

Students' perception on using Google classroom for learning during COVID-19 outbreak

Viloshini Murugesan*

SMK Tun Perak, Muar, Johor, Malaysia

Dashaiyani Santhirasekaran

SJK(T) Ladang Mentakab, Pahang, Malaysia

viloshini12@gmail.com, dashaiyani@gmail.com

Received: 13 August 2020; **Accepted:** 30 June 2021; **Published:** 30 June 2021

To cite this article (APA): Murugesan, V., & Santhirasekaran, D. (2021). Students' perception on using Google classroom for learning during COVID-19 outbreak. *AJELP: Asian Journal of English Language and Pedagogy*, 9(1), 92-101. <https://doi.org/10.37134/ajelp.vol9.1.8.2021>

To link to this article: <https://doi.org/10.37134/ajelp.vol9.1.8.2021>

Abstract: This study aimed to investigate the students' perception of using Google classroom and the challenges they faced during the COVID-19 Pandemic lockdown. This researcher used quantitative approach; the instrument used for survey is questionnaire and was prepared by Google Form and distributed via social media such as Telegram, Facebook and Whatsapp. Sample for the study comprised of 133 secondary school students from a district in Johor. The students were 13-17 years old with intermediate English language proficiency. The findings revealed that the students find Google classroom was easy and convenient to use. However, the findings indicated that they lack knowledge of the usefulness of the features. The instability of internet connection and financial issue in paying for the internet connection were challenges reported by the students and these issues affect the implementation of the online teaching and learning process. The findings from this study are important for both teachers and stakeholders in implementing and enhancing Google classroom learning in schools. Evidently, the students accept the online learning positively, however considerations on the effectiveness of the implementation of Google classroom is required and conflicts related to internet connection need to be addressed.

Keywords: e-learning, online learning, digital learning, COVID-19, Google classroom

INTRODUCTION

People worldwide anticipated lifestyle shifts due to the COVID-19 Pandemic. Teachers have to take learning into the digital platform such as the virtual classroom. It is crucial to ensure students could continue their learning from home with any digital platform or social media. Google Classroom is a nonpaid virtual classroom application used for learning by teachers and learners.

Bebell and Kay (2010) feel that Google classroom is one of the best instruments to enhance teaching and learning. Thus, exploring Google classroom learning from learners' point of view is important because it is the primary source of information on their perceptions and these

perceptions are based on their own learning experiences from the virtual classroom participation. A Google Classroom provides more skilled and realistic technology for use in learning environments as Google apps reflect a large portion of cloud-based corporate communications platforms used by the workforce (Mary, 2014; Haggart & Yoo, 2018; Manan & Hanafi, 2019; Salam, 2020; Batubara, Hamdani & Paderan, 2021). Google Classroom is another program that Google Inc. offers and it is used as an online educational platform. Google Classroom is very simple to set up, allowing teachers to create courses, distribute assignments, post ads, submit reviews and upload student materials for viewing. When students hand in their assignments, the teacher can provide instant constructive feedback or results for assessments given.

In today's web-connected learning environments, Google classroom gives access to learning materials that are appealing and easy to use (Janzen, 2014; Haggart & Yoo, 2018; Manan & Hanafi, 2019; Salam, 2020; Batubara, Hamdani & Paderan, 2021). Crawford (2015) highlighted that Google Classroom is making interactive learning simpler. Teachers can upload materials and provide students with input. Students can also upload materials and make personal comments. In addition, the students will collaborate with each other. We are able to exchange their documents and tasks and therefore create the best assignment. This study intends to find out the students' perception of using Google classroom to learn the English language during the pandemic lockdown period.

The use of technology for learning has both advantages and disadvantages. Students might improve their language and content knowledge with the use of the digital platform (Lai & Li, 2011; Liu, Navarrete, & Wivagg, 2014; Haggart & Yoo, 2018; Manan & Hanafi, 2019; Salam, 2020; Batubara, Hamdani & Paderan, 2021) and increase their participation in learning (Billings & Mathison, 2012). However, some studies suggest that learners also need to learn how to use technology and able to use it wisely for learning (Liu et al., 2014; Andrei, 2017).

