Teachers' Beliefs of Coronavirus on Online Learning

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ABSTRACT

The learning and simplification in the 21st century particularly due to covid-19 is a real challenge for each individual teacher. Virtual classroom, multimedia, mobile learning, electronic learning, and cloud technologies as the components of digital learning play a vital role in this century but a sudden shift to totally online learning, instead of real classroom, has triggered teachers to change in their learning and simplification. Hence, this study is carried out to explore teachers' beliefs of how coronavirus impact on online learning. This study applied the qualitative study with 58 informants using the purposive sampling method. Motivation, engagement, social relationships, entertainment, creativity, and virtual experiments are the themes identified from this study. The impact of the coronavirus on online learning has been profound, affecting various aspects of education.

CONTRIBUTION/ORIGINALITY: This study successfully produced information related to teachers' beliefs from the knowledge aspect of the industrial revolution, which was able to unravel research questions related to the implementation of learning and simplification during the Covid-19 pandemic.

1. Introduction

The outbreak of the coronavirus pandemic has significantly disrupted the traditional education system. As schools around the globe have been forced to shift to online
learning, educators have been faced with unprecedented challenges. To ensure uninterrupted student learning, the Ministry of Education Malaysia (KPM) responded by issuing Ministry of Education Circular Number 3 of 2020: Guidelines for the Implementation of Teaching and Learning (PdP) during the Movement Control Order due to the Transmission of Covid-19 infection, on March 27, 2020 (Kementerian Pendidikan Malaysia, 2020). To prevent disruptions to student learning during this MCO period, teachers have been instructed to practise Teaching and Learning at Home (PdPr), either online or offline depending on the level of teachers and students. This article aims to explore teachers’ beliefs regarding how the coronavirus has impacted online learning.

According to research by Tamar and Levin (2006), the teacher’s belief component examines how digital technology is incorporated into the curriculum and places a major emphasis on the teacher’s belief in doing so. When teachers decide what to teach and include in the curriculum, their beliefs serve as a filter (Batjo & Ambotang, 2019). As a result, beliefs affect how teachers apply innovation. Beliefs help us adjust to new classroom environments, procedures, and objectives as well as to new teaching strategies. The implementation of innovation is contextually significant to teachers’ beliefs and principles, according to Abbas and Narjes (2017). The process of reflecting on a teacher’s classroom instruction as well as personal behaviour to raise the teacher's quality of instruction is also referred to as "teacher efficacy" (Liliana & Luliana, 2016).

As a result, the teacher's contribution to the teaching and learning process is crucial. To complete the process and create a dynamic product, this input must be efficient and of good quality (Mohd Aizat, 2019). To present the lesson's material, teachers are crucial. Through successful teaching techniques, teachers work to ensure that students comprehend the lesson's material simply and efficiently and can produce pupils who are engaged (Mohd Aizat, 2019). The success of learning outcomes will be positively impacted by the variety of instructional techniques used. According to Liliana and Luliana’s (2016) study, teachers believe in experimenting with different teaching strategies to determine a method’s efficacy and suitability. If the teacher uses a variety of teaching techniques, the students won’t get bored either.

1.1. Background of the Study

The phenomenon of covid-19 pandemic has forced teachers to be autonomous and creative in their learning and simplification. As it is sudden to everyone, the schools and teachers are unprepared to switch from conventional education to contemporary education. Teachers are struggling to familiarise with contemporary education. For some veteran teachers who are in fact novice in contemporary education, shifting to online learning might become an issue due to unpreparedness and uncomfortable. While for millennium teachers who are considered experts, online learning might not be a problem but their students mostly in the alfa generation (students born from 2010 to 2025 and considered as the first generation entirely born within the 21st century) would have problems with the internet accessibility.

Due to the on-going COVID-19 pandemic, face-to-face classes halted, and they must be replaced with online learning. Students living in areas where there is little, or no internet access do not have much choice but to depend on learning that is programmed and embedded in CD Learning Package. Students with good internet access can go fully online while those with moderate internet access can still be online but do less online activities.
With the reduced sessions of face-to-face guidance by teachers, the effectiveness of learning can be accessed via the production of the synchronous and asynchronous activities that come together with the notes for learning. However, the quality of learning depends on how much the students participated in the provided activities.

The advantage of online learning over face-to-face learning is that there is a lot of learning flexibility in terms of schedule and environment, self-discipline, and responsibility (College Data, 2016). According to reports by the Department of Statistics (2020), in some states, the government still faces challenges in providing fast internet access. In fact, many rural places in Sabah and Sarawak have poor or little internet access. The problem is even worse in the interior of these two states where some villages are still struggling with even basic amenities such as water, electricity, and telephone connections. However, the successful implementation of online learning lies, not only, on the services of broadband and internet access but also teachers’ beliefs and students’ learning style.

