

# Attitude Towards G Suite for Education During Pandemic COVID-19

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**Abstract:** *The COVID-19 pandemic has changed the landscape of the workplace and disrupted the school operation including teachers whereby the face-to-face teaching method can inhibit the teaching and learning process. The pandemic has forced school closures globally. Hence, teachers began to explore a new way to carry out the task of teaching. Alternatively, they opted for the solution of distance learning. The G Suite for Education is the best alternative for teachers. Teachers adopt G Suite for two-fold reasons: ease of use, and usefulness. The purpose of this study was to understand teachers' acceptance of the G Suite. The research framework in this study was based on the technology acceptance model (TAM). The population sample consisted of 126 teachers in few schools in the states of Terengganu and Selangor, West Malaysia. The PLS-SEM was used to analyze the data. The researchers distributed the questionnaire to the respondents via the Google Form in order to assess the attitudes of teachers in accepting G Suite. The results of the data analysis indicated that the majority of the teachers had a positive view of the technology. This study also indicated teachers use G Suite for its usefulness during the pandemic.*

**Keywords:** G Suite for Education, online learning

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## 1. Introduction

The world was shocked by the COVID-19 pandemic. On 11 March 2020, the WHO (World Health Organisation) subsequently declared COVID-19 as a global pandemic (Duong, Luo, Pham, Yang, & Wang, 2020; Gardner Et Al., 2020; Viner Et Al., 2020). This is followed by the Malaysia government who also declared national lockdowns as early as 18 March 2020. The pandemic heavily disrupted the learning process in 188 countries and affected more than 1.7 billion children, youth, and families (OECD, 2020). The pandemic inhibited the face-to-face teaching method since the school closures. This brings to the potential of learning loss due to the closures. The survey conducted by the OECD-Harvard Graduate School of Education estimated at least 2 months of instruction of students in primary and secondary schools (Reiners and Schleicer, 2020). This also exposes to the digital disparities between students as learning goes online (Sampathkumar & Shwayder, 2020) as it impacted all stages of the global education system from pre-school to university and caused academic conferences to be cancelled or postponed (Panesar, Dodson, Lynch, Bryson-Cahn, Chew, & Dillon, 2020). The impact of school closures has changed the education dramatically with the rise of online learning (Perrotta, 2020; & Selamat and Jaffar, 2011). Alternatively, teachers began to opt for the G Suite for Education (G Suite). The purpose of this study was to examine the teachers'

acceptance of the G Suite. Furthermore, the effect of COVID-19 also National Training in The Ministry Of Education, namely, Institute of Aminuddin Baki (I.A.B) Genting Highlands, Ministry of Education, Malaysia. The outbreak also limits the implementation of training delivery in I.A.B, prediction of technology usage and adoption is now one of the main streams of studies. This encourages the process of learner-trainer interaction in enhancing the Student-Centered Learning (SCL) approach. In fact, G Suite for Education is one of the applications offered by Google to enhance SCL or formerly known as Google Apps for Education. This can improve the training as posited by Murphy (2020) whereby he referred it to “the normalization of emergency elearning”. This study adapted the Technology Acceptance Model (TAM) in examining the user’s acceptance towards the application.

## **2. Literature Review**

### **a) G Suite for Education**

G Suite for Education (formally known as Google Apps for Education), the cloud computing services by Google, is a suite of free productivity tools for classroom collaboration (Kakoulli-Constantinou, 2019). The suite has a myriad of advantages including fully online, independent platform, collaboration, storage space, auto-saving, and free usage. First, the resources are entirely online, running on mobile devices in a web browser or software. To work with documents in various places, no USB drive or other storage devices are needed. Next, the G Suite for Education can be utilized. on PCs, Macs, iPhones, and Android phones, iPads, other tablets, and Chromebooks. Then, the tools are designed to work collaboratively, allowing several individuals to work on the same document at the same time. Further, G Suite for Education offers Unlimited storage (1 TB if 4 or fewer users) storage space for users. Then, all files in G Suite are saved automatically. Lastly, G Suite for Education does not charge extra cost when using the tools.

