

Student Acceptance of Google Classroom Learning Management System Among Form Six Economics Students

Noornadiah Md Sari^{1,2}, *Khoo Yin Yin^{1,*}, Zainizam Zakariya¹

¹ Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia

² SMK Datuk Bendahara, Melaka

Article Info	ABSTRACT
<p>Article history: Received: 7 January 2022 Revised: 30 January 2022 Accepted: 19 March 2022 Published: 1 April 2022</p>	<p>The pandemic is forcing educators to transform their existing approach to digital learning. The Ministry of Education Malaysia aspires to acclimate to the present changes by enhancing the quality of the existing education system to digital education by endowing technology integration. One of the measures submitted is the innovation of the delivery methods assisted by the Google Classroom Learning Management System at the school level. Nevertheless, past studies have concentrated more on students in public institutes of higher learning. Hence, this research aimed to identify students' perceptions of the existing economics learning methods and evaluate the acceptance of Google Classroom among Form Six economics students. This survey study adopted questionnaire instruments distributed to 206 students in Malacca using randomly selected respondents from the cluster. Descriptive analysis using the mean and standard deviation was used to report student acceptance of Google Classroom. This study confirmed that students perceived economics subjects as complex, but they acknowledged that technology could enhance learning activities. Summary of the data analysis recorded that student acceptance was moderately high. This analysis contributes to the school administrators, teachers, and students to devise advancements in the existing delivery methods in schools. This research is prevalent in the current learning atmosphere that demands evolution over previous learning approaches. The researcher recommends experimental investigations to assess the effectiveness of using Google Classroom on student achievement and perform a Differential Item Functioning (DIF) to evaluate the tendency of respondents who have similar characteristics and abilities to an item.</p>
<p>Keywords: Google Classroom, E-learning, Economics Education, Acceptance, Unified Theory of Acceptance and Use of Technology (UTAUT) model</p>	

Corresponding Author:

* Khoo Yin Yin

Faculty of Management and Economics, Sultan Idris Education University,
35900 Tanjong Malim, Perak Darul Ridzuan, Malaysia.

Email: khoo@fpe.upsi.edu.my

INTRODUCTION

The expansion of the Internet of Things (IoT) in Industrial Revolution 4.0 demands a transformation in all aspects of life today. Along with the current growth, the field of education also necessitates such change. Therefore, the Ministry of Education Malaysia (KPM) strives to adapt to the current Education 4.0 changes by enriching the quality of the existing education delivery towards digital education with technology integration (KPM, 2013). Preliminary analyses established that learning aided with technology positively moved to learn (Khoo et al., 2019; Sidhu et al., 2019). KPM has introduced VLE Frog to educators in phase one of the 1BestariNet Service Project (Noryazida et al., 2019). The KPM has also issued a guideline to allow students to bring personal devices to school to boost the execution of Virtual Learning Environment (VLE) (KPM, 2018). Nonetheless, the Auditor General's report (2018) discovered that the use of VLE Frog was low at around 11.5% to 31.3% compared to the total population of existing educators. Next, to improve the previous method, Google Classroom learning management system was introduced in the second phase of the 1BestariNet Services Project starting in July 2018 (KPM, 2019a). It confirms a substantial dedication to enhancing the existing education system to be on par with the developed countries.

Google launched Google Classroom in May 2014 for educational purposes (Iftakhar, 2016). Statistical reports registered that the number of users in Malaysia is the second highest globally out of 64 registered countries, surpassing the number of users from the United States, Hong Kong, Singapore and Canada (Google Trend, 2022). It substantiates that the educators in Malaysia welcome the Google Classroom medium. Its use obtained prevalent attention during the outbreak of COVID-19 since the beginning of 2020. In the face of the crisis, most educational institutions had to be closed in mid-March 2020, which compelled students to study online at home (Malkus et al., 2020). A similar situation also transpired in Malaysia, resulting in KPM announcing a shift in the school period and the public examination date being postponed to a new date. To overcome the limitations, KPM inspires educators to enforce online teaching and learning to ensure that the planning and learning syllabus can be implemented as best as possible (KPM, 2020b). The implementation of teaching transpires based on the teacher's initiative, such as distributing materials and teaching using Telegram and Whatsapp (Mohd Razali et al., 2021). Nevertheless, the application was not created particularly to learn management compared to the Google Classroom application.