McCombs (2012) stated that learners who are allowed to be autonomous and to make important academic choices will have more control over their learning and thus create a sense of accountability for learning. Being independent throughout their process of learning is good because it makes the learners more self-reliant and responsible instead of always depending on the teacher's help. This is crucial to create 21st-century students who are globally competitive. Learning through Google classroom is not only efficient but it also helps to improve student's language skills and proficiency. Although there are studies reported that virtual classrooms could enhance the students' learning, but there are still some constraints compared to the traditional way of learning which is using a textbook or hardcopy materials for learning.

Past studies in computer-supported cooperative learning (CSCL) have shown that digital platforms could enhance group discussion and make it possible where it was not previously. Therefore, this study would like to explore students' perception on the use of Google classroom for English language learning and the challenges faced by them.

LITERATURE REVIEW

The incorporation of ICT in teaching is increasing rapidly. Studies illustrate the multimodal rise in emerging technology in literacy production and development which allows students to connect widely with contexts beyond traditional classroom walls (Lankshear & Knobel, 2008; Coman, Tiru, Mesesan-Schmitz, Stanciu & Bularca, 2020; Sari, 2020; Kawinkoonlasate, 2020).

Web 2.0 technologies have been significant in the educational systems for more than a decade to facilitate curriculum design, enrich pedagogical material and improve the network between teachers and students. Google is a popular Web 2.0 platform which is offering many

interesting applications and facilities. This software is readily available and functional in all face-to-face learning settings as well as in a completely online environment for educators and students.

With the advance development of technology in teaching and learning, many models have emerged. One of the models is the Technology Acceptance Model (TAM) which was used in this study. TAM was created by Davis in 1989. This model seeks to forecast the acceptance of a tool and indicate the changes that must be made to the system for it to be acceptable to users. The actual methodology utilized has two primary components: perceived ease of use (PEOU) and perceived usefulness (PU). The degree to which a person feels that using a system would improve his performance is characterized as perceived usefulness. The degree to which a person feels that using a system will be simple is referred to as perceived ease of use. Many studies have adopted TAM in conducting their research on learners' acceptance of online learning.

Apart from that, considerable number of studies on the usage of online learning have been conducted. The studies on online learning such as google classroom have reported various advantages, including easier access to learning materials, easier to get feedback, increased communication, increased motivation (Haggart & Yoo, 2018; Manan & Hanafi, 2019; Salam, 2020; Batubara, Hamdani & Paderan, 2021).

In the Malaysian context, online learning has been dominating the teaching and learning process since 2020 when the COVID-19 Pandemic crisis occurred. Google classroom has been used as the main online tool to conduct classes at the primary and secondary level.

Despite the advantages of technology in enhancing teaching and learning, some researchers argued that there are a lot of disadvantages to online learning. One of the drawbacks is the effect on health when both teachers and students spent an extensive amount of time using a laptop or other electronic device (Coman, Tiru, Mesesan-Schmitz, Stanciu & Bularca, 2020; Sari, 2020; Kawinkoonlasate, 2020). The amount of time spent using devices can affect their eyesight and posture. Another drawback is that some students ignore online learning, and some of them have real excuses such as they do not have computers and Internet connection and some students lack computer skills (Coman, Tiru, Mesesan-Schmitz, Stanciu & Bularca, 2020; Sari, 2020; Kawinkoonlasate, 2020). Another online learning problem is cheating. Teachers cannot control how students do their tasks as they can use whatever source they want. Google Classroom is relatively new in our government schools, so this research that explored the challenges in the implementation of Google Classroom is important in learning the challenges or tensions faced by teachers and students in the teaching and learning of the English Language.

Based on past literature, Google classroom undoubtedly gives a better language learning experience. However, it was also found that there were some challenges to use Google classroom for learning. Hence, this research aimed to find out the students' perception in using Google classroom in this critical period as schools are all closed down and teachers are left with no other options than carrying out online learning using different digital platforms.

METHODOLOGY

This study employed a quantitative research design in which a survey is used to find out secondary students' perception of using Google Classroom for learning during the lockdown period due to the COVID-19 Pandemic. The samples of this study were 133 secondary students from Form 1 to Form 5. The questionnaires were distributed via social media such as Telegram and Whatsapp to the targeted group of respondents. The sampling method is simple random sampling.

