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RESEARCH ARTICLE

IMPACT OF COVID-19 INFLUENZA ON TEACHER 21ST CENTURY PEDAGOGICAL SKILLS

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Abstract

The novel coronavirus (COVID-19) outbreak is causing major disruption not only to the tourism sector and other related industries but also affecting education. Never before in history have all schools in Malaysia and the majority of countries in the world been forced to close simultaneously due to the spread of the virus. The danger of COVID-19 requires urgent action by the government to implement the Movement Control Order (MCO) to prevent infection. However, the uninvited presence of COVID-19 changed teachers' attitudes and perceptions of their teaching and shifted to the online learning system. Teachers have begun to explore various mediums of online learning as an alternative to their teaching. Teachers have voluntarily changed their teaching approach according to the 21st-century learning framework. Indirectly, it has shaped 21st-century learning. Hence, this article will discuss how this COVID-19 outbreak has implications for the best educational context, especially the 21st-century pedagogical skills among teachers. An online survey was conducted amongst 1222 primary and secondary school teachers in the Kuala Muda/Yan district of Kedah, Malaysia.

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Introduction:-

COVID-19 PANDEMIC has made a huge impact on the various sectors of education, whether it is primary, secondary, or tertiary education. It urged the Malaysian government to implement the Movement Control Order (MCO) which was extended almost 3 months until Jun 09, 2020. Among its implementations are the closure of all kindergartens, government and private schools including daily schools, full boarding schools, international schools, and tahfiz (Islamic based education) centres. The shutdown includes primary, secondary and pre-university institutions and the closing of all public and private universities and skills training institutes nationwide. Fortunately, this COVID-19 pandemic has opened the eyes and minds of many, including teachers and students. Awareness of maintaining hygiene, adhering to the rules, and implementing virtual learning is one of the implications of today's situation globally.

Teachers have begun to explore various mediums of online learning as an alternative to their teaching (Nagpal, 2020). With the advent of various educational technologies today, the process of teaching and learning does not have to happen face-to-face, especially in today's difficult situation. In an effort to ensure that the educational system is not interrupted despite the worldwide panic, the United Nations Educational, Scientific and Cultural Organization (UNESCO) recommends the use of various technologies to ensure continuity of learning. Teachers can use online learning platforms for teaching, interacting with students and providing virtual training. Many students today have access to home-made technology equipment (Moroni, Nicoletti, & Tominey, 2020). Teachers have voluntarily

changed their teaching approach according to the 21st-century learning framework(Nagpal, 2020). Previously, there have been some studies that point out teachers' difficulty in adapting to information-based learning and most teaching is still teacher centred(Andersen & Nielsen, 2019). So what are the new norms that teachers and students need to face today? The answer is that sitting at home, keep hygiene, and protect the social distancing since the MCO took effect on March 18, 2020. According to information released by the World Health Organization (WHO), physical and social distancing to curb the spread of the virus will not end in time one to two months, but spans a few months, and may last up to a year(UNICEF, 2020). This certainly affects student learning and how teachers adapt to it is crucial. Ironically, who thought a virus would be a catalyst for paradigm changes and practice in education(Poornima& Sandy, 2020).

What teachers did during the COVID-19 pandemic?

The question now is about the implementation of national education, during the COVID-19 and post-COVID-19 pandemics. In the face of unresolved diseases, the public must be prepared for educational practices that are different from those previously experienced(McCarthy, 2020). When students are not allowed out of the home and students of higher education institutions are asked not to attend the campus, the authorities need to consider other approaches to ensure that the learning sessions can be implemented during the MCO period. It is not just about education, but the direction of education as a whole must be revisited, not to deviate from the National Philosophy of Education which aspires to holistic student development.

As the Malaysian National Education Development Plan (NEB) 2013-2025 is being developed, the goal is to place Malaysia together with the top three among the countries with the world's best education system. The NEB Annual Report published annually since 2013 shows that various initiatives have been implemented to achieve this goal, particularly in the areas of pre and in-service teacher training. The Ministry of Education Malaysia (MOE) has also put the needs of information and communication technology in education as a Shift 7: Leveraging ICT to improve the quality of learning in Malaysia. The MOE believes that ICT will help strengthen the teaching and learning process in all schools in the country. Students should have access to broad, engaging, and interactive content through the complete equipment. What is important is that this ICT facility will be part of the life of the students at the school, without the gap between urban and rural.