Even in mid-June 2020, after the school opens, KPM, through the School Reopening Guidelines 2020, still fosters the concept of "home-based learning" and expresses support for educators to implement online learning (KPM 2020a). This circumstance symbolises a new norm in Malaysia's educational climate in the post-COVID-19 phase and should continue. In addition, several researchers have proven that blended or hybrid learning methods with the help of Google Classroom effectively enhance thinking skills (Sulisworo et al., 2020), student satisfaction (Shaharaneet et al., 2016), student engagement (Abazi-Bexheti et al., 2018) and the attitude of students toward a subject (Wan Alia Athira et al., 2019; Noornadiah et al., 2021). It provides an opportunity to help economics teachers improve the quality of teaching and, in turn, enhance student academic achievement. This method is appropriate for economics students in Form Six because, according to Adams et al. (2020), students under the age of 20 tend to interact with peers through the medium of learning management system and group learning compared to other age groups students. Learning with the help of the Google Classroom learning management system is a virtual classroom learning concept created to promote the learning process and support the existing teaching methods. The benefits of employing Google Classroom are that it can save costs (Zakaria et al., 2020), offers ease of information access (Dash, 2019; Memon et al., 2019), facilitates management of learning materials (Abazi-Bexheti et al., 2018; Priyaadharshini & Vinayaga Sundaram, 2018) and stimulates interaction (Hidayat et al., 2019).

LITERATURE REVIEW

Consequently, consumer acceptance of new technology needs to be considered to ensure the effectiveness of using the technology (Beaumont, 2018; Ghazal et al., 2018; Saroia & Gao, 2018; Zulfikar et al., 2019). Since the introduction of the Google Classroom application, many researchers have explored user acceptance of Google Classroom (Al-marooof & Al-emran, 2018; Kumar & Bervell, 2019; Nor Zanira & Hafizul, 2019; Kumar et al., 2020). Al-marooof and Al-emran (2018) and Kumar et al. (2020) approved that the principal acceptance of Google Classroom is due to the usage factor and ease of use. Nonetheless, past studies have concentrated more on students in public institutes of higher learning (Abazi-bexheti et al., 2018; Pratama, 2021). Nevertheless, the initial deductions discovered that Google Classroom is efficacious at the tertiary level, but the maturity aspect of pre-university students is different. The students are transitioning from school to the tertiary level. Furthermore, Google Classroom is still fresh in Malaysian education. Thus, one should consider the aspect of student acceptance of this application. Based on the Unified Theory of Acceptance and Use of Technology (UTAUT), individual acceptance of new technology is based on four predominant factors, namely performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003), as described in Table 1. This preliminary survey strived to identify the acceptance of Google Classroom-assisted learning among Form Six economics students.

Table 1: Student Acceptance Factors Towards Google Classroom

Factors	Description
Performance Expectancy	Performance expectancy is a level of student confidence that the use of Google Classroom helps them improve performance.
Effort Expectancy	Effort expectancy refers to Google Classroom facilities
Social Influence	Social influence is defined as an individual's belief in a stakeholder that drives the individual to use Google Classroom.
Facilitating Conditions	Facilitating conditions happen when a student believes that technical infrastructure exists to support using a Google Classroom system or environment.

Source: Nor Zanira and Hafizul (2019)

METHODOLOGY

This survey was conducted using a quantitative approach to assess student acceptance of the use of Google Classroom. The sample of this study concerned 206 Form Six economics students selected through random selection from the cluster at national secondary schools in Malacca. The school was selected from heterogeneous samples with characteristics similar to the population. Each selected school had the exact characteristics of Form Six students who enrolled in the economics stream using the same economics syllabus. Besides, the students involved were eligible to be registered as school candidates. The questionnaire instrument used in this study was modified from Mohd Paris and Saedah's (2016). Before the questionnaire was distributed, the researcher went through several procedures by requesting permission from specific parties; Letter of permission from Graduate Studies Institution, Universiti Pendidikan Sultan Idris, Education Policy Planning and Research Division, Ministry of Education Malaysia, Malacca State Education Department and school principals. Permission from the relevant parties was imperative for the researchers to enter the government premises, specifically the schools. Part A consisted of demographics, part B presented students' perceptions of economic learning methods (7 items), part C addressed performance expectancy (12 items), part D deliberated effort expectancy (8 items), part E acknowledged social influence (12 items) and part F discussed facilitating conditions (6 items). In an attempt to make it more comfortable for

