

Research Article

This article is published by JAH,
Journal of Arts and Humanities,
Volume 6, N. 1, Feb., 2022.

ISSN: 2710-3013 (Print)

ISSN: 2788-6360 (Online)

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Article detail

Received: June 15th, 2022

Accepted: Sept. 14th 2022

Published: Dec., 2022

Conflict of Interest: The author/s
declared no conflict of interest



Online Education in Cameroon: Learners' Perceptions of the Effectiveness of Google Classroom as a Tool for Active Learning

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ABSTRACT

The COVID19 pandemic has had far-reaching consequences beyond the spread of the disease itself. One of the hard-hit sectors is the education sector. However, learning has not stopped but is now taking alternative forms, one of which is online learning. The Cameroon government on its part is implementing online learning in all its institutions of learning including the universities. This study seeks to explore students' perceptions of the effectiveness of Google Classroom as a tool of online Education. The data used for this study is made up of 1,800 responses collected using a questionnaire from 120 students (60 females and 60 males) from the University of Buea-Cameroon. The study adopted Davis' (1985) Technology Acceptance Model (TAM) as a basic framework to explore relationships among perceived ease of use, perceived usefulness and users' satisfaction regarding Google Classroom. In

spite of some challenges like technical problems with their devices and poor internet connectivity, the major findings showed that overall students were satisfied with Google Classroom and as such it was an effective online learning/teaching tool during the period in question.

Keywords: *Google Classroom, Online Education, Cameroon, COVID-19*

1. Background of the Study

The Coronavirus disease 2019 (COVID19) was first identified in the Wuhan, Hubei Province of China on 31 December, 2019 (European Centre for Disease Prevention and Control, 2020). On March 11, 2020, the World Health Organization announced that this disease has gone from an epidemic to a pandemic with close to 200,000 cases in 146 countries and about 6,500 deaths already recorded (Cucinotta & Vanelli, 2020). Interestingly, on Thursday, 5 March 2020, the Republic of Cameroon recorded her first case of COVID19 and the government immediately reacted by putting in place some preventive measures. Consequently, on the instructions of the Head of State, His Excellency Paul Biya, an inter-ministerial consultation meeting was held on Tuesday, 17 March, “to assess the situation and identify appropriate actions to be implemented” (Chief Dr Dion Ngute). Following the measures taken in this meeting, the Minister of Higher Education in Circular Letter N°/20-00016/MINESUP/SG/IGS/IGA/DDES/DAJ of March 21, 2020 among other measures called for the immediate closure of all educational establishments and for the suspension of face-to-face teaching. Furthermore, the Minister recommended that all facets of digital education (digital work environments, virtual classroom, MOOCs to name just these) and teleworking be implemented immediately and obligatorily in all institutions of higher learning in Cameroon. Since this was a decision made by the powers that be to help cut down the effects of the pandemic, this recommendation was

respected to the letter for a period of two months and ten days (March 21, 2020 to May 31, 2020) making it the first ever exclusively online teaching/learning in the history of the Republic of Cameroon. It should be noted that during this period the greatest challenge was to avoid the spread of COVID19 and as such any difficulties that resulted from the implementation of this recommendation were simply overlooked.

In order to implement the recommendations mentioned above, Google Classroom was adopted by a majority of the lecturers at the University of Buea. This application or tool for online education (Google Classroom) was added to other existing online teaching-learning tools by Google in 2014. It is paperless and time saving, it eases the users in creating classes, distributing assignments, communicating and staying organized (DiMaria, 2016; Iftakhar, 2016). Besides, this free web-based learning platform helps in simplifying teaching activities from creating materials, distributing them and grading the learning results. Furthermore, it can synchronize the G Suite for Education to all G Suite services like Google Docs, Gmail and Google Calendar. As a free product of the digital industry providing numerous benefits to facilitate virtual learning Google Classroom was no doubts the most used application during the period in question for online education.