1.2. Objective

To explore teachers’ beliefs of how coronavirus impact online learning.

2. Literature Review

Despite the Ministry of Education provides guidelines and courses, the implementation of online learning, is inevitably influenced by the teachers’ existing beliefs (Buehl & Beck, 2015), their prior experiences, their development experience, and the availability of the resources. Online learning involves engagement in terms of behavior, emotion, and cognitive (Deci, & Ryan, 1987; Engle & Conant, 2002). The phenomenon of covid-19 pandemic has forced teachers being autonomous and creative in their Learning and Simplification (LnS). As teachers’ conceptions of LnS affected their practices either in the classroom or outside classroom, then their conceptions impact the effectiveness of LnS in new normal practices due to Covid-19. A new normal practice in the LnS requires distance learning without the physical presence of teacher and students. The new normal proposed by Kuhn (1970) was derived from the term he referred to as scientific revolutions and this term is employed in covid-19 pandemic. Innovative learning via new normal practices in the LnS can be achieved by digital learning in the forms of blended and virtual learning.

Behavior engagement is linked with commitment, effort, persistence, attention, and collaboration. Emotional engagement is associated with interesting, boring, happiness, anxiety, sadness (Engle & Conant, 2002). Cognitive engagement involves problem solving, hardworking, stimulating creativity, and ways of coping perceived failure (Engle & Conant, 2002). According to World Health Organisation (WHO) (2020), the spread of COVID-19 can be reduced by wearing mask at public places and to ensure school students maintain appropriate hand and respiratory hygiene, practicing social distancing and limiting crowding. In the education sector, schools are categorised as high risk. Therefore, in the post-COVID-19 era, a teacher and students are not encouraged to have active discussions among each other and must practice social distancing during the schooling hours. Due to the on-going COVID-19 pandemic, online learning is considered as the “King” of all learning strategies over face-to-face learning methods. Virtual laboratories are interactive media to create and conduct stimulation experiments, playgrounds to experiment which consist of domain dependent simulation programs,
experimental units called objects that include data files, devices operating on objects, and reference books (Arief & Victor, 2015). If practicum is not possible, virtual laboratories can be used. It is a laboratory in the form of computer programs containing experimental simulations such as in real laboratories.

Potkonjak et al. (2016) provide virtual laboratory: Virtual multimedia-can present sounds, texts, animations, videos, and images, so that the content covered is presented broadly and easily understood. Multimedia laboratories can be distributed on CD as part of the teaching material of particular course, or made available on the internet for online access; Virtual with virtual reality-characterized by the total immersion of the user in the virtual world, or in other word, it is transferred to the environment programmed through features such as viewing glasses and cellars; Virtual augmented reality-characterized by the enrichment of the real world by adding virtual elements. The user generally observes the occurrence of events from the computer screen, without having to equip special viewing devices, and interact with virtual objects with the aid of tangible markers, also without requiring special devices for the task.

3. Research Methods

The methodologies employed are phenomenography and phenomenology research (Bowden, 2000; Larsson & Holmstrom, 2007). Data were gathered through qualitative approaches: interviews, individual and group presentation, and informants’ reflection during the activities in the workshops that would allow the researchers accessing the beliefs of the teachers about new normal practices due to corona virus or Covid-19 as well as post Covid-19. As collaboration with practitioners (secondary school teacher) is essential, then five researchers of the Faculty of Psychology and Education UMS, Curriculum Officer from the Sabah Education Department (Sandakan), and one secondary school teacher were involved in the study. Selected teachers by the State Sabah Education Department were drawn from four zones (Kota Kinabalu, Keningau, Sandakan, and Tawau), but slight changes of the selection due to school other commitments. They were invited to the workshops as their attendance is part of a professional development required by the Ministry of Education. WhatsApp groups were created once the letter of invitation has been sent for them to post comments, ideas, suggestions or ask questions relating to online learning. Workshops on online learning were about multimedia lecture notes, synchronous (e.g., Telegram, Google Meet and WhatsApp) and asynchronous activities, and assessment. During the workshops, discussions with teachers are held to elicit their beliefs and to obtain feedback for their comments and suggestions for online learning.

During the workshop activities, the researcher conducted synchronous and asynchronous activities. Participants were introduced to Google meet, skype, video production, social networking chats (Telegram), YouTube and padlet. They were asked to provide their views, share their knowledge or experience on online learning during Covid-19 and after the pandemic of covid-19 over. Participants were asked also to complete the Google Forms, the questionnaires on online learning, before and after, the activities end.