respondents to express the level of agreement, a five-point Likert scale was used in this study instrument. Descriptive analysis using mean and standard deviation was used to report student acceptance of Google Classroom. The data were coded first before the data analysis process was carried out using Statistical Package for Social Science (SPSS) software.

RESEARCH FINDINGS

Demographics of respondents

The demographic profile distribution of study participants is shown in Table 1, consisting of gender, ethnicity, the number of devices owned, experience using the devices and frequency of internet use. The number of female students (68.9%) was more than male students (31.1%). While as for the distribution by ethnicity, the Chinese students was 64.1%, followed Malay (31.6%), India (4.4%) and others. Regarding the number of devices owned, the majority had a range of 1-2 devices (72.6%), followed by three to four devices (13.1%), while those who owned more than four devices were 10.7%. The distribution of usage experience discovered that 48.1% (99 people) had experience using the devices ranging from four to seven years, followed by the experience of more than seven years (41.7%) and less than four years (10.2%). Of the total study participants, 48.6% allocated one to six hours on internet usage per day, 40.3% seven to 12 hours per day and the rest spent over 12 hours per day (11.2%).

Table 1: Demographic Profile of Respondents

Demographics	Respondent	Percentage (%)
Gender		
Female	142	68.9
Male	64	31.1
Ethnicity		
Malay	65	31.6
Chinese	132	64.1
Indian	8	4.4
Others	0	0
Number of Devices Owned		
No	0	0
1-2	157	76.2
3-4	27	13.1
More than 4	22	10.7
Experience Using the devices		
0-3 years	21	10.2
4-7 years	99	48.1
More than 7 years	86	41.7
Frequency of Internet Use (Per Day)		
1-6 hours	100	48.6
7-12 hours	83	40.3
More than 12 hours	23	11.2

Students' perceptions of economics learning

Table 2 reported the findings of a descriptive analysis of students' perceptions of economics learning. The results of the data analysis discovered that Form Six economics students had a positive perception

of the use of technology in learning when item 6 “*I believe the use of technological equipment helps improve economic learning activities,*” recorded a high mean value (M = 4.11, SD = 0.93). In addition, students were comfortable studying with friends to solve economics questions based on item 3 “*I tend to ask friends if I have economic learning problems*”, registered the highest level of agreement (M = 4.21, SD = 0.89). Nonetheless, this study confirmed that students perceived economic learning as tricky and disagreed if economic learning only depended on the reference book. It is evident the mean score of item 1, “*Economics is an easy subject*” (M = 3.30, SD = 1.00) and item 2, “*I am comfortable studying economics with the help of only reference books*” (M = 3.32, SD = 1.01) was low compared to other items.

Table 2: Students’ Perceptions of Economics Learning

No.	Statement	Mean	Standard Deviation
1.	Economics is an easy subject.	3.30	1.00
2.	I am comfortable studying economics with the help of only reference books.	3.32	1.01
3.	I tend to ask friends if I have economics learning problems.	4.21	0.89
4.	I tend to revise the topic of economics learning at home.	3.87	0.96
5.	I love to use technological equipment in my economics learning.	3.83	1.00
6.	I believe the use of technological equipment helps to enhance economics learning activities.	4.11	0.93

The acceptance of economics students toward Google Classroom assisted learning

Table 3 reported the analysis of student acceptance of economics learning among Form Six students. The overall mean score of each item was recorded between 3.02 to 3.61. Nunally and Bernstein (1994) noted that the mean value 3.01 to 4.00 was considered moderately high. Summary of the data analysis reported that the level of student acceptance was moderately high (M = 3.40, SD = 0.72). Based on the comparison of the mean of Google Classroom acceptance factor, the facilitating conditions recorded the highest mean value (M = 3.61, SD = 0.87) while the social influence factor recorded the lowest mean value (M = 3.02, SD = 0.93).

