OPTIMIZING GOOGLE SITES IN LEARNING: EMERGING DIGITAL TRANSFORMATION POST COVID-19 IN MALAYSIA

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ABSTRACT

The COVID-19 pandemic has changed the education system, impacting teachers in various ways. Apart from the difficulty in e-Learning modes of instruction and insufficient social support, teachers must keep instructional time and application use at high performance. Due to distancing learning also, Ujian Pencapaian Sekolah Rendah (UPSR) has been abolished. In responding to the current school-based assessment and the challenging factor of Malaysians' educators to stay ahead in the digital post-COVID-19 age, we have invented a new learning environment using HyperDoc with Google Sites (GS). Hence, this study was set out to explore sample views on the pedagogical strategy regarding GS application and to elaborate further on the resulting development of students. A case study was

conducted with two participating lecturers, and 22 students from a teacher training institute (IPGKDa) and data analysis was carried out manually using open and thematic coding methods. In particular, we have categorised the participants' responses into two main themes: teachers' dissatisfaction and impact on students' learning. The results suggest that utilising digital technologies in meaningful ways would become the answer to bridge the gap despite the pandemic crisis. The authentic learning environment strategies have provided directions to accelerate a highly competent 21st-century learner. As the teacher trainee institution, we aim to reinvent a better future post-COVID-19 for sustainable education by implementing and curating technology solutions that will meet the needs of current educators, especially primary school teachers. Strategies employed would also be able to guide further research in Malaysia to cope with the educational loss and, simultaneously, prepare the independent students for a future post-COVID-19.

INTRODUCTION

The COVID-19 crisis and the subsequent social distancing measures have imposed numerous challenges to the school system. School children worldwide have lost 1.8 trillion hours and counting of in-person learning due to COVID-19 lockdowns, and the cost of school closures on students' learning and well-being has been devastating (UNICEF, 2020). In order to maintain learning sustainability during this period, the educational community also have made concerted efforts. Students had to rely solely on their resources to continue remote learning through the Internet. In Malaysia, school closure has brought about the Primary School Achievement Test (UPSR) to be abolished starting from 2021, as announced by Senior Education Minister Datuk Dr Radzi Jidin. The decision resulted from unbearable issues due to students' preparation time and inability to conduct face-to-face schooling (The Sun Daily, 2021). The assessment method for Year Six students will be focused on School-Based Assessment (PBS), which may lead to panic among teachers. Hence, this article seeks to address one of the most contentious issues, primarily social

and mental disruption in school society during the pandemic and how to ethically conduct valid assessments without placing anyone's health at risk.

Before the COVID-19 crisis, the Malaysian education system preferred the traditional classroom technique, with only a few private colleges offering blended learning for more advanced students. E-learning adoption in Malaysia is still in its early stages for educators and students due to insufficient equipment and an unconducive environment, especially for underprivileged students. It can be seen that digital transformation comes with several logistical challenges and attitudinal modifications (Ribeiro, 2020). However, the pandemic has unexpectedly induced learning institutions to use digital learning tools. As expected, it did not go as smooth because there was a brief period of chaos for schools and some universities.

As a consequence of the pandemic COVID-19, everything that was once done physically had abruptly changed and suddenly, everyone must rely on the Internet or applications to ease things. Similarly, due to this deadly virus, the traditional learning process has immediately halted. Nonetheless, for the sake of the nation's social well-being and sustainable education, traditional classroom learning has evolved from physical to virtual. Similarly, conducting online classes requires teachers to be more creative to maintain students' attention for extended periods. Simply sharing the screen does not guarantee that the students would be listening. However, by incorporating Google Sites (GS) in technological advancements, educators may now combine their website with relevant resources and re-establish a cohesive class experience on a digital basis.

GS enable the virtual learning process to go much more accessible. For example, in IPGKDA, we practised ePortfolio using the GS platform to enhance a collaborative virtual task and initiate a higher order thinking stimulus among students and teachers in the School Science Curriculum Studies course. This course is offered to enable students to understand the design of the Primary School Science Curriculum and acquire skills to carry out the teaching of science. Despite the shutdowns, ePortfolio has created a bigger picture to meet the unexpected outcomes. Hence, students viewed GS as capable of promoting self-directed learning. It would also substantially assist a

sharper increase in their motivation by various intrinsic rewards, such as self-esteem, the joy of discovery and achievement satisfaction.