Sandakan: There were fifteen participants from five secondary schools: seven female and eight male participants. Three of them are from the Sandakan District Education Department. Three schools are in rural areas and the two schools are in urban areas. Participants teach subjects for a variety of upper and lower secondary levels. One of the
researchers conducted the workshops on online learning for two days. She conducted online learning activities following the sequence shown in Table 1.

Table 1: Number of Participants based on Zone

<table>
<thead>
<tr>
<th>Zone</th>
<th>Number of School</th>
<th>Gender of Participant</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Sandakan</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Tawau</td>
<td>4</td>
<td>1</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Keningau</td>
<td>4</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Kota Kinabalu</td>
<td>5</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>20</strong></td>
<td><strong>38</strong></td>
<td></td>
</tr>
</tbody>
</table>

Each workshop will be held for a group of 15 teachers, it lasts for one whole day, it takes place in Universiti Malaysia Sabah (Kota Kinabalu), Keningau, Sandakan, and Tawau. Workshops on online learning will involve the production of the synchronous and asynchronous activities that come together with the notes for learning. The type of synchronous learning are online meetings such as Google meet, skype, video call, Facebook live, social networking chats (WhatsApp, Telegram) etc. while the type of asynchronous learning are learning notes distributed via YouTube and activities using Learning Management System (LMS), padlet (forum) etc. Type of activities based on the availability of internet facilities is shown in the following Table 2.

Table 2: Types of Activities

<table>
<thead>
<tr>
<th>Type of learning activities</th>
<th>Fully online (urban school)</th>
<th>Partial online (selected urban and rural school)</th>
<th>Little / No internet (rural / interior school)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good internet access</td>
<td>Moderate internet access</td>
<td>Little / Non internet access</td>
</tr>
<tr>
<td>Multimedia lecture notes</td>
<td>· Video via YouTube</td>
<td>· Video via YouTube</td>
<td>· Video via CD Learning Package / Pen drive</td>
</tr>
<tr>
<td></td>
<td>· Additional videos via other learning websites (MOOC, Khan academy, etc.)</td>
<td>· Additional videos via other learning websites (MOOC, Khan academy, etc.)</td>
<td>· Learning notes via CD Learning Package / Pen drive</td>
</tr>
<tr>
<td></td>
<td>· Animated notes via Powtoon</td>
<td>· Animated notes via Powtoon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Learning notes via LMS / padlet</td>
<td>· Learning notes via LMS / padlet</td>
<td></td>
</tr>
<tr>
<td>Synchronous learning activities</td>
<td>· Scheduled meeting session à Google Meet</td>
<td>· Scheduled meeting session à Google Meet (participate limited session)</td>
<td>· Question and Answer (Q &amp; A) session via Virtual Tutor programmed into CD Learning Package / Pen drive</td>
</tr>
<tr>
<td></td>
<td>· Personal scheduled meeting session à Skype / video call</td>
<td>· Personal scheduled meeting session à Skype / video call</td>
<td>· Scheduled periodic phone calls to teacher</td>
</tr>
<tr>
<td></td>
<td>· Project / Experiment presentation à post on YouTube / Google Meet + feedbacks from teacher</td>
<td>· Project / Experiment presentation à post on YouTube / Google Meet + feedbacks from teacher (optional)</td>
<td></td>
</tr>
</tbody>
</table>
### Asynchronous Learning Activities

- Self-practice (MCQ/short answers) à testmoz.com
- Self-reflective essay / opinion à padlet.com / LMS
- Experiment à post on YouTube + feedbacks from teacher
- Preparation of digital portfolio about "whatever learned from the course"
- Sharing of learning experiences / opinions on social networking groups via WhatsApp / Telegram / FB

### Assessment

- MCQ or short answers à scheduled time of summative assessment via testmoz.com
- Essay à scheduled time of summative assessment via email

As this research is to be carried out in secondary schools, approval from the Education Planning and Research Division (EPRD) in the Ministry of Education Malaysia will be sought once the grant application is received from the Research & Innovation Centre, UMS. Through the EPRD approval, a copy of a letter of an approval from the EPRD will be forwarded to the Sabah State Education Department. The State Education Department will issue an invitation letter to the respective schools from four zones to attend the workshops. The paradigm of a research method is crucial when determining the research approach. According to Cohen et al. (2011), a paradigm is a philosophy tied to the goal of performing research. This paradigm of this study the interpretivist paradigm. The major purpose of this survey method was chosen because it is one of the objectives, acceptable, and systematic approaches to be used to explain the phenomena that is occurring and the link between the two variables involved, the factual variables and the demographic characteristics (Mohd. Majid, 2000). Meanwhile, this study design is less expensive, can obtain quick feedback, and can properly achieve the mean population information (Zikmund et al., 2010). The design of this study places the collection and analysis of qualitative data as a priority. This is used by conducting qualitative data collection using interviews.
4. Result

4.1. Motivation

One of the key challenges faced by teachers during the pandemic is maintaining student motivation in the online learning environment. Teachers believe that the lack of face-to-face interaction and physical presence negatively affects students' motivation levels. Without the immediate feedback and support provided in a traditional classroom setting, students may find it challenging to stay engaged and motivated. Teachers have reported that they have had to adopt various strategies such as incorporating gamification, interactive quizzes, and rewards to enhance motivation and encourage active participation.