Table 3: The summary of Google Classroom Assisted Learning Acceptance Level Analysis

Factors	Mean	Standard Deviation	Level
Performance Expectancy	3.45	0.90	Moderately high
Effort Expectancy	3.53	0.83	Moderately high
Social Influence	3.02	0.93	Moderately high
Facilitating Conditions	3.61	0.87	Moderately high
Acceptance (Overall)	3.40	0.72	Moderately high

In addition, Table 4 shows an analysis summary of the acceptance survey of the use of Google Classroom. The entire items recorded a mean score value between 2.71 to 3.72. Most items recorded moderate-high mean score values (M > 3.02). Item E11 “*I have the appropriate device to use the Google Classroom application*” reported the highest mean value (M = 3.72, SD = 1.04). Nonetheless, social influence items recorded lower values (M < 3.01) compared to other items, namely item E8 “*Friends influenced me to use Google Classroom*” (M = 2.71, SD = 1.13).

Table 4: Percentage, Mean and Standard Deviation Analysis

Statement	SD (%)	D (%)	NS (%)	A (%)	SA (%)	Mean	Standard Deviation
Performance Expectancy							
E1 Google Classroom can help me learn economics.	7.8	17.5	34.5	37.7	12.6	3.20	1.11
E2 Google Classroom-assisted learning can be done anywhere at any time.	4.4	11.7	24.3	34	25.7	3.65	1.11
E3 Google Classroom helps me find information through the internet.	5.3	6.8	30.6	35.4	21.8	3.62	1.11
E4 Google Classroom helps me learn in groups.	5.8	14.1	36.4	29.1	14.6	3.33	1.07
Effort Expectancy							
E5 Google Classroom makes it easy for me to interact with friends.	7.3	12.6	34	29.6	16.5	3.35	1.12
E6 The skills in using devices make me proficient in using Google Classroom.	2.4	6.8	35.3	38.3	17	3.61	0.93
E7 The experience of using device tools makes it easy for me to use Google Classroom in learning.	2.9	7.3	32.5	39.8	17.5	3.62	0.95
Social Influence							
E8 Friends influence me to use Google Classroom.	18.9	18.9	40.3	15.5	6.3	2.71	1.13
E9 The school encourage the use of Google Classroom in learning.	7.8	9.7	44.2	24.8	13.6	3.27	1.06
E10 Economics teacher often helps me use Google Classroom.	11.2	13.1	41.3	25.2	9.2	3.08	1.09
Facilitating Conditions							
E11 I have the appropriate device to use the Google Classroom application.	4.4	4.9	31.1	33.5	26.2	3.72	1.04
E12 I have the knowledge to use Google Classroom.	7.8	9.7	29.1	34.5	18.9	3.47	1.14
E13 My friend is willing to help if I need help in using Google Classroom.	4.4	5.8	31.6	37.9	20.4	3.64	1.01

Note: SD= Strongly Disagree; D= Disagree; NS= Neutral; A=Agree; SA= Strongly Agree.

DISCUSSIONS

This research applied the Unified Theory of Acceptance and Use of Technology (UTAUT) to evaluate the acceptance of economics students towards Google Classroom. The descriptive analysis of the study confirmed that each student owned at least one to two devices equipped with the internet. This finding is supported by the Malaysian Communications and Multimedia Commission (MCMC) (2018) statistics because the majority of the internet, computer and mobile phone users are individuals aged 15 years old and above. Form Six students formed one of these user groups. Accordingly, the use of devices and the internet is familiar to them because most existing devices are currently equipped with internet service. Furthermore, most respondents lived in urban areas, making it easy for them to access internet facilities and coverage. Users spend about one to four hours a day surfing the internet using smartphones

and laptops (Malaysian Communications and Multimedia Commission, 2020b). The study results unearthed that students are familiar with the use of technology, so teachers need to be prudent to the current needs of students. Students demand unique motivations in learning that are interactive and feasible according to the current lifestyle.