### **b) Technology Acceptance Model**

The theoretical framework utilized in this study was based on a model (TAM). It is widely recognized model in the field of IT, which coined by Davis (1989). Davis (1989, 1993) recommended TAM as the best model for investigating end user attitudes towards and acceptance or rejection of a technology (Mohamed Eltayeb, 2014). TAM proposes two independent variables—perceived ease of use, and perceived usefulness (PU) of a technology—to predict the user’s attitude toward adopting a technology (Gao, 2005). The technology in this study is referred to G Suite for education. Many scholars in the IT field considered user perception and acceptance to be the key determining factors in the adoption of any technology (Cocosila, 2013). Moreover, according to Paquette, Jaeger, & Wilson, (2010), users making decisions to either adopt or reject a technology may be concerned about ease of use and usefulness of that technology. Additionally, Hackbarth, Grover & Yi (2003), suggested that perceived ease of use plays an important role in determining and predicting users’ intentions to use a technology. Similarly, Davis (1989) coined the term of PU as the degree to which a user believes that the adoption of a particular technology will improve the performance of his or her job. The perceived ease of use, on the other hand, is the degree to which a user believes that using a particular technology would be effortless (Davis, 1989).

**Table 1: Source of instrument**

Section B	Questions	Source
Perceived Ease of Use (PEU)	Easy to learn Easy to get Understandable Easy to interact with Easy to become more skillful Ease of Use	6 items adapted from Davies (1989)
Perceived Usefulness (PU)	Intention to Use Usefulness Like Useful in my job Good idea Accomplish tasks quickly	6 items adapted from Davies (1989)
Attitude	Security apprehensive Trust in G Suite Fun Fear of privacy breach Lost a lot data	5 items adapted from Mohamed Eltayeb (2014)

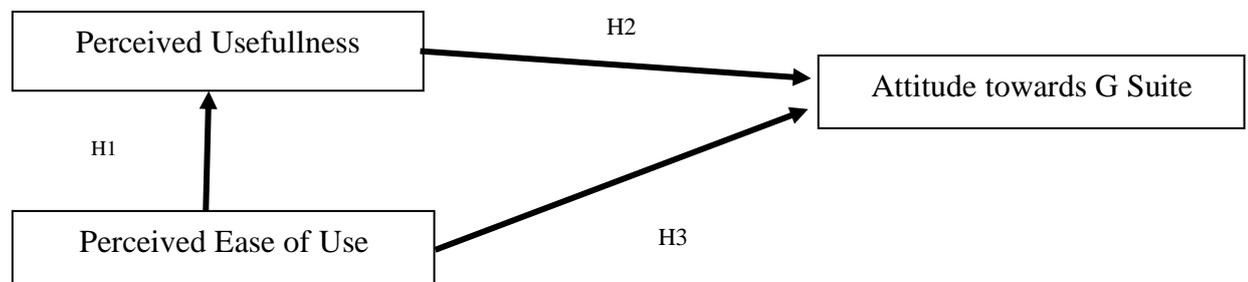
### c) The Application of G Suite in I.A.B training

The researchers integrated G Suite in the eLearning course to enhance school leader’s competency in managing their schools efficiently. The course was carried out for two days via f2f (face to face) on site. They are exposed to the different types of applications including Jamboard, Google Keep, Google Drive, Google Forms, Google Calendar, Google Slides, and so forth. Approximately, 70 million students and teachers utilised G Suite globally (Fenton, 2017).

Google Classroom as one of the free applications in G Suite that enable the users to send out assignments and communicate. The active users are doubled to more than 100 million since the beginning of March 2020. Next, Google Meet, a video conferencing app is being used 25 times as much as it was in January 2020, and the broader G Suite for Education offering has 120 million users, up from 90 million a year ago as pointed out by Javier Soltero, a Google Vice President.