Amid COVID-19 pandemic, human interaction needs to be further strengthened through telecommunication tools(Siradjuddin, 2020). Ideally, virtual learning should be pursued using a variety of approaches, be it synchronous learning or online platform(Burgess&Sievertsen, 2020). Learning tools used can be customized to suit learning needs. For those with internet access, Microsoft Teams, Facebook live or Google Classroom are the best choice. Interactions can also be implemented through various chat apps, which allow students and teachers to engage at any time. This approach has been proven by institutions that practice full time online learning(Gloria & Diana, 2020).

Issues arose when the findings of the survey conducted by MOE during the MCO showed that there were constraints in terms of access to the Internet and the use of devices for learning. However, almost 80% of secondary school students have smartphones followed by about 36% of primary school pupils. Yet, for other devices such as tablets, computers, and laptops, the volume of ownership is very low which is around only 5 to 14%. This is the fact that the national education system still has yet to be able to fully support virtual learning and diverse learning modes.

21st Century Pedagogical Skills:

Over the second decade of the 21st century, beginning in 2000, various phases of transformation in education have taken place. Along with the rapid technological change, the educational field is also experiencing a revolution demanding change in the practices and skills of teachers in 21st-century learning. Teachers need to be constantly exposed to the latest knowledge and skills to meet the challenges of providing human capital in an increasingly demanding job market (Drew, 2012; Nurazidawati et al, 2011; Partnership for 21st Century Skills, 2010; Trilling & Fadel, 2012). This finding is significant with the need for training in the form of professional development among teachers to enhance their competence and skills in delivering learning content.

The annual report of the NEB released in 2018 suggests that school administrators, need to be guided to act as agents of change from teacher-centered learning to student-centered learning that encompasses a variety of methods and strategies appropriate to 21st century learning (MOE, 2018). Wan Roslina(2011) in her study reported that there is a significant relationship between the practice of school leadership on teacher commitment and attitude. She suggested that to foster a positive learning climate, school leaders should focus on activities involving the

development of professionalism and productivity of teachers. Therefore, the application of 21st century learning skills among teachers is very important.

Globally, the world economic landscape has changed from industry-based to information-based (Rios, Ling, Pugh, Becker, & Bacall, 2020). Employers today require skilled and knowledgeable employees with various skills such as problem solving skills, communication, coping skills and critical thinking as stated in NEB 2013-2025 (MOE, 2013). The World Economic Forum (2016) reports that by 2021, jobs that can be programmed will slowly disappear and be replaced by machines or robots (Martha Hampson, 2015; Teo, 2019). This report is very important to researchers in the field of education especially involving 21st century learning.

Current Practice of 21st century learning in Malaysia:

Nor Hazizah and Aniza (2019) in their study found that overall teachers in Malaysia are capable of delivering good teaching but lack of knowledge, understanding and pedagogical skills of 21st century learning. The misperception in teachers in Malaysia towards 21st century learning is that they are not interested in developing the related pedagogical skills. Ahmad et al. (2019) state that teachers often misinterpret 21st century learning structures with high technology and computer assisted teaching.

However, Amran and Rosli (2017) who studied teachers' understanding of 21st-century learning skills listed the mastery of information technology as a requirement for teachers to make their teaching more effective. Yusof (2019) refutes this claim because the classroom environment is not necessarily equipped with ICT equipment to enable PAK21 but more importantly, it is a learning environment that promotes communication, thinking skills, and teamwork among students. It is undeniable that the latest technological developments, especially concerning e-learning (SitiFaizzatulAqmal&Razali, 2011), and the use of a variety of educational resources (MohdMahzan et al., 2016) have a significant correlation on student interest.