The study's data confirmed that students disagreed with economic learning, which relies on reference books. Google Classroom is one of the alternatives for teachers to improve the existing education delivery methods due to its paperless use, ease of access, ease of material management and enhanced interaction (Kumar et al., 2020; Zakaria et al., 2020). Past findings have recorded that using Google Classroom learning management system for students in other countries is favourable (Al-Fraihat et al., 2019; Ventayen et al., 2018). According to Stavitskyi and Urazgaliyeva (2018), the introduction of the Google Classroom learning management system supports the increment of cognitive activity and inspires students to study economics. Further, the economic question of Malaysia Higher School Certificate applies the component of higher-order thinking skills, demanding students to achieve a high level in Bloom's taxonomy, namely the stage of applying, analysing, synthesising and creating (Jimaa, 2011). Majanja (2020) and Noornadiah and Khoo (2021) prove empirically that technology-assisted learning could improve students' self-efficacy. Self-efficacy factors will motivate individuals to strive despite difficult situations (Bandura, 1977). This situation aligns with economics students because they feel economic learning is taxing to grasp.

In this study, the prevalent acceptance of Google Classroom was an intermediate level for the Form Six level. Past research has also documented that Google Classroom acceptance is at an intermediate level (Fitriningtiyas et al., 2018; Kaviza, 2020). It demonstrates that Form Six economics students had a positive perception of technology in learning and should be implemented. Although Kumar et al. (2018) expressed that the constraints of current facilities caused the inefficient use of the previous learning management system, this analysis discovered that these factors were no longer a constraint to economics students. The facilitating conditions factor recorded a moderately high score. Device and internet constraints were not a factor in preventing the use of Google Classroom. Nevertheless, previous studies have indicated that performance expectancy factors (Venkatesh et al., 2003) and social influence had a more considerable influence on the use of technology (Decman, 2015). Whereas Zakaria et al. (2020), in particular, added that the effectiveness of using the Google Classroom application requires the support of experts and stakeholders. Local researchers approved that time constraint, a drawback of teacher initiative, lack of self-efficacy of users, teacher attitude and skills drive teachers to pay less attention to the use of learning management system (Hasliza et al., 2016; Nor Zaira et al., 2016). The findings of this study were in line with the data obtained by Ayaz and Yanartaş (2020) because the correlation coefficient of performance expectancy factors and social influence on the intention of use was higher than other factors. It establishes that performance expectancy and social influence factors further influence Form Six economics students to accept using Google Classroom in learning.

Hence, teachers and schools should be uplifted to use Google Classroom. Although some teachers might have the content expertise, several teachers, primarily the elderly, have difficulty using the technological applications (Correa & Pavez, 2016; Czaja et al., 2006). The appointment of technical expert teachers as support for subject teachers should be considered in technical problems. Intensive and systematic training should be enforced from time to time, primarily among novice and aged teachers. School administrators can work with the community colleges with ICT expertise by conducting in-service training. Teachers play a paramount role as the catalyst of change in the current learning climate following the mainstream evolutions (Alim et al., 2019).

CONCLUSION AND RECOMMENDATION

Ergo, this study confirmed that the economics students were ready to accept changes in digital education learning. Current needs demand economics teachers be innovative in the teaching methods in the classroom. A series of analyses back that technology-assisted learning can enhance collaborative skills and learning delivery (Anduvare & Holmner, 2020). However, the success of this effort generally needs the support of particular parties such as school administrators and subject economics teachers in particular. The results of this study could encourage educators to modify past teaching methods and be open to accepting current changes. Generation Z is now being raised in an environment involving diverse technologies from the previous generations. The limitation of this study was that it only concerned Form Six economics students from two schools in Malacca using questionnaires. The researcher recommends conducting experimental studies in the future to evaluate the effectiveness of Google Classroom usage on student achievement and perform Differential Item Functioning (DIF) to consider the tendency of respondents who have similar characteristics and abilities toward an item.

ACKNOWLEDGMENT

Researchers would like to thank the Ministry of Education Malaysia for sponsoring this study under the Federal Training Prize 2018. In addition, they are thankful to the Sultan Idris University of Education (UPSI) for the existing guidelines and references and to the Melaka State Education Department for allowing the researcher conduct of the study.