Innovation to Cope with the Pandemic and Psychological Instabilities

In responding to the challenging crisis of Malaysians' educators to stay ahead in the digital post-COVID-19 age and to ensure the validity of PBS, we put forward the idea of using technology and offering online classes through eLearning. Instead of a violent threat, we discover an emerging opportunity associated with the new digital skills, leading to innovative partnerships for teachers and students, as discussed by Janet Hughes (2017). Lifelong learning is the key to digital skills acquisition and is essential for young learners to thrive in this complex, rapidly changing world. Therefore, we believe digital transformation would provide a learning environment for teachers to accelerate 21st-century learning in their teaching, providing support towards character development and embracing essential skills including critical thinking, communication, collaboration, and creativity (4Cs). Moreover, instead of mental distressing, we view digital transformation as a driving start for the community worldwide to experience a peaceful education and recultivate 21st-century education, focusing on preparing students to be more viable lifelong learners.

RESEARCH OBJECTIVES

In particular, this paper aims to introduce a new creative learning approach using GS as a medium for delivering material and assisting online planning, organising, implementing and monitoring students' progression. We also like to engage attention to online collaboration teachers-students, giving advantages for both sites to adopt learning habits of mind employing problem finding, visualising, improving and enhancing creative problem-solving. Besides incorporating critical thinking, we would also like to arouse public curiosity into numerous advantages in curating page and subpage on GS, attaching links, videos and questions. The study would therefore suggest and attract teachers and learners towards learning progression that will meet the needs of educators, especially primary school teachers, to implement classroom base assessment.

METHODOLOGY

This holistic single case study was applied in Institut Pendidikan Guru Kampus Darulaman (IPGKDA) for the SCES3063 Primary School Science Curriculum Studies elective science course. The study involved 22 students who were purposively selected because they had science education background during their secondary schools. Two teachers were also involved in the study's first phase to answer the question, "What do you feel about remote learning during MCO and how is your preparation?". Upon completing the course learning time at the end of the semester, all the students were asked to give feedback on their experience using GS in their online class.

For the data collection, teachers joined a semi-structure interview while students were asked to share reflection entries on their learning experiences. Data were analysed thematically to answer the research questions. As to maintain anonymity, the participants' names were not revealed in the entire study.

Construction of ePortfolio using GS

Primary School Science Curriculum Studies discusses the development of the primary school science curriculum in Malaysia. Relevant science teaching and learning approaches which cover the application of learning theories and strategies are also introduced. It also encapsulates the specific skills of lesson planning. The class employed GS as an innovative way to eliminate the obscurity in remote learning. In the first place, they created a home page with the main topic, "Learning Theories in the Teaching and Learning of Science". Then, teachers assigned subtopics into five groups according to the sequence in the course outline. Then, students made a short draft of the topic outline and curated the layout in line with the learning outcome (Appendix A, https://sites.google.com/epembelajaran. edu.my/pbdkbat2021/home). The brainstorming process took place repeatedly and continued until the end of the course. Finally, we came out with a complete website with an array of content with texts, images, videos and links, also trivial and engaging questions directing readers to the new page. Navigation for each subtopic also could be found in the left bar.

For example, in the subtopic "Cognitive Learning Theories", there are some sentences to explain the meaning of the theories. In the part that shows two categories, there is also a link to Google Docs about the categories. Some pictures are also attached to the page with colourful and informative graphics design and explicit texts. Below the pictures, they have sentences that describe more about the reference pictures. The background colour will differentiate some parts of specific topics. "Example of Discovery Learning" and "Experiential Learning" were divided into parts with green or white backgrounds. For additional homework, a page with the subtopic "Discrepant Event" was created for a student to self-explore.

At the end of the navigation menu is a subtopic named "Complete Lesson Plan". This link menu contains the student's name, which means that a particular student was responsible for designing and uploading their lesson plan on the determined page. They were asked to make a lesson plan using the Needham 5-phase Constructivism Model. The big idea of the lesson plan is "Sustainable Energy". Concerning the science curriculum specification, students will find a relevant topic, year, learning outcome, activities, and questions to suit the big idea. Students were trained to induce Higher Order Thinking Skills (HOTS) questions in the lesson plan in order for the pupils to achieve the higher Performance Standard from the Document of Standards Performance and Assessment (DSKP), which serves as a tool to monitor pupils' developmental progress for each Learning Standard. The activities aim to guide students to become novice teachers who could ensure the pupils at schools achieve the highest performance level, PL6.