The questionnaire was a five-type Likert scale, adapted from Al-Marroof & Al-Emran (2018). The questionnaire comprises three sections; Section 1 aimed to collect demographic information, section 2 focused on students' perception of using Google classroom for learning and section 3 gathered students' challenges during the online learning experience. In the context of students' perceptions, the Technology Acceptance Model (TAM) model was used whereby students' perception can be classified into three factors. Those factors included: the perceived usefulness (PU), the perceived ease of use (PEOU), and the students' behavior towards its usage. The items used for this study were adapted with further modification to fit this study.

FINDINGS AND DISCUSSION

Students' Perception on using Google Classroom

The data portrayed that a majority of the respondents; 58 (43.6%) agreed and strongly agreed that Google Classroom enhances their learning productivity, however, 53 (39.8%) respondents chose neutral/not sure for the same item. In addition, there was a large number of respondents 61 (45.9%) who chose not sure/neutral for Google Classroom does not have any distinctive useful features, which reflect a certain level of neutrality or undecidedness to the statement. This shows that students need more Google Classroom training and exposure as many respondents do not have sufficient knowledge or exposure towards it. Apart from that, 79 (59.1%) agreed that Google Classroom could save their time. Evidently, the students perceived usefulness positively but the exposure and implementation may pose some challenges to the students.

Table 1: Perceived usefulness items

No	Items	SD	D	NS	A	SA
1	Google Classroom enhances my learning productivity.					
	F	5	17	53	36	22
	%	3.8	12.8	39.8	27.1	16.5
2	Google Classroom enables me to accomplish tasks more quickly.					
	F	4	10	54	40	25
	%	3.0	7.5	40.6	30.1	18.8
3	Google Classroom improves my performance.					
	F	5	19	55	34	20
	%	3.8	14.3	41.4	25.6	15.0
4	Google Classroom saves my time.					
	F	6	9	39	35	44
	%	4.5	6.8	29.3	26.3	33.1
5	Google Classroom doesn't have any distinctive useful features.					
	F	11	28	61	21	12
	%	8.3	21.1	45.9	15.8	9.0

In terms of perceived ease of use; the related items were tabulated as in table 2. Based on item no 6, a majority of the respondents, 109 (81.95%) agreed and strongly agreed that it is

easy to use Google Classroom. Apart from that, 92(69.1%) respondents also agreed and strongly agreed to item no 7, which makes teaching and learning more effective, more enjoyable, and helps the students to be more competent and independent. Besides that, only 10.5% of respondents strongly disagreed and disagreed that Google classroom allows them to submit their assignments on time. It can be interpreted as students feel that Google Classroom helps them in submitting the assignment as Google Classroom can save their time and effort while doing and submitting the assignment electronically.

Table 2: Perceived ease of use

No	Items	SD	D	NS	A	SA
6	Google Classroom is easy to use.					
	F	5	8	11	50	59
	%	3.8	6.0	8.3	37.6	44.4
7	Google Classroom is convenient and user-friendly.					
	F	3	12	26	46	46
	%	2.3	9.0	19.5	34.6	34.6
8	Google Classroom allows me to submit my assignment on time					
	F	4	10	35	41	43
	%	3.0	7.5	26.3	30.8	32.3

In this section, behavior towards the usage of Google Classroom can be observed. For item no 9, 49.6 % (66) respondents agreed to increase their usage of Google Classroom. This shows that students also identified that the use of Google Classroom could provide a conducive and positive learning environment. On the other hand, only 20.3% respondents disagreed and strongly disagreed to increase using Google Classroom. This indicates that students preferred the learning environment to be more comfortable as it allowed them to communicate creatively and to concentrate more on learning experiences as well.

Table 3: Behavior intention to use

No	Items	SD	D	NS	A	SA
9	I intend to increase my use of the Google Classroom.					
	F	6	13	48	43	23
	%	4.5	9.8	36.1	32.3	17.3
10	It is worth to recommend the Google Classroom for other students.					
	F	8	14	45	35	31
	%	6.0	10.5	33.8	26.3	23.3
11	I'm interested to use the Google Classroom more frequently in the future.					
	F	8	19	38	36	32
	%	6.0	14.3	28.6	27.1	24.1

Challenges

The last four items of the questionnaire were the question about the challenges in using Google Classroom. Based on the data, 71 (53.4%) said that poor network hindered them from submitting their work on time. While 51 (38.4%) students reported that lack of money to buy data for the internet connection is an issue to them. The poor internet connection and financial

issue are two main issues that affect students to effectively and conveniently use Google Classroom as a digital tool. In addition, 42 (31.6%) of the respondents said that they do not have Wi-Fi at home. Besides that, 63.2% disagreed with the statement that they do not have personal computers or smart phones to join the Google classroom lessons. This shows that the students do not face many challenges as they own personal computers or smartphones to join Google Classroom. They also have a Wi-Fi connection at home but sometimes the network was poor.