The popularity of Google Classroom is increasing rapidly since its launch in 2014; however, there are limited studies which have explored the effectiveness of this tool. Shaharanee & Rodzi, (2016) analysed Google Classroom's active learning activities. They used the Technology Acceptance Model, henceforth, TAM, to study the effectiveness of the activities posted on the platform. Using 100 valid unduplicated responses from students enrolled in a data mining programme, the trio found out that a majority of the students were satisfied with Google Classroom as an active learning tool. Espinosa, Estira & Ventayen (2017) in a similar study evaluated the functionality of Google Classroom as a Learning Management System (LMS) and found out that cost was the

primary reason for its adoption. In another study, Liu & Chuang (2016) conducted an action research in Taiwan in which they used Google Classroom with the integration of peer tutor mechanism for 6th Grade students. Their findings revealed that students held a positive perception regarding the use of Google Classroom. As observed by Azhar & Iqbal (2018), the lack of research on Google Classroom, specifically in the context of developing countries has prompted the need to further investigate the effectiveness of this tool. This study explores the students' perceptions of the effectiveness of Google Classroom at the University of Buea-Cameroon during the COVID-19 lockdown period. In this vein, it provides answers to the following question: What are the learners' perceptions of the effectiveness of Google Classroom?

Hopefully, the findings of this study can help inform policy makers, educationists and teachers of the effectiveness of Google Classroom.

2. The Technology Acceptance Model (TAM)

TAM was developed by Davis (1985) to explain the computer usage behaviour. He suggested that user motivation can be explained by three variables: Perceived Ease of Use (PEOU), Perceived Usefulness (PU) as well as Attitude towards using the system. The attitude of a user towards a system is a major determinant of whether the user will actually use or reject the system. The attitude of the user in turn is considered to be influenced by two major beliefs: perceived usefulness and perceived ease of use, with the latter having a direct influence on the former. Both of the beliefs are hypothesised to be directly influenced by the system design characteristics represented by X1, X2 and X3 in Figure 1 below.

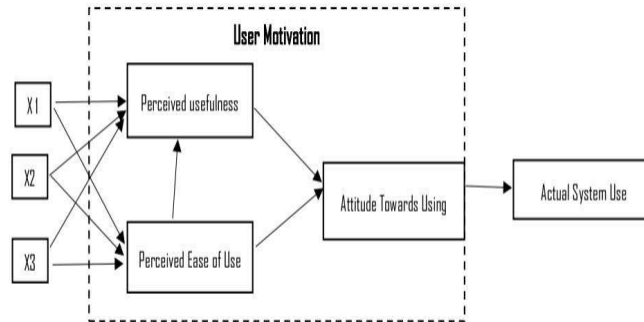


Figure 1: Original TAM proposed by Fred Davis
(Source: Davis, 1985, p.24)

Davis (1989) during later experimentation stages refined his model to include other variables as well as modified the relationships that he initially formulated. In the same line, other researchers (Venkatesh & Davis, 2000; Lee, Kozar & Larsen, 2003; Legris, Ingham & Collette, 2003; Ma & Liu, 2004; King & He, 2006; Sharp, 2006; Yousafzai, Foxall & Pallister, 2007) applied and proposed several additions to TAM, such that over time, TAM evolved into a leading model in explaining and predicting system use. According to Lee, Kozar & Larsen (2003) "TAM has become so popular that it has been cited in most of the research that deal with user acceptance of technology". In a nutshell, this model has evolved into "a leading model in explaining and predicting system use" (Chutter, 2009).

3. Methodology

As stated earlier, this study examines learners' perceptions of the effectiveness of Google Classroom. In order to gain insight into the matter under investigation we used a purposive sampling technique. A total of 120 students who took part in online classes during the period in question participated in this study. They were made up of 60 female students and 60 male students who had accepted using the Internet at least once a day. Each participant provided answers to a questionnaire containing their perceptions of the issue in question. These questions covered their opinions on ease of access, perceived usefulness,

communication and interaction as well as their overall satisfaction with Google Classroom. All the items were measured using a five-point nominal scale ranging from 1(*strongly disagree*) to 5 (*strongly agree*). Before distributing the questionnaire, two experts reviewed it to ensure the validity of its content. These experts were selected on the grounds of their expertise in online teaching and learning field. With some recommendations made by the experts we made some minor modifications involving paraphrasing, deleting items, rephrasing sentences and renumbering items. It is worth mentioning that a Likert type question on average of how often the Internet is accessed was asked in the first part of the questionnaire in order to identify the level of information and communication technology usage among the respondents. This question had five answer options ranging from never to many times a day. All participants confirmed that they use the Internet at least once a day and this was taken into consideration in this study.