As reported by Rusdin (2018), the failure of teachers to apply 21st-century skills in teaching and learning has a direct impact on students. Therefore, teachers are the key determinants of successful implementation of 21st-century learning as envisaged in NEB 2013-2025. There are aspects of teacher understanding that hinder the implementation of 21st-century learning, as the findings of Rusdin's (2018) study suggest that teacher professional development is indispensable for improving teacher knowledge of 21st-century learning. Continuing learning in the form of professional development can equip teachers with the knowledge and skills of 21st-century learning as they prepare to be transformational agents in the national education system (Liew, 2019).

The Survey of the implementation of 21st-century learning by Radin and Yasin (2018) concluded that the MOE used experimental approaches in the form of success through various activities to motivate teachers to apply 21st-century learning in the classroom. These activities include in-service training, continuous development and professional learning related to 21st-century learning organized by the MOE need to go through an improvement phase from time to time (Radin&Yasin, 2018). Such an approach can take a long time and involves high costs.

Methodology:-

An online survey was conducted in collaboration with the Kuala Muda/Yan District Education Office. A link to answer the survey question was sent to a total of 1250 teachers through the school administrator. However, only 1222 answers were obtained and analyzed descriptively. There are six constructs that teachers need to answer that include: school type, subject taught, student engagement, type of online learning, online learning advantages, and problems encountered in implementing online learning. All 1222 questionnaires were received on March 30, 2020. The data obtained were then converted to Microsoft Excel format for analysis. The research team consisted of 4 members probing each response to ensure that the questions were answered correctly and in quality accordingly.

For questions 5 (advantages of online learning) and 6 (problems encountered in implementing online learning), the research team developed several appropriate themes to summarize respondents' answers. After obtaining the analysis from the questionnaire, the research team reviewed the data to make sure no number was wrongly entered. In the case of dubious data, researchers are contacting teachers who have been found to have mistakenly entered the data via telephone and email to confirm. All data is then processed and presented descriptively.

Objectives of the Study:-

The purpose of this survey is to fulfil the objectives of the study as follows:

1. To explore the implementation of online learning by teachers during the MCO period as a result of the COVID-19 outbreak.
2. To identify the benefits of using e-learning among teachers
3. To identify the constraints or problems encountered in the use of e-learning

Result and Findings:-

A total of 1222 respondents consisting of 631 middle school teachers and 591 primary school teachers participated in this survey (Figure 1). On the whole, teachers of the main subjects such as language, science, and mathematics are able to use e-learning platforms well. Figure 2 shows only a few isolated subjects such as primary school history (1 teacher) secondary school mathematics (15 teachers) shows very minimal teacher involvement. The use of e-learning platforms by other subjects covers a wide range of multi-discipline such as design, accounting, entrepreneurship, vocabulary and more. Figure 3 shows the involvement of student groups in e-learning with 26.4% of teachers reporting their student engagement of more than 25 in one session. Meanwhile, the lowest student engagement reports were within the range of 1-5 students per session at 17.8%.

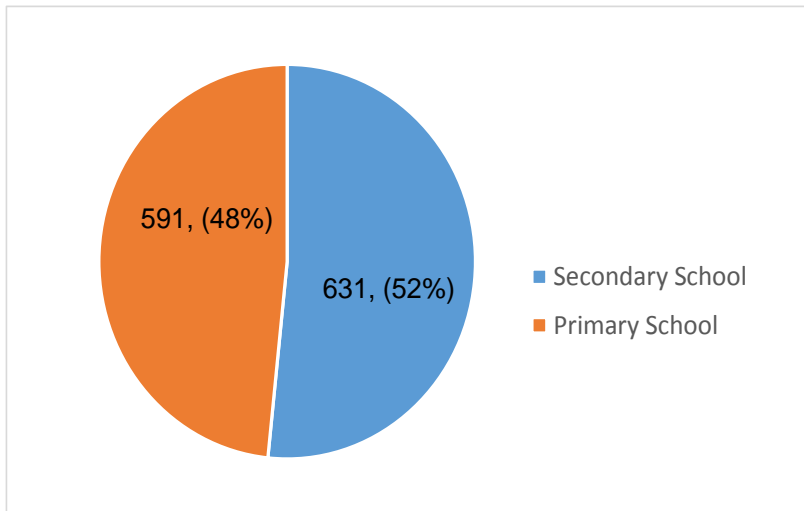


Figure 1:- The teacher involved in the survey.

