). Managing the impact of COVID-19 on education systems around the world: How countries are preparing, coping, and planning for recovery. World Bank Blogs, 18.

11. Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. Pedagogical Research, 5.(4)

12. Béché, E. (2020). Cameroonian responses to COVID-19 in the education sector: Exposing an inadequate education system. International Review of Education, 66, 755-775.

13. Boufalta, M. S. E., & Touidjeni, Z. (2022). Difficulties in Distance Education at a University in Algeria: The Perspective of Financial Management Students. Nastava i vaspitanje, 71(1), 81-94.

14. Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. Journal of educational technology systems, 49(1), 5-22

15. Gerosa, T., Gui, M., Hargittai, E., & Nguyen, M. H. (2021). (Mis) informed during COVID-19: how education level and information sources contribute to knowledge gaps. International Journal of Communication, 15, 22.

16. Gurung, S. (2021). Challenges faced by teachers in online teaching during Covid-19 pandemic. The online journal of distance education and e-Learning, 9(1), 8-18.

17. Hamzah, N. H., Nasir, M. K. M., & Wahab, J. A. (2021). The Effects of Principals' Digital Leadership on Teachers' Digital Teaching during the COVID-19 Pandemic in Malaysia. Journal of Education and E-Learning Research, 8(2), 216-221.

18. Hanafi, Y., Taufiq, A., Saefi, M., Ikhsan, M. A., Diyana, T. N., Thoriquttyas, T., & Anam, F. K. (2021). The new identity of Indonesian Islamic boarding schools in the "new normal": the education leadership response to COVID-19. Heliyon, 7(3), e06549.

19. Harun, Z., Hamzah, F. M., Mansor, S., Mahmud, A. S., Hashim, H., Sultan, M. T. H., & Ismail, A. R. (2021). COVID-19 Effects on Students' Teaching and Learning Perspectives in Malaysian Varsities. Pertanika Journal of Social Sciences & Humanities, 29(4).

20. Hidayat, D. A. S. R. U. N., Anisti, P., & Wibawa, D. (2020). Crisis management and communication experience in education during the covid–19 pandemic in Indonesia. Journal Komunikasi: Malaysian Journal of Communication, 36(3), 67-82.

21. Izhar, N. A., Al-Dheleai, Y. M., & Ishak, N. A. (2021). Education continuation strategies during COVID-19 in Malaysia. International Journal of Academic Research in Business and Social Sciences, 11(4), 1423-1436.

22. Jimola, F. E., & Ofodu, G. O. (2021). Sustaining learning during COVID-19 seismic shift: The need to develop flexible pedagogy. Interdisciplinary Journal of Education Research, 3(1), 14-26.

23. Joseph Hair et al, A Primer on Partial Least Squares Structural Equation Modelling (Pls-Sem), 2nd Ed, sage publication, 2016.

24. Leaders in Malaysia. Int. J. Innov. Technol. Explore. Eng, 8(9), 1481-1485.

25. Madhubhashini Cahapay, M. B. (2021). Philippine basic education learning continuity plan: Creating space for Indigenous Peoples toward inclusive post-COVID-19 education. International Journal of Pedagogical Development and Lifelong Learning, 2(1).

26. Madhubhashini, G. T. (2021). The role of television as an educational medium in empowering rural students in Sri Lanka during COVID 19 pandamic.

27. Nordin, N., & Nordin, N. (2020). Impact of Pandemic COVID-19 to the Online Learning: Case of Higher Education Institution in Malaysia. Universal Journal of Educational Research.

28. Rayburn, S. W., Anderson, S., & Sierra, J. J. (2021). Future thinking continuity of learning in marketing: A student perspective on crisis management in higher education. Marketing Education Review, 31(3), 241-255.

29. Sahu, P., Mathur, A., Ganesh, A., Nair, S., Chand, P., & Murthy, P. (2020). Acceptance of e-consult for substance use disorders during the COVID 19 pandemic: a study from India. Asian journal of psychiatry, 54, 102451.

30. Selvaratnam, V. (2022). Education: The Past and the Future. In Malaysia's Leap Into the Future: The Building Blocks Towards Balanced Development (pp. 183-213). Singapore: Springer Singapore.

31. Sueraya, C. H., Khadijah Khalilah, A. R., Sabrina, C. H., Arifin, M., & Nurazzelena, A. (2021). Challenges Faced by Teachers in Online Teaching during the Pandemic. Journal of Education and Practice, 12(2), 2021.

32. Sufian, S. A., Nordin, N. A., Tauji, S. S. N. & Nasir, M. K. M. (2020). The Impact of Covid-19 on the Malaysian Education System. International Journal of Academic Research in Progressive Education & Development. 9(2), 764-774

33. Suyo-Vega, J. A., Meneses-La-Riva, M. E., Fernández-Bedoya, V. H., Alarcón-Martínez, M., Ocupa-Cabrera, H. G., Alvarado-Suyo, S. A. & Miotto, A. I. (2022, August). Educational policies in response to the pandemic caused by the COVID-19 virus in Latin America: An integrative documentary review. In Frontiers in Education (Vol. 7, p. 918220). Frontiers Media SA.

34. Tadesse, S., & Muluye, W. (2020). The Impact of COVID-19 Pandemic on Education System in Developing Countries: A Review. Open Journal of Social Sciences, 8, 159-170.

35. Van Aelst, P., Toth, F., Castro, L., Štětka, V., Vreese, C. D., Aalberg, T., ... & Theocharis, Y. (2021). Does a crisis change news habits? A comparative study of the effects of COVID-19 on news media use in 17 European countries. Digital Journalism, 9(9), 1208-1238.

36. Wen, K. Y. K., & Kim Hua, T. (2020). ESL Teachers' Intention in Adopting Online Educational Technologies during COVID-19 Pandemic. Journal of Education and E-learning Research, 7(4), 387-394.

37. World Health Organization. (2021). Infection prevention and control during health care when coronavirus disease (COVID-19) is suspected or confirmed: interim guidance, 12 July 2021 (No. WHO/2019-nCoV/IPC/2021.1). World Health Organization.

38. Yulia, H. (2020). Online learning to prevent the spread of pandemic corona virus in Indonesia. ETERNAL (English Teaching Journal), 11.(1)

39. Yusof, M. R., Yaakob, M. F. M., & Ibrahim, M. Y. (2019). Digital leadership among school