4. Results

In this section findings are presented to answer the main question investigated, that is, what are the learners' perceptions of the effectiveness of Google Classroom? It is broken down into four different subsections made up of the participants' opinion on ease of access, perceived usefulness, communication and interaction and their overall satisfaction regarding the effectiveness of Google Classroom. Before delving into these different subsections, findings of the question on how often the Internet was accessed by the participants are summarised in Figure 2 below.

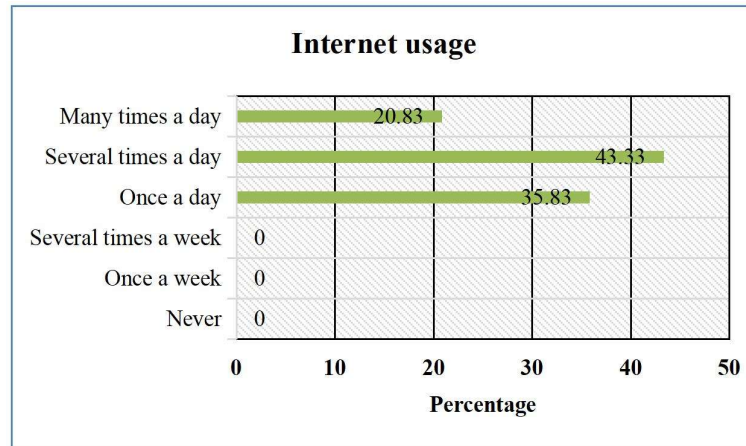


Figure 2: Internet Usage Average

As seen in Figure 2 above, six answer options were provided: *never*, *once a week*, *several times a week*, *once a day*, *several times a day* and *many times a day*. Out of the 120 participants, 52 (43.33%) responded that they use the Internet several times a day, 43 (35.83%) responded that the use Internet once a day and 25 (20.83 %) said they use the Internet many times a day. It is interesting to note that from *never* to *several times a week* none of the respondents checked them as an answer.

4.1 Ease of Access

Here, we present and discuss the opinions of the participants vis-à-vis signing on to Google Classroom, accessing course material, sending and receiving assignment, navigating the system and ease of understanding the system. Keep in mind that the participants responded to how easy they did these things on a scale of 1 to 5 (1= *Strongly disagree* (SD), 2=*Disagree* (D), 3= *Neutral* (N), 4=*Agree* (A) and 5=*Strongly agree* (SA)). For each variable under ease of access the participants provided 120 responses making a total of 600 responses in all. Table 1 below summarises our findings.

Table 1: *Opinions of Participants on Ease of Access*

Statement	Frequency									
	SD		D		N		A		SA	
	N°	%	N°	%	N°	%	N°	%	N°	%
Signing on to Google Classroom	0	0	10	8.3	5	4.1	83	69.2	22	18.4
Accessing course material	5	4.1	12	10	0	0	76	63.4	27	22.5
Sending/receiving assignment	22	18.4	8	6.7	14	11.7	44	36.6	32	26.6
Navigating the system	15	12.5	13	10.9	19	15.8	40	33.3	33	27.5
Easy to understand the system	7	5.8	15	12.5	32	26.7	35	29.2	31	25.8

Based on Table 1, 83 (69.2 %) of the participants *agreed* that signing on to Google was easy, 22 (18.4 %) *strongly agreed* so, 5 (4.1 %) were *neutral* on this point while 10 (8.3) *strongly disagreed* that signing on to Google Classroom was easy. Concerning accessing course material 76 (63.4%) of the participants agreed that they found it easy, 27 (22.5 %) *strongly agreed* that it was easy, 12 (10%) *disagreed* that accessing course material was easy while 5 (4.1%) *strongly disagreed*. 15 (12.5 %) of the respondents *strongly disagreed* that it was easy navigating the system while 13 (10.9 %) of the respondents simply *disagreed* navigating the system was easy. On the other hand, 40 (33.3%) participants *agreed* that navigating the system was easy and 33 (27.5%) *strongly agreed* that the process was easy, while 19 (15.8%) of the participants were *neutral* on this point. It was *agreed* by 44 (36.6%) respondents that sending/receiving assignments was easy followed by 32 (26.6%). Contrary to this, 22 (18.4%) of the respondents *strongly disagreed* that it was easy sending/receiving assignments and 8

(6.7 %) *simply disagreed* that this same process was easy while 14 (11.7%) stayed *neutral*. Finally, 35 (29.2 %) participants *agreed* that the system was easy to understand and 31 (25.8%) others *strongly agreed* while 32 (26.6 %) stayed *neutral* on the issue.