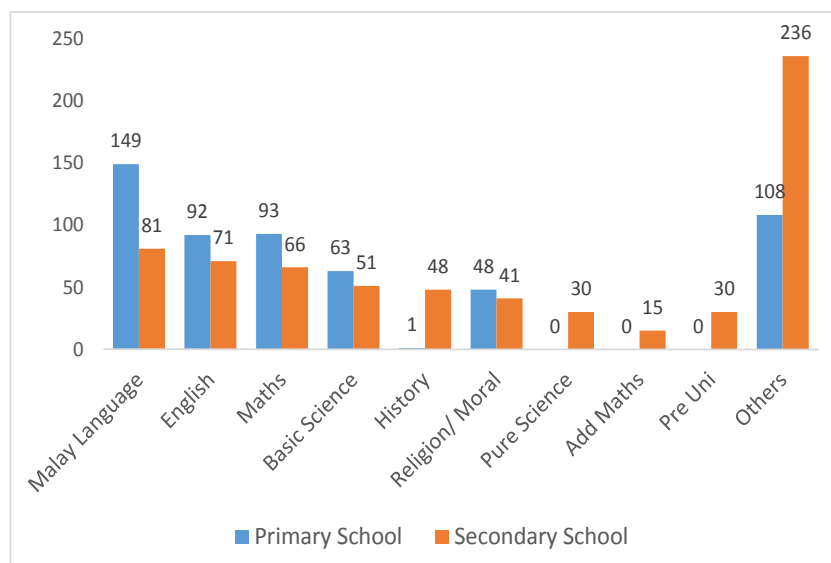


Figure 2:- E-learning subject analysis.

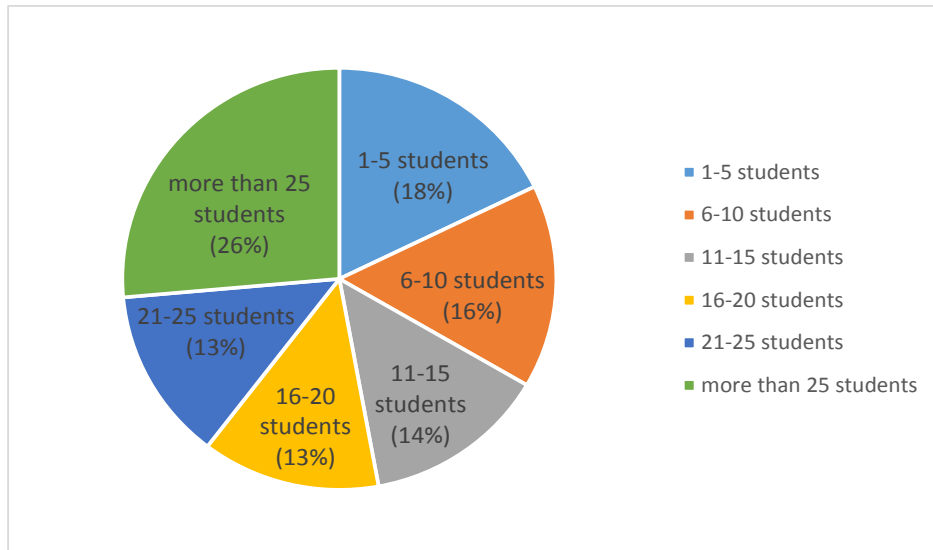


Figure 3:- The involvement of student groups in e-learning.

Meanwhile, the most popular medium of learning among Malaysian teachers during the COVID-19 pandemic was the Whatsapp and Telegram application which employed almost 763 respondents. The use of the Google classroom platform is also encouraging with 187 users (Figure 4). This is clearly a positive reflection of the ministry that has sought to promote the platform in smart school initiatives a few years back.