### 3. Research Framework

The researchers proposed below research framework as portrayed in Figure 1. Figure 1 displays the modified TAM developed for this study in order to comprehend attitudes of respondents towards G Suite for Education.



**Figure 1: Research Framework**

## a) Hypotheses

The research hypotheses are as follows:

H1: Perceived ease of use influences perceived usefulness of G Suite

H2: Perceived usefulness influences the acceptance towards Usage of G Suite

H3: Perceived ease of use influences the attitude towards Usage of G Suite

## 4. Methodology

The researchers employed deductive approach in this study. The respondents comprised of 126 school teachers and leaders from selected schools in Terengganu, and Selangor states in West Malaysia. The survey questionnaire was developed by Davies (1989, 1993) and rooted from TAM, and Mohamed Eltayeb (2014).

### a) Data Analysis

The SPSS version 21.0 and SmartPLS.3.0 were used to analyse the data. SPSS analysed the demographics information in frequency and the percentage as depicted in Table 1. The researchers analysed the measurement and structural models with PLS-SEM.

### b) Findings

The demographic profile of the surveyed respondents is presented in Table 1. The gender distribution of the survey respondents is 19.8% males and 80.2% females. The results also depict that the respondents are mostly in schools more than 20 years, which is 38.1% of the sample. Most of respondents are academic teachers which accounted 74.6%, followed by Head of panel, totalled 11.1%, and others.

**Table 1: Demographic profile**

	Frequency	Percentage
Sex		
Male	25	19.8
Female	101	80.2
Race		
Malay	115	91.3
Chinese	3	2.4
Indian	4	3.2
Others	4	3.2
Position		
Headmaster	10	7.9
Senior Assistants (Administration)	3	2.4
Senior Assistants (Students' Affair)	2	1.6
Senior Assistants (Co-curriculum)	1	0.8
Head of Department	2	1.6
Head of Panel Academics	14	11.1
Teachers	94	74.6
Tenure		
1 - 5 years	2	1.6
6 - 10 years	24	19.0
11- 15 years	34	27.0
16- 20 years	18	14.3
➤ 20 years	48	38.1

### c) Results of Measurement Model

The researchers evaluate the path model by assessing the measurement model which includes internal consistency reliability, convergent validity and discriminant validity. Table 2 depicts the reliability of this study. The latent constructs are above the threshold value which represented by the AVE of at least 0.5 (Fornell & Larcker, 1981) except Attitude (ATT). The AVE value of PEU is 0.867, followed by PU is 0.844.

**Table 2: Results of Measurement model**

Latent Constructs	Items	Loadings	AVE	C.R
Attitude	ATT1	-0.047	0.387	0.357
	ATT2	0.945		
	ATT3	0.946		
	ATT4	-0.284		
	ATT5	-0.253		
Perceived Ease of Use	PEU1	0.920	0.867	0.975
	PEU2	0.943		
	PEU3	0.942		
	PEU4	0.924		
	PEU5	0.921		
	PEU6	0.935		
Perceived Usefulness	PU1	0.893	0.844	0.970
	PU2	0.866		
	PU3	0.955		
	PU4	0.943		
	PU5	0.941		
	PU6	0.911		

The Composite reliabilities in the measurement model ranged from 0.357 to 0.970.

### d) Results of Structural Model

Based on Table 3, it is proven that two hypotheses supported in this study (H1 & H2) and H3 was not supported.