Table 4: Challenges faced by the students

No	Items	SD	D	NS	A	SA
12	Poor network hinders students from submitting their work on time.					
	F	11	18	33	29	42
	%	8.3	13.5	24.8	21.8	31.6
13	Lack of money to buy data affects my active participation in the Google classroom learning.					
	F	21	22	39	23	28
	%	15.8	16.5	29.3	17.3	21.1
14	I don't have Wi-Fi at home.					
	F	59	14	18	8	34
	%	44.4	10.5	13.5	6.0	25.6
15	I don't have Personal Computer or a Smart Phone to use and join the Google classroom.					
	F	67	17	22	6	21
	%	50.4	12.8	16.5	4.5	15.8

Discussion

Based on the results of students' perception on the usefulness of Google Classroom, students chose not sure/neutral for item no 5 that refers to the statement Google Classroom does not have distinctive useful features, which reflects a certain level of neutrality or indecisiveness to the statement. This showed that students need more Google Classroom training and exposure as many respondents do not know how to use it effectively. According to Azhar and Iqbal (2018) who stressed the interface of Google Classroom is not viewed as user-friendly and teachers should play the role to familiarize their students with the platform. Apart from that, the result of this survey showed that students disagreed that Google classroom could save their time. The researcher found that students' perception of the usefulness of Google classroom is the core factor of their behavioral intention to use Google classroom for learning during the lockdown period.

Based on table 2, although the majority of respondents agreed and strongly agreed to item no 6 whereby Google Classroom is easy to use, however many stated that they are unsure whether Google classroom improves their performance.

Based on the study it was found that students believed Google classroom was easy to use, convenient, and user-friendly, which makes teaching and learning more effective, more enjoyable, and helps the students to be more competent and independent. The findings were also supported by Woodrich and Fan (2017) who stated that Google Docs is a prominent tool for cooperative learning and was appreciated by the students. This result also aligned with the findings of other researchers (Mafa, 2018; Nizal et al., 2016) who reported that Google classroom improved teaching and learning. However, poor network hinders students from using Google Classroom effectively.

Based on table 3, item no 9 shows that students might prefer other digital platforms such as social media to learn. As stated by Levin (2011), learning via social media applications can be relevant and meaningful. However, half of the respondents agreed and strongly agreed to item no 9, this could be due to the efficiency of online learning, which enables students to access resources easily (Zeiadee, 2019). The fact that the students in this study were not sure/neutral to item no 9 was caused by the inaccessibility of the internet and lack of technology awareness. The result of this study is aligned with the findings shared by Hosam et al. (2019) who found that students' positive perception towards e-learning was a key factor boosting their satisfaction with e-learning continuity.

Moreover, the findings of the study showed that there were some challenges to carry out Google classroom learning due to students' financial factors as reported by previous study by Almaini (2013). They do not own a personal computer or smartphones to join Google classroom. Apart from that, students do not own a Wi-Fi connection at home and with poor network, students found it difficult to learn online. Students could not go to their nearest local library to access free Wi-Fi as it was a lockdown period. In this case recorded lessons by the teachers could be an alternative for students who cannot attend online live lessons (Kearns, 2012). Learning from home using Google classroom during the Covid-19 lockdown seemed to be challenging for some students. Google classroom usage was not prominent enough, as students answered neutral/not sure for items like Google classroom improves their performance and enables them to accomplish their tasks quickly. The teacher can provide guidance and coaching for students to overcome the challenges and be independent learners (Parvin and Salam, 2015). According to Croft et al. (2015) it is vital to understand students' learning preferences and style to carry out successful online lessons. In addition, the problems faced by the students must be acknowledged to carry out successful online lessons (Haggart & Yoo, 2018; Manan & Hanafi, 2019; Coman, Tiru, Mesesan-Schmitz, Stanciu & Bularca, 2020). The students should not be left out or isolated (Croft, 2015; Coman, Tiru, Mesesan-Schmitz, Stanciu & Bularca, 2020) due to external factors which were not in their control. Appropriate coaching and guidance (Lake, 1999) is needed to solve the problem by introducing a degree of personal contact between teacher and students (Croft, 2015)

CONCLUSION AND RECOMMENDATION

The results were mixed data of not sure/neutral and agreement to the items in perceived usefulness, perceived ease of use, and behavior intention to use. However, there were still a considerable number of the respondents facing problems such as they do not have the device or internet connection due to poor economic status. Even though there are many benefits of Google classroom learning can be seen through past studies, the opportunity for autonomous learning using Google classroom is still minimal in the context of the secondary school students in this study.