FINDINGS AND DISCUSSION

In this paper, the findings are highlighted according to the themes that were constructed based on the participants' responses. Generally, we categorised the participants' responses into two main themes: teachers' dissatisfaction and impact on students' learning.

Theme 1: Teachers' Dissatisfaction

This section presents teachers' dissatisfaction regarding their dreadful feeling within the first phase of the Malaysian Government's Movement Control Order, commonly referred to as MCO or PKP.

Both teachers agreed that teaching during the coronavirus era requires substantial resources that not all teachers possess.

> *"My class has undergone a complete change to accommodate the online learning. Before classes began, we used to stay up overnight to prepare our class presentation.*
> *I felt really uncomfortable. (teacher 1)*

> *"It's been an extraordinary amount of work made completely to create better online learning, I do hope but would not imagine teachers has no choice but to work together and cope with the stress due to MCO." (teacher 2)*

Teacher A expressed her view of inadequate skills to assess students' feedback and measure their progression.

> *"Grading is also challenging because many missed assignments are not the students' fault. Students who miss assignments generally have difficulty finding their materials, struggle with inadequate Internet service and must deal with plenty of noise and distractions around them and teachers cannot help because of distance and location."*

Teacher A's response was supported by Teacher B, who claimed the campus had made many structural and procedural changes to comply with new guidelines. Inability preparing class with new digital skills was physically and mentally exhausted.

> *"But I find the most painful thing is the one for which I noticed I was not always prepared. It hit me when I checked my online class was unlikely to be completed every minute. I could feel most and everyone sitting and staring at me and their eyes filled with nervous tension, confusion and worry."*

Teacher B felt the stress while conducting online lessons and the excerpt below was identified to support the claim:

> *"I am used to hearing and seeing students interacting with each other when I am presenting but in the world*

of google meet, all you hear is yourself against multiple tiles on mute — and that day, most of the tiles were blank backgrounds with names."

Crucially, there is also an emotional burden to bear.

"There was limited talking. There were no happy conversations among classmates.The tone has changed. The illness of social well-being took many things. Unfortunately, it also took away the usual noise and excitement every time we start class and meet classmates. I did not hear a laugh. I could not observe students' body language. What once felt like joy in my classroom quickly turned into emptiness." (teacher A)

Theme 2: Impact on Students' Learning

After experiencing GS tools, students agreed that the ePortfolio they created has dramatically impacted their remote learning. Employing GS as an ePortfolio has indeed changed the role of teachers in the borderline classroom. On top of that, partnership worldwide is entirely possible, while collaboration among teachers and resources is in a borderless continuum. Producing web via GS has increased their psychological stabilities and cognitive strength as explicated:

"I am exhausted at the beginning of online learning, but I must start my day because it is time for the inevitable duty. Exhausted. After introducing to Google Sites, we are experiencing exhausted but also kind of excited. This unfortunate circumstance has weirdly allowed them to really try some new things."(Alia)

Meaningful learning while constructing the ePortfolio with multiple layers is also consistent with their course syllabus and skills they should cover.

The unprecedented shift in all aspects of our lives led to the higher demand for digital enablement globally. Recently, we see ourselves adapting to the new normal because of the COVID-19 pandemic. Apart from google classroom and video communication via google meet, GS, as part of google workspace, is also advisable to create a

free website without any need for computer programing knowledge. However, planning, organising, implementation, and monitoring is prerequisite when creating a web by GS (Eko Yuniarto, Febi Dwi Widayanti, et. al, 2021). That is why Google has created a Google for Education patent, which allows educators to visit the site and immediately learn how to create a website on GS fit out with features like adding content, adding pages, automating proprietary design, and sharing websites.

First and foremost, teachers should understand how to use GS to produce good learning websites effectively. Homeschooling, remote teaching and learning difficulty resorted teachers to diagnose the learning strengths and weaknesses from afar, measure students' progress against the teaching and learning objectives, and then review and modify their teaching to enhance student's learning. GS has advantages because it is a free, friendly user and has attractive features permitting easy collaboration with other authors to create and edit site content (Eko Yuniarto, Febi Dwi Widayanti, et al., 2021).