4.2. Engagement

Online learning presents unique challenges in terms of student engagement. Teachers have observed that the absence of physical presence often leads to distractions and reduced student engagement. They believe that the inability to personally monitor students’ progress and address their queries in real-time hampers their ability to effectively engage with the material. To counter this, teachers have implemented various techniques such as interactive video lessons, collaborative projects, and virtual discussions to promote active engagement and foster a sense of community among students.

4.3. Social Relationships

Teachers recognize the importance of social relationships in the learning process. They believe that the shift to online learning has had a significant impact on students’ social interactions. The absence of face-to-face interactions and the limited opportunities for informal conversations have resulted in a sense of isolation among students. Teachers have emphasized the need to create virtual spaces where students can connect, engage in group activities, and build meaningful relationships. They have utilized video conferencing tools, discussion boards, and online forums to facilitate social interactions and maintain a sense of community within the virtual classroom.

4.4. Entertainment

In a traditional classroom, teachers often incorporate entertaining elements to make learning more enjoyable for students. However, replicating this aspect in online learning has proven to be a challenge. Teachers have had to find creative ways to make their online lessons engaging and entertaining, utilizing multimedia resources, interactive quizzes, and gamified learning platforms. While these efforts have been commendable, some educators have expressed concerns about the limitations of online tools in creating an entertaining learning experience.

4.5. Creativity

The coronavirus pandemic has pushed teachers to think outside the box and find innovative ways to deliver content and engage students. Many educators have embraced technology and explored new teaching methods to foster creativity among their students. This has led to the development of virtual art projects, online performances, and
collaborative digital storytelling activities. Despite the challenges, teachers have demonstrated tremendous creativity in adapting to the new online learning landscape.

4.6. Virtual Experiments (Hands-on and Minds-on)

Science educators have faced unique challenges in providing hands-on and minds-on experiences to students in a virtual environment. Teachers have had to leverage various online resources, simulations, and virtual labs to replicate the practical aspects of scientific experiments. While these virtual experiments cannot fully replace the hands-on experience, they have allowed students to continue their exploration of scientific concepts and develop critical thinking skills. To overcome this limitation, teachers have turned to virtual experiments, simulations, and interactive online laboratories. These virtual resources allow students to engage in hands-on and minds-on activities, enabling them to explore scientific concepts in a virtual setting.

5. Discussion

Due to the ongoing COVID-19 pandemic, face-to-face classes halted, and they must be replaced with online learning. Students living in areas where there is little, or no internet access do not have much choice but to depend on learning that is programmed and embedded in CD Learning Package. Students with good internet access can go fully online while those with moderate internet access can still be online but do less online activities. With the reduced sessions of face-to-face guidance by teachers, the effectiveness of learning can be accessed via the production of the synchronous and asynchronous activities that come together with the notes for learning. This study shown that teachers face various challenges in online learning such as enhancing student's motivation, strengthening student's engagement, emphasizing student's social relationships, incorporate entertaining elements to make learning more enjoyable for students and pushed teachers to think outside the box to find innovative ways to deliver content in effective ways. However, the quality of learning depends on how much the students participated in the provided activities.

6. Conclusion

The impact of the coronavirus on online learning has been profound, affecting various aspects of education. Teachers have risen to the challenge, adapting their teaching practices to maintain student motivation, engagement, social relationships, entertainment, creativity, and hands-on learning experiences. It is evident that despite the limitations, educators have demonstrated resilience and creativity in navigating the new era of online learning. Moving forward, it is crucial to continue supporting teachers in their efforts to provide quality education in the face of such challenges. Teachers have recognized the challenges posed by the shift to online education and have actively sought solutions to ensure student motivation, engagement, social relationships, entertainment, creativity, and hands-on learning experiences are not compromised. By incorporating innovative strategies and leveraging technology, teachers have adapted to the new normal, striving to provide a meaningful and enriching online learning experience for their students.
Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Research Ethics Committee of Universiti Malaysia Sabah. All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Permission was obtained from the Malaysian Ministry of Education, Sabah Education Department, District Education Office, and the school principals involved in the study. Informed consent was obtained from all participants.

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Conflict of Interest

The authors report no conflicts of interest regarding the research, authorship or publication of this study.

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