The researcher recommends teachers to take time to familiarize and utilize Google Classroom in their teaching as we could see students' perception of using Google Classroom is mixed, more of a balanced of not sure and agreement but there were no strong disagreements. Students can take more time learning, in their own space in Google Classroom as they have the opportunity to learn and comprehend ideas effortlessly without a push.

The study provided crucial information to teachers, school administrators, Malaysian researchers, and the ministry of education to explore further how students perceived the use of Google classroom to learn English during the pandemic lockdown. Moreover, the teachers, high authorities of the school, and the Ministry of Education should come together to find a solution to curb the four challenges mentioned by the students. For instance, there were several

students who do not own any gadgets or devices for online learning and do not have Wi-Fi connection. The Ministry of Education should conduct further research in providing cost-efficient devices for underprivileged students to be able to join the virtual classrooms. Teachers play the major role in Google classroom as a facilitator. The future researcher may study teachers' perceptions in using Google classroom for learning and the challenges faced by them.

REFERENCES

- Adams, D. C. (2008). Gage for Google in the twenty-first century advanced placement language classroom. *Journal of Educational Strategies, Issues and Ideas*, 82(2), 96-100.
- Ajjan, H.; Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*, 11(2), 71-80. doi: 10.1016/j.iheduc.2008.05.002.
- Alebaikan, R., & Troudi, S. (2010). Blended learning in Saudi universities: challenges and perspectives. *ALT-J*, 18(1), 49-59.
- Al-Kathiri, F. (2015). Beyond the Classroom Walls: Edmodo in Saudi Secondary School EFL Instruction, Attitudes and Challenges. *English Language Teaching*, 8(1), 189-204.
- Allport, D., Antonis, B. & Reynolds, P. (1972) On the Division of Attention: a disproof of the single channel hypothesis, *Quarterly Journal of Experimental Psychology*, 24, 225-235.
- Almaini, Y. (2013). Issues in integrating information technology in learning and teaching EFL: The Saudi Experience. *Merit Search Journal of Education and Review*, 1(5), 107-111.
- Al-Marooif, R.A.S., & Al-Emran, M. (2018). Students' acceptance of Google classroom: an exploratory study using PLS-SEM approach. *International Journal of Emerging Technologies in Learning (IJET)*, 13(6), 112 -123.
- Azhar, K.A. & Iqbal, N. (2018). Effectiveness of google classroom: teachers' perceptions. *Prizren Social Science Journal*, 2(2), 32-66.
- Batubara, M.D., Hamdani, Z., Paderan, M.P. (2021). Google classroom: A learning media in increasing students' motivation. *Indonesia Journal of Learning Education and Counseling*, 3(2), 164-169.
- Bolger, B., Rowland, G., Reuning-Hummel, C., & Codner, S. (2011). Opportunities for and Barriers to Powerful and Transformative Learning Experiences in Online Learning Environments. *Educational Technology*, 51(2), 36-41.
- Chandler, P., & Sweller, J. (1996). Cognitive load while learning to use a computer program. *Applied cognitive psychology*, 10(2), 151-170.
- Coman, C., Tiru, L.G., Mesesan-Schmitz, L., Stanciu, C. & Bularca, M.C. (2020). Online teaching and learning in higher education during coronavirus pandemic: students' perspective. *Sustainability*, 12, 1-24.
- Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *Internet and Higher Education*, 15(1), 3-8.
- Dolidze, T. Effects of distance learning on English language learning. *Procedia – Social and Behavioral Sciences* 70, 1438 – 1441.
- Gagne, R. M. (1984). Learning outcomes and their effects: Useful categories of human performance. *American psychologist*, 39(4), 377.
- Garcia, A., Kelly, M. R., & Stamatis, K. (2020). When technology goes unnoticed: teacher beliefs and assumptions about technology use in three 9th grade English