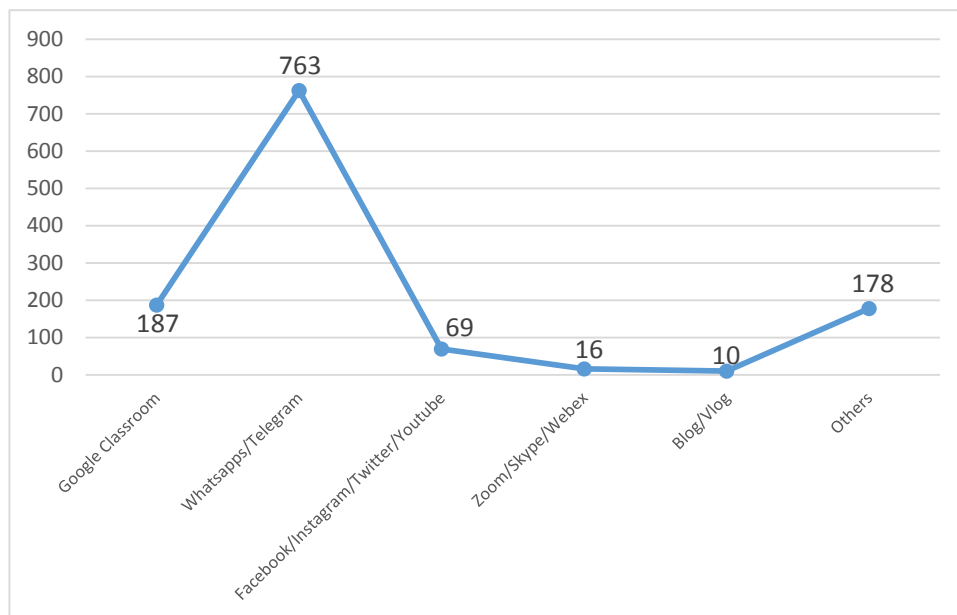


Figure 4:- The medium of e-learning among Malaysian teachers.

Construct of the fifth question pertaining to the benefits of e-learning, a total of 8 themes were developed by a group of researchers such as Table 1. The themes listed underwent a thorough coding and transcription process. All 1222 respondents were categorized and coded. One of the benefits of e-learning that the teachers describe is that it can foster student-teacher relationships as well as students being able to learn anywhere with the convenience of the internet.

Through the e-learning platform, students can collaborate with parents and increase parent engagement throughout the MCO period. Pupils are also more interested in performing various activities provided by teachers in virtual form.

Table 1:- The benefits of e-learning.

No.	Themes for the benefits of e-learning
1.	Strengthening teacher-student relationships
2.	Self-learning
3.	Support materials can be easily uploaded
4.	Students can learn from their homes or anywhere if they have internet access
5.	Easy and flexible
6.	Parents involvement
7.	Attracting students and having fun doing activities
8.	Students are committed and passionate about completing assignments

For the last question related to the problem faced by the teacher, the research team developed 6 appropriate themes. Table 2 shows the problems faced by teachers in implementing e-learning during the MCO due to the COVID-19 pandemic. One of the main reasons for teachers is the difficulty of providing materials online as well as the difficulty of contacting all students at the same time. The teacher also describes the pupils as being entertained to watch only videos and animated material and does not focus on the assessment made by the teacher. Poor internet connectivity has led to very limited access to online learning. This is especially true for teachers and students living in the suburbs and villages. There are even students who do not have direct internet access.

Table 2:- Problems that teachers face in e-learning.

No.	Themes for problems that teachers face in e-learning
1.	Preparation of learning materials
2.	Difficulty of gathering all students online basis at the same time
3.	More focus on video and animation than on content
4.	Difficulty in performing assessments and correcting pupils' mistakes
5.	Some students do not have internet access
6.	Limited internet speed in rural areas

Discussion:-

Believe it or not, the presence of the COVID-19 pandemic has opened the eyes of Malaysian teachers to master 21st-century learning. Previously, a variety of supportive training initiatives had been implemented at various levels, it would still not have changed the landscape of teacher thinking. However, in the desperate need for teachers to use e-learning platforms to deliver their teaching, teachers have proven that they can actually apply 21st-century learning well. But things like teaching effectiveness and assessment systems should be given priority in online learning sessions. School administrators need to constantly monitor and make an improvement to assure stakeholders that online learning is the future of education.

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