> *"Since many people can edit GS at once, teachers can use this to collaborate and create a site that works best for their students. We do not feel alone—no more panic at home."(Zaidi)*

> *"Working with multiple people can also help us boost critical thinking and reasoning to make the site more informative or to create more organised materials. In a team, we can work with each other to distribute works such as design, search and categorisation."(Iman)*

Therefore, a suitable cooperation mechanism becomes a substantive medium for students and teachers to continuously edit and provide space for improving the product quality until reaching the expected results as stated in the course learning outcome mentioned by most respondents.

Participants in this study agreed that GS is easy to use and did not take much time for educators to create. Despite exhausting mastering the content, they expressed their excitement to learn and create more online games to make learning fun. Correspondingly, Karakas and

Kartal (2020) also discussed that capturing enjoyment and engagement was possible in GS by adding a game-type assignment to a webpage so that after students watch the material, teachers can add some game links as a revision. This means students will increase their interest in learning as teachers can incorporate gamification trends by merging Quizizz, Word Wall, Mentimeter, and Kahoot on GS.

We recommend GS to improve the absorption capacity of students virtually instead of physical interaction in the classroom, and teachers should change their approach or strategy online to help their students master the intended learning standard. GS is preferred as it supports learners to understand fundamental content knowledge and concurrently develop essential skills such as critical thinking, collaboration, communication, and creativity. Dealing with scientific tools and chemicals during the pandemic, however, practical in the laboratory was impossible due to homeschooling. On the other hand, demonstration online using GS has proved to be very useful. Therefore, inserting a link from YouTube or a virtual scientific lab has successfully combat these physical threat issues. As community support, Google has also created a series of tutorials for GS in which teachers learn how to create a free website to help their classes in an easy and manageable way.

In response to students' life learning during the pandemic, they mentioned that every day was a learning hike for them. For example, students experienced trial and error adapting and adjusting compound microscopes by exploring virtual platforms provided by a local university to investigate cellular structures using a 100X objective lens. According to students' responses, when using GS, teachers only share the respective link; students will find the content they want to include on the site, assign the material, and locate it on the page they intend to design.

A reflection from student interestingly showed the learning transfer:

> *"Very interesting because GS was constructed to ease users to link directly to relevant websites and videos on YouTube, which may be very helpful in reducing students' uncertainty due to insufficient books and materials for further activities."(Nina)*

Another student also expressed her ability to use the technology in managing learning and this motivation is recorded in the corresponding reflection below:

> *"Using GS, I learn how to add relevant text paragraphs with photos or videos. Videos on YouTube can also be displayed directly on the site, rather than clicking on a new link and going to YouTube to watch the video. I can easily read the information on the website and the real-life photos and videos to facilitate my understanding of the teacher's message. Besides the YouTube video, I can also attach a slide or a chart using Google Slide and Google Sheets. Google Forms can also be attached to the websites for students to answer something or as a medium to get feedback from students and other teachers." (Sithra)*

Upon completion, it is exciting and resourceful for students to browse the site frequently. Students created complete online learning without face-to-face learning with the website monitored and supervised by the teacher. Maqbool (2016) highlighted that the pandemic has opened for extra learning. Apart from content knowledge, students also gain opportunities to learn about digital art in GS and positively impact the study group. This kind of digital learning is not only good for students but also for teachers growing skills. Ultimately, amid all of the adversity, it was evidenced by multiple learning at once.

Similarly, it takes a subject and a verb to make a sentence, so it takes a teacher and a student to make a classroom. The abrupt changes have sparked the most significant benefit of new digital skills. Most of them have already become super tech-savvy at the end of the semester. For example, students in this study have created GS by adding many photos, videos, and links that help them access these features by directly browsing for more exciting learning complementary to textual representations.

> *"The best part of learning via GS is that we can play and learn simultaneously. Quickly access to any HyperDoc make learning feasible, engaging to any approach and virtual match to initiate curiosity and joy without realising we are actually in the mode of learning."(Faris)*

Students also shared their feelings on peer learning that assisted their learning moments in class and out of class.