REFERENCES

- [1] Abazi-Bexheti, L., Kadriu, A., Apostolova-Trpkovska, M., Jajaga, E., & Abazi-Alili, H. (2018). LMS solution: Evidence of Google Classroom usage in higher education. *Business Systems Research Journal*, 9(1), 31–43. <https://doi.org/10.2478/bsrj-2018-0003>
- [2] Adams, D., Mabel, H. J. T., Sumintono, B., & Oh, S. P. (2020). Blended learning engagement in higher education institutions: A differential item functioning analysis of students' backgrounds. *Malaysian Journal of Learning & Instruction*, 17(1), 133-158.
- [3] Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2019). Evaluating e-learning systems success: An empirical study. *Computers in Human Behavior*. <https://doi.org/10.1016/j.chb.2019.08.004>
- [4] Alim, N., Linda, W., Gunawan, F. & Md Saad, M. S. (2019). The effectiveness of Google Classroom as an instructional media: A case of State Islamic Institute of Kendari, Indonesia. *Humanities & Social Sciences Reviews*, 7(2), 240-246.
- [5] Al-Marroof, 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. <https://doi.org/10.3991/ijet.v13i06.8275>
- [6] Anduvare, E. M., & Holmner, M. (2020). Innovative use of technologies to enhance knowledge management. *Library Management*, 41(6/7), 503-514. <https://doi.org/10.1108/LM-03-2020-0038>
- [7] Auditor General of Malaysia. (2018). *Laporan ketua audit negara tahun 2018 siri 1*. https://www.audit.gov.my/images/pdf/2019/LKAN2018Siri1/LKAN2018S1_AKTIVITI%20KEM%20JAB%20BBP.pdf
- [8] Ayaz, A., & Yanartaş, M. (2020). An analysis on the unified theory of acceptance and use of technology theory (UTAUT): Acceptance of electronic document management system (EDMS). *Computers in Human Behavior Reports*, 2. <https://doi.org/10.1016/j.chbr.2020.100032>
- [9] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.