- classrooms. *Pedagogies: An International Journal*, 1-22.
- Geertsema, J. (2014). Technology and the role of the teacher. *CDTL Brief*, 17(1), 2–3.
- Govindasamy, T. (2001). Successful implementation of e-learning: Pedagogical considerations. *The internet and higher education*, 4(3-4), 287-299.
- Greenhow, C., & Halverson, E. R. (2011). Do social networking technologies have a place in formal learning environments? *On the Horizon* 19(1), 62-67.
- Grenier-Winther, J. (1999). Real Issues in the Virtual Classroom. *The French Review*, 73(2), 252-264.
- Iftakhar, S. (2016). Google classroom: what works and how. *Journal of Education and Social Sciences*, 3(1), 12-18.
- Heggart, K.R., & Yoo, J. (2018). Getting the most from google classroom: A pedagogical framework for tertiary educators. *Australian Journal of Teacher Education*, 43(3), 140-153.
- Islam, M. S. (2019). Bangladeshi University Students' Perception about Using Google Classroom for Teaching English. *International Journal of Psycho-Educational Sciences*, 57-65.
- Joaquim, G. (2013). Web-based language class activities: contexts of uses and background methodologies. *Procedia-Social and Behavioral Sciences*, 83, 117-124.
- Kawinkoonlasate, P. (2020). Online language learning from Thai EFL learners: An analysis of effective alternative learning methods in response to the Covid-19 outbreak. *English Language Teaching*, 13(12), 15-26.
- Kearns, L. R. (2012). Student assessment in online learning: Challenges and effective practices. *Journal of Online Learning and Teaching*, 8(3), 198.
- Manan, N.Z.A. & Hanafi, H.F. (2019). Google classroom: students' acceptance using UTAUT model. *Journal of Applied Arts*, 1(1), 64-72.
- Manca, S., & Ranieri, M. (2013). Is it a tool suitable for learning? A critical review of the literature on Facebook as a technology-enhanced learning environment. *Journal of Computer Assisted Learning*, 29(6), 487–504.
- Martin, F., & Parker, M. A. (2014). Use of synchronous virtual classrooms: Why, who, and how. *MERLOT Journal of Online Learning and Teaching*, 10(2), 192-210.
- Michelle Selinger (2001) Learning information and communications technology skills and the subject context of the learning, *Journal of Information Technology for Teacher Education*, 10:1-2, 143-156.
- Nicholas Croft, Alice Dalton & Marcus Grant (2010) Overcoming Isolation in Distance Learning: Building a Learning Community through Time and Space, *Journal for Education in the Built Environment*, 5(1), 27-64
- Parvin, R. H., & Salam, S. F. (2015). The effectiveness of using technology in English language classrooms in government primary schools in Bangladesh. *Forum for International Research in Education*, 2 (1), 47-59.
- Peck, C., Hewitt, K. K., Mullen, C. A., Lashley, C. A., Eldridge, J. A., & Douglas, T. R. M. (2015). Digital youth in brick and mortar schools: Examining the complex interplay of students, technology, education, and change. *Teachers College Record*, 117(5), 1-40.
- Salam, U. (2020). The students' use of google classroom in learning English. *Jurnal Pendidikan Indonesia*, 9(4), 628-638.
- Sari, I.F. (2020). Online learning for English language teaching. *Jurnal Pendidikan dan Pembelajaran*, 1(2), 216-230.
- Song, L., & Hill, J. R. (2007). A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning*, 6(1), 27-42.

- Underwood, J. & Underwood, G. (1990) *Computers and Learning: helping children acquire thinking skills*. Oxford: Blackwell.
- Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British journal of educational technology*, 43(3), 428-438.
- Webster, J. & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *Academy of Management Journal*, 40(6), 1282-1309.
- Woodrich, M., & Fan, Y. (2017). Google Docs as a tool for collaborative writing in the middle school classroom. *Journal of Information Technology Education: Research*, 16, 391-410.
- Zaidieh, A. (2012). The Use of Social Networking in Education: Challenges and Opportunities. *World of Computer Science and Information Technology Journal (WCSIT)*, 2(1), 18-21.
- Zhou, W., Simpson, E., & Domizi, D. P. (2012). Google Docs in an out-of-class collaborative writing activity. *International Journal of Teaching and Learning in Higher Education*, 24 (3), 359-375.