In a nutshell, out of the 600 responses received from the respondents across the five variables above, 278 (46.3 %) of them *agreed* that Google Classroom was easy to use while 145 (24.1 %) others *strongly agreed* so. On the other hand, 49(8.1%) of the participants *strongly disagreed* that Google Classroom was easy to access while 58 (9.7%) of the participant *disagreed* that the process was easy to access. Interestingly, 70 (11.8%) others, had nothing to agree or disagree concerning the ease of use of Google Classroom as they stayed *neutral* on the issue. This observation is summarized in Figure 3 below.

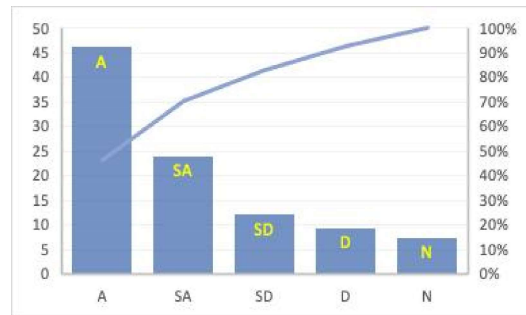


Figure 3: Overall Ease of Access of Google Classroom Score

Considering the fact that the process of sending/receiving assignment scored that highest number of *strongly disagree* among the five variables, we strongly recommend that in using Google Classroom teachers should put more emphasis on explaining this process to their learners. We equally recommend that learners be briefed adequately concerning the process of navigating Google Classroom as a tool of online teaching/learning.

4.2 Perceived Usefulness

In this section findings on how the participants perceived the usefulness of Google Classroom are provided. A total of 720 responses were gathered from the participants across six variables embedded in the main question. Contrary to the previous case wherein the participants responded to how easy they accessed Google Classroom, the participants here provided answers to how they perceived the usefulness of Google Classroom on a scale of 1-5 (whereby 1= *Strongly disagree* (SD), 2= *Disagree* (D), 3= *Neutral* (N), 4= *Agree* (A) and 5= *Strongly agree* (SA)). Table 2 below summarises our findings.

Table 2: *Opinions of Participants on perceived usefulness*

Statement	Frequency									
	SD		D		N		A		SA	
	N°	%	N°	%	N°	%	N°	%	N°	%
The quality of learning activity was excellent.	5	4.1	13	10.9	7	5.8	70	58.3	25	20.9
Google Classroom was an excellent medium for social interaction.	12	10	13	10.9	5	4.1	67	55.8	23	19.2
Google Classroom helped me to submit my assignment on time.	0	0	6	5	7	5.8	77	64.2	30	25
The course activities helped me to examine issues, to evaluate new ideas and to apply what I learnt.	20	16.6	13	10.9	10	8.3	56	46.6	21	17.5

The feedback provided by lecturer was useful.	25	20.9	13	10.9	14	11.6	47	39.1	21	17.5
The subject objective, assessment and content were consistent with the aid of Google classroom	10	8.3	17	14.2	5	4.1	62	51.7	26	21.7

As shown on Table 2 above, 70 (58.3%) participants out of 120 who provided responses to the questionnaire *agreed* that the quality of learning activity via Google classroom was excellent. among the remaining 50 participants, 25 (20.89%) *strongly agreed* while 5(4.1 %) and 13 (10.9%) others *strongly disagreed* and *disagreed* respectively that the quality of learning activity was not excellent. The remaining 7 (5.8%) respondents were *neutral* on this issue. With regard to the variable that Google Classroom was an excellent medium for social interaction, 67 (55.8%) participants *agreed* so while 23 others (19.2%) *strongly agreed*. On the other hand, 12 (10%) respondents *strongly agreed* to this while 13 (10.9%) others simply *disagreed*. Still on this same point, 5 (4.1%) participants chose to be *neutral*. Concerning submission of assignment on time, 77 (64.2 %) participants *agreed* that Google classroom helped them do so while 30 (25 %) of them *strongly agreed* to this. Curiously, none of the participants *strongly disagreed* that Google Classroom helped them to submit their assignment on time. In line with examining issues, evaluating new ideas and to putting the knowledge acquired into use, 20 (16.6%) and 13 (10.8%) participants *strongly disagreed* and *disagreed* respectively that Google Classroom helped them out with this issue. Contrastingly, 56 (46.6%) and 21 (17.5%) of the 120 participants *agreed* and *strongly agreed* respectively that Google Classroom helped them to examine issues, evaluate new ideas and to apply what they have learnt. The remaining 10 (8.3%) participants preferred to stay *neutral* on this issue. As to whether the feedback provided by lecturer (s) was useful or