- [10] Beaumont, K. (2018). Google Classroom: An online learning environment to support blended learning. *Compass: Journal of Learning and Teaching*, 11(2).
- [11] Correa, T., & Pavez, I. (2016). Digital inclusion in rural areas: A qualitative exploration of challenges faced by people from isolated communities. *Journal of Computer-Mediated Communication*, 21(3), 247–263. <https://doi.org/10.1111/jcc4.12154>
- [12] Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C., Nair, S. N., Rogers, W. A., & Sharit, J. (2006). Factors predicting the use of technology: Findings from the center for research and education on aging and technology enhancement (create). *Psychology and Aging*, 21(2), 333–352. <https://doi.org/10.1037/0882-7974.21.2.333>
- [13] Dash, S. (2019). Google classroom as a learning management system to teach biochemistry in a medical school. *Biochemistry and Molecular Biology Education*. <https://doi.org/10.1002/bmb.21246>
- [14] Decman, M. (2015). Modeling the acceptance of e-learning in mandatory environments of higher education: The influence of previous education and gender. *Computers in Human Behavior Journal*, 49, 272–281. <https://doi.org/10.1016/j.chb.2015.03.022>
- [15] Fitripringtias, D.A., Umamah, N & Sumardi (2018). Google classroom: As a media of learning history. *ICEGE 2018, Conferences Earth and Environmental Science*. 1-8
- [16] Ghazal, S., Aldowah, H., Umar, I., & Bervell, B. (2018). Acceptance and satisfaction of learning management system enabled blended learning based on a modified DeLone-McLean information system success model. *International Journal of Information Technology Project Management*, 9(3), 52–71. <https://doi.org/10.4018/IJITPM.2018070104>
- [17] Google Trends, (2022). *Google Classroom*. <https://trends.google.com/trends/explore?q=google%20classroom>
- [18] Hasliza, H., Siti Munira, M. N., & Zarina, M. (2016). Cabaran yang dihadapi oleh guru dalam pelaksanaan persekitaran pembelajaran maya frog di bilik darjah. *Asia Pacific Journal of Educators and Education*, 31, 115–129. <http://dx.doi.org/10.21315/apjee2016.31.7>
- [19] Hidayat, M. L., Prasetyo, W. H., & Wantoro J. (2019). Pre-service student teachers' perception of using google classroom in a blended course. *Humanities and Social Sciences Reviews*, 7(2). <https://doi.org/10.18510/hssr.2019.7242>
- [20] Iftakhar, S. (2016). Google Classroom: What works and how? *Journal of Education and Social Science*, 3, 12–18
- [21] Jimaa, S. (2011). The impact of assessment on students learning. *Procedia - Social and Behavioral Sciences*, 28, 718–721. <https://doi.org/10.1016/j.sbspro.2011.11.133>
- [22] Kaviza, M. (2020). Kesiediaan murid terhadap penggunaan aplikasi Google Classroom sebagai platform pembelajaran sejarah. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 5(4), 108 – 115. <https://doi.org/10.47405/mjssh.v5i4.397>
- [23] Khoo, Y. Y., Khuan, W. B., & Rohaila, Y. (2019). Learning at your fingertips: The effectiveness of mobile learning among distance learners. *International Journal of Innovation, Creativity and Change*, 7(1), 194-208.
- [24] Kementerian Pendidikan Malaysia (KPM). (2013). *Malaysia education blueprint 2013-2025*. <https://www.moe.gov.my/muat-turun/penerbitan-dan-jurnal/1818-pelan-pembangunan-pendidikan-2013-2025/file>
- [25] Kementerian Pendidikan Malaysia (KPM). (2020a). *Garis panduan: Pengurusan pembukaan sekolah*. <https://www.moe.gov.my/muat-turun/pekeliling-dan-garis-panduan/3449-garis-panduan-pengurusan-pembukaan-semula-sekolah-4-6-2020/file>.
- [26] Kementerian Pendidikan Malaysia (KPM). (2018). *Garis panduan pelaksanaan dasar murid membawa peranti peribadi ke sekolah Kementerian Pendidikan Malaysia*. <https://www.moe.gov.my/pekeliling/2608-surat-pekeling-ikhtisas-kpm-bilangan-2-tahun-2018-garis-panduan-pelaksanaan-dasar-murid-membawa-peranti-peribadi-ke-sekolah-kementerian-pendidikan-malaysia/file>
- [27] Kementerian Pendidikan Malaysia (KPM). (2019). *Google Classroom*. <https://www.moe.gov.my/pemberitahuan/pengumuman/google-classroom-gc>.