> *"We assign our subject, science, we can make a page for each topic in the course handbook, and then we can choose the topic based on what has been assigned to our group. We collaborate to design our pages. Every group would contribute and make it easier for us to get the complete information we want in a shorter time than putting it individually and searching for it on a single page for comparison." (Ramachandran)*

In primary schools, text alone does not allow students to fully understand the knowledge, especially for younger children who may have difficulty understanding long texts. The benefit was also discussed by Nandi Supriyanto, Muhammad Faisal, et al. (2021), who portrayed numerous friendly and hyperlinked features in GS.

Another point of view is that practising social distancing through nationwide lockdowns has increased psychological instabilities, leading to panic and severe health problems. As people are forced to self-isolate and quarantine themselves in their homes, their mental and emotional health can be negatively affected, causing illnesses such as post-traumatic stress disorder, anxiety, and depression, amongst others (Galea, Merchant and Lurie 2020; Venkatesh and Edirappuli 2020). Furthermore, school closure may exacerbate mental illness for children and adolescents already living with mental illnesses due to the lack of exposure to support material to which they usually have access in schools (Lee 2020). However, using media as GS has witnessed enormous cooperation among all involved. COVID-19 has urged our education to transform immediately into digital civilisation and integrate educational, international understanding (EIU) worldwide. Participants acknowledged that distance learning had shone a bright light on how we, as a society, have ignored a viable and equitable education for too long. To ensure sustainable social well-being, we sincerely hope such trends will continue because while we all share these current burdens, we will also share the successes that come from working through them together.

To sustain a peaceful education as highlighted in the 17 sustainable development goals blueprint, the government must be the biggest

backer for the teachers to hold more training. Moreover, these workshops do not necessarily have to focus on GS; the Ministry of Education can also set up workshops on other online software so that a holistic teacher can be achieved simultaneously. The Ministry of Education can also focus on trainee teachers so that they can have the ability to facilitate online learning from the start. Then many teachers can give the best education to their students depending on the situation and create more ways of learning to break the traditional way of learning. We are trying to focus on the bright spots of the potential increase in digital users. We wish other educators would have been granted the same option for the study's implications. With minimal time to prepare, we propose educational technology training could be organised for teachers and unfamiliar students to restart with unreasonable new digital learning guidelines and skills.

CONCLUSION

COVID-19 has a poor impact on the mental health of the students and teachers in various ways. On the brighter side, we have evidenced that the heightened crisis turned out to be a distinctive strength and greater chance for educators to try out new digital transformation spaces. Even though the students in this study have been frustrated about the restrictions in remote learning, they have handled it with an impressive amount of maturity. Producing web via GS has increased their psychological stabilities and cognitive strength. Findings from students' responses revealed that apart from the difficulty in social distancing, e-Learning modes of instruction have unexpectedly yielded instructional methods, significantly accelerating students' holistic character and skills. We have been very impressed with students' desire to participate. Seeing the students grow, mature, take chances and learn from limited technology skills is a fantastic privilege, which was mainly a big victory. A more significant increase in students' confidence and curiosity, as well as their readiness to be assessed virtually, give insight to us promoting GS to other teachers, especially in primary school who are directly affected by School-Based Assessment due to the abolishment of the Primary School Achievement Test. After all, resulting from the IR4.0 revolution, the education sector must embrace new technologies to stay up-to-date in the ever-evolving world. In fact, throughout this year, we have not been

thinking about how the COVID-19 crisis has built a new dimension, leading to a new perspective in assessing students' progression. Nobody ever comes into practice before to measure learners' soft skills from their intrinsic interrogation and assessment of scenarios without influence from other people. That was an authentic outcome. By sharing and digitalising the experience of learning through GS, the teachers in Malaysia would hopefully receive the whole of society's support to improve their skills and simultaneously create an active educational process.
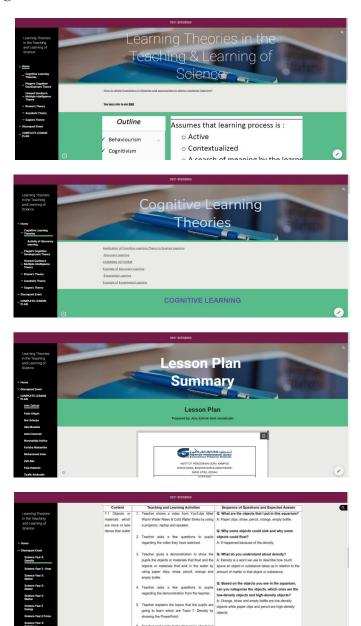
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