not, 47 (39.1%) and 21 (17.5%) respondents *agreed* and *strongly agreed* respectively that the feedback provided by lecturers was useful. On the other hand, 25 (20.9%) and 13 (10.9%) of the 120 participants *strongly disagreed* and *disagreed* respectively that the feedback from their respective lecturers was useful. This was quite interesting because for the first time we observed that more students *strongly disagreed* on a point than *strongly agreed*. Finally, 62 (51.6 %) of the 120 responses gathered *agreed* that the objective and content of their different subjects were consistent with the aid of Google Classroom while 26 (21.6%) *strongly agreed* so. Conversely, 10 (8.3%) and 17 (14.2 %) respondents chose to *strongly disagree* and *disagree* respectively that objective, assessment and content of their different subjects were consistent with the aid of Google Classroom. Our overall findings on the perceived usefulness of Google classroom are summarised in Figure 4 below.

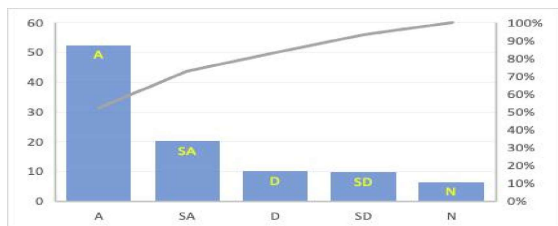


Figure 4: Overall Perceived Usefulness of Google Classroom Score

As seen on Figure 4 above, 52.7% (379) of the 720 responses combined *agreed* that Google was a useful tool of online teaching while 20.3% (146) *strongly agreed* so. On the other hand, 10% (72), and 10.4 % (75) of the responses gathered *strongly disagreed* and *disagreed* respectively that Google Classroom was a useful tool of learning for them. The remaining 6.7 % (48) maintained their *neutrality* on this issue.

4.3 Student's Satisfaction

A total of 480 responses from the 120 respondents were collected with respect to their personal satisfaction using Google Classroom as a tool of

online learning. In this vein, four variables were put at their disposal to exploit. The findings are summarised in table 3 below.

Table 3: *Opinions of Participants on their Personal Satisfaction*

Statement	Frequency									
	SD		D		N		A		SA	
	N°	%	N°	%	N°	%	N°	%	N°	%
Google Classroom met my personal learning goals	12	10	18	15	5	4.1	68	56.7	17	14.2
I would recommend this method of learning to continue even after the COVID lockdown period	26	21.7	17	14.2	12	10	40	33.3	25	20.8
Google classroom is my first choice in online teaching and learning compared to others	10	8.3	8	6.7	0	0	80	66.7	22	18.3
I like Google classroom as a learning initiative and motivation booster.	18	15	14	11.7	6	5	53	44.1	29	24.2

As indicated on Table 3 above, 68 (56.7%) of the 120 responses gathered *agreed* that Google Classroom met their personal learning goals while 17 (14.2%) others *strongly agreed* so. While 5(4.1%) respondents stayed *neutral* on this issue, 12 (10%) and 18 (15 %) others *strongly disagreed* and *disagreed* respectively that Google classroom did not meet their personal learning goals. Concerning the next variable, 26 (21.7%) respondents *strongly disagreed* that they would recommend this method of learning should continue even after the COVID-19 lockdown period. A total of 17 (14.2 %) other responses on this same issue *disagreed* that they will recommend this method for further use while 12 (10%) participants simply stayed *neutral*. Contrastingly, 40 (33.3%) participants *agreed* that they will recommend that Google Classroom should be used as tool a of learning even after the period in question while 25 (20.8%) of them *strongly agreed* so. Compared to other online education tools, 80 (66.7%) respondents *agreed* that Google classroom was their first choice whereas 22 (18.3%) *strongly agreed*. Out of the remaining 18 participants on this same issue 10 (8.3%) and 8(6.7%) of them *strongly disagreed* and *disagreed* respectively that Google classroom was their first choice in online teaching and learning compared to others. Interestingly, none of the participants stayed *neutral* on this point. With regards to the last variable, 18 (15 %) and 14 (11.7 %) respondents *strongly disagreed* and *disagreed* respectively that they like Google Classroom as a learning initiative and motivation booster. On the other hand, 53 (44.1%) participants *agreed* that they liked Google Classroom as a learning initiative and motivation booster while 29 (24.2%) participants *strongly agreed* so. Our overall findings on the personal satisfaction of the participants regarding Google Classroom are vividly presented on Figure 5 below.