**Table 3: Results of Structural Model**

Hypotheses	Path	P value	Results
H1	PEU→PU	0.000	Supported
H2	PU →ATT	0.000	Supported
H3	PEU→ATT	0.362	Not Supported

## 5. Discussion

This study was conducted empirically to examine users' attitude towards G Suite for education in the school context. The findings proved that respondents' attitude towards G Suite for education can be explained in both factors namely, perceived usefulness and perceived ease of use. Previous researches supported this study indicated teachers as users use the technology (G Suite) when they feel that G Suite is useful for them especially during COVID19. Since all schools were lockdowns since 2020, face-to-face teaching and learning is no longer available, hence, teachers have to change their attitude by switching several applications in G Suite to implement their teaching since the applications are free online. This is supported by Thomas (2014). Additionally, according to Paquette et al. (2010), users making decisions to either adopt or reject a technology may be concerned about ease of use and usefulness of that technology, and so forth. Thus, this study proved that teachers accepted G Suite due to its usefulness for

teachers to perform their jobs during the outbreak. During the pandemic, most of them use various applications such as Google Meet, Google Classroom, Google Forms, Google Drive, Google Docs, and Gmail in their current practice. Nonetheless, some teachers perceived G Suite is not really easy to use. For instance, they would opt other applications too such as Zoom or Webex.

This result is consistent with previous research that current empirical results on TAM are contradictory and inconclusive (Moore & Benbasat, 1991). For example, some studies have shown that PEU does not have a significant effect on the acceptance of technology (TA), although others have found that this impact is significant (Hendrickson & Collins, 1996; Venkatesh & Davis, 1996). Many studies have found that the effect of PEU on PU is higher than that of PEU on TA, although others have found that PEU has a much greater effect on TA than PU (Lim, 2001). The research, therefore, supported previous studies.

## **6. Implication and Conclusion**

This pandemic offers many learning points to various parties including I.A.B. Undeniably, during the outbreak, there will be a disparity in terms of level of learning since it might not match what face to face teaching and learning would have attained. For teachers, students and parents, it takes times to switch to online learning and sacrifices. Moreover, the International reports also highlighted the challenges and obstacles face by schools in integrating the technologies of ICT into the classroom (OECD, 2018). For instance, online learning also reveals two-fold issue namely attendance challenges and higher absenteeism compared to before. Another problem that arises as a result of this is the possibility of disengagement or student dropout.

From teachers and parents' perspective, they embrace with a growth mind-set and accept this as a new normal. This study will be further helpful for the Ministry of Education, and Institute of Aminuddin Baki Genting Highlands Branch (I.A.B) in designing online learning effectively in the future and offer flexibility. Nonetheless, it provides some challenges the course on G Suite for Education for the school leaders, and teachers and offer a better platform and dynamic.

The study further implies that teachers opt for Google Meet and Google classroom to facilitate teaching & learning. Other applications, specifically, Google Forms, Google Drive, Google Docs, Google Keep, Google Task and so forth are less utilised. In the same vein, COVID-19 has a hysteresis effect or long-term impact on schools especially learning loss, students' disengagement, or schools' dropout (OECD, 2020). Furthermore, the COVID-19 pandemic caused significant stress among teachers, which was linked to poorer mental health, coping, and teaching. Teachers, on the other hand, registered resiliencies that were linked to improved coping and teaching. Teachers' well-being must be supported in order to avoid serious negative effects for teachers, their students, and the educational system as a whole (CN Baker, Haley, Monica, Megan, Kathleen, & Stacy, 2020). Teachers also face certain limitations including usage of teacher's data plan, connectivity, teacher's psychology states, and pressure during pandemics. Not all subject can be delivered smoothly via Google Meet especially Mathematics, Living Skills, and so forth since these subjects need further guidance from teachers. This study recommends that the Ministry of Education should offer offline learning to students and teachers as well as Mobile Learning (M Learning) which needs no real-time accessibility of the platform even though M.O.E comes up with DeLIMA initiative.

## 7. Limitations and Future Studies

This research was conducted without any limitations. By conducting the questionnaires as per the deductive method, the researchers employed a quantitative design. The study sample is limited in number & performed under purposive sampling. Therefore, because of the limitations, one cannot make a generalization of these research findings. The statistical test was non-parametric, as the sample size was small. Therefore, PLS-SEM was the analytical fit for non-parametric data.

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