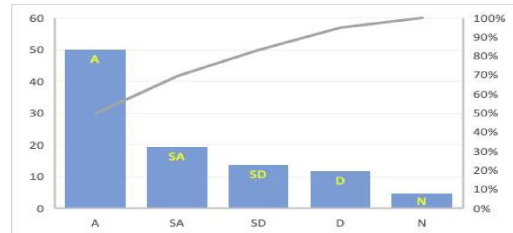


Figure 5: Overall Participants Personal Satisfaction

As seen in figure 5 above, 241 (50.2%) of the responses provided by participants demonstrated the fact that they *agreed* that they were satisfied with Google Classroom as a tool of online education while 93(19.3%) responses of the overall responses gathered *strongly agreed* so. On the other hand, 66 (13.8 %) of the total number of responses produced by the respondents show that they *strongly disagreed* that they were satisfied with Google Classroom as an online education tool while 47 (11.9%) simply *disagreed* so. Curiously, out of the total number of responses produced concerning user satisfaction, 23 (4.8%) of the responses were *neutral*

5. Discussion

As seen from the presentation of our findings above, the students were largely pleased with Google Classroom as a tool for online learning-teaching. Based on the participants' feedback, and our own reflections, a number of issues have been identified when choosing Google classroom as a tool for online education. These issues do not only provide a framework that will be useful to educators concerning pedagogical practices that make good use of this tool but may also be particularly useful for learners using it as an e-learning tool.

The first issue to be considered by educators is *accessibility*. As observed by Heggart & Yoo, (2018) "students will not willingly use a learning platform that is perceived to be 'clunky' or difficult to use". They further

suggest that “such platforms also need to be both device and browser agnostic, so that students can access them from laptops, desktops, tablets or even mobile phones”. For this reason, learners’ overall perceptions of the effectiveness of Google Classroom were largely positive. However, in using Google Classroom educators should make sure that they provide the learners with adequate feedback since it was observed in this study that 10.8 % and 20.8% of the participants *disagreed* and *strongly disagreed* respectively that feedback provided by lecturers was useful. In line with the findings of Mualim, Ma’rufah & Sartika (2019) some students had difficulties in understanding the material since the lecturers only provided the materials and tasks without much instruction. For this reason, lecturers should encourage *collaboration* between them and the learners as well as among learners as a group. Besides, some students were affected by the technical problem of using their device in running the programme. The Internet network made it difficult for them to access Google Classroom and as a result submitting assignments and downloading the materials was seriously hampered.

Taking into consideration the fact that a majority of the participants in this study agreed they will recommend this method of learning to continue even after the period in question, academic stakeholders need to organise workshops to explain the ‘how’ of using online learning tools such as Google Classroom. Such workshops should explain how the “thoughtful use of Google Classroom might lead to improved teaching and learning outcomes (Heggart & Yoo, 2018). It is equally important that studies be conducted to investigate teachers’ perception of the effectiveness of Google Classroom as a tool of online teaching-learning.

6. Conclusion

The aim of this paper was to explore the University of Buea students’ perceptions of the effectiveness of Google Classroom. Our investigation covered a period of two months and ten days (March the 21st 2020 to May the 31st 2020) during which all learning was done online and Google Classroom was one of the most used online education tools. The study adopted Davis’ (1985) Technology Acceptance Model (TAM) as a basic

framework to explore relationships among perceived ease of use, perceived usefulness and users' satisfaction regarding Google Classroom. Results indicated that overall students were satisfied with Google Classroom and as such it was an effective online learning/teaching tool during the period in question. This finding is consistent with results of previous studies on learners' perceptions of the effectiveness of Google Classroom (Azhar & Iqbal, 2018) as well as on the application of Google Classroom as a tool for online education (Shaharane, Jamil, & Rodzi, 2016).

FUNDING

This research paper received no internal or external funding.

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