- [28] Kementerian Pendidikan Malaysia (KPM). (2020b). *Pemakluman pelaksanaan pengajaran dan pembelajaran di rumah (PdPR)*.
<https://www.moe.gov.my/pemberitahuan/pengumuman/pemakluman-pdpr>
- [29] Kumar, J. A., & Bervell, B. (2019). Google Classroom for mobile learning in higher education: Modelling the initial perceptions of students. *Education and Information Technologies*.
<https://doi.org/10.1007/s10639-018-09858-z>
- [30] Kumar, J. A., Bervell, B., & Osman, S. (2020). Google classroom: Insights from Malaysian higher education students' and instructors' experiences. *Education and Information Technologies*.
<https://doi.org/10.1007/s10639-020-10163-x>
- [31] Majanja, M. K. (2020). The status of electronic teaching within South African LIS education. *Library Management*, 41(6/7), 317-337. <https://doi.org/10.1108/LM-05-2020-0084>
- [32] Malaysian Communications and Multimedia Commission (MCMC). (2020). *Internet users survey 2020*. <https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/IUS-2020-Infographic.pdf>
- [33] Malkus, N., Christensen, C., & Schurz, J. (2020). *School district responses to the COVID-19 pandemic: Round 6, ending the year of school closures*. American Enterprise Institute.
- [34] Memon, W. A., Miran, A. A., Memon, M. S., & Sodhar, I. N. (2019). Comparative study of online learning management systems: A survey in Pakistan. *Information Sciences Letters*, 8(3), 111-120.
- [35] Mohd Paris, S., & Saedah, S. (2016). Analisis keperluan pembangunan model pengajaran-membelajaran mata pelajaran sejarah sekolah menengah. *Jurnal Kurikulum & Pengajaran Asia Pasifik*, 4(4), 12-24.
- [36] Mohd Razali, A. S., & Zanaton, I., & Fariza, K. (2021). The use of mobile learning in teaching and learning session during the covid-19 pandemic in Malaysia. *Journal of Contemporary Social Science and Educational Studies*, 1(2).
- [37] Noornadiyah, M. S., & Khoo, Y. Y. (2021). The effect of google classroom-assisted learning on self- efficacy among form six economics students. *International Journal of Academic Research in Business and Social Sciences*, 11(11), 1922-1938. <https://doi.org/10.6007/IJARBS/v11-i11/11527>
- [38] Noornadiyah, M. S., Khoo, Y. Y., & Zainizam, Z. (2021). The impact of google classroom-assisted collaborative learning approach on economics students' attitudes. *International Journal of Advanced Research in Education and Society*, 3(4), 21-37. <https://myjms.mohe.gov.my/index.php/ijares/article/view/16353>
- [39] Nor Zaira, R., Zolkefli, B., & Mohd Kasri, S. (2016). Faktor-faktor yang mempengaruhi penggunaan VLE Frog dalam kalangan guru di sekolah menengah. *International Seminar on Generating Knowledge Through Research, UUM-UMSIDA, 25-27 October 2016, Universiti Utara Malaysia, Malaysia*. <http://dx.doi.org/10.21070/picecrs.v1i1.645>
- [40] Nor Zanira, A. M., & Hafizul, F. H. (2020). Google Classroom: Students acceptance using UTAUT model. *JAPPA Journal: Journal of Applied Art*, 1(1), 64-74.
- [41] Nuryazida, M., Mohammad Shah, K., Siti Nazuar, S., Noor Aida, M., & Nor Hissam, S. (2019). The influence of knowledge and attitude towards the usage of VLE Frog among secondary school teachers in Kulim. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 8.
- [42] Nunnally, J., & Bernstein. (1994). *Psychometric theory*. McGraw Hill.
- [43] Pratama, A (2021). Modification of the technology acceptance model in the use of Google classroom in the COVID19 Era: A case studies in junior high schools. *Cypriot Journal of Educational Science*. 16(5), 2598-2608. <https://doi.org/10.18844/cjes.v16i5.6336>
- [44] Priyaadharshini, M., & Vinayaga Sundaram, B. (2018). Evaluation of higher-order thinking skills using learning style in an undergraduate engineering in flipped classroom. *Computer Applications in Engineering Education*. <https://doi.org/10.1002/cae.22035>
- [45] Saroia, A. I., & Gao, S. (2018). Investigating university students' intention to use mobile learning management systems in Sweden. *Innovations in Education and Teaching International*, 56(5), 569-580. <https://doi.org/10.1080/14703297.2018.1557068>

- [46] Shahrane, I. N. M., Jamil, J. M., & Rodzi, A. S. S. M. (2016). The application of Google Classroom as a tool for teaching and learning. *Journal of Telecommunication, Electronic and Computer Engineering*, 8(10), 5–8. <https://jtec.utem.edu.my/jtec/article/view/1357>
- [47] Sidhu, G.K., Yean, L.F.Y., Jean, L.H., & Abdelhai, A.E. (2019). Knowledge and understanding of google classroom as a teaching and learning tool: A case study. *International Journal of Advanced Science and Technology*, 8(8), 687-695.
- [48] Stavitskiy, O., & Urazgaliyeva, M.(2018). Using Google Classroom tools in teaching students of economic specialities. *Advanced Education*, 10, 69–75.
- [49] Sulisworo, D., Agustin, S. P., & Sudarmiyati, E. (2016). Cooperative-blended learning using Moodle as an open source learning platform. *International Journal of Technology Enhanced Learning*, 8(2), 187. <https://doi.org/10.1504/IJTEL.2016.078089>
- [50] Venkatesh, Morris, Davis, & Davis. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425. <https://doi.org/10.2307/30036540>
- [51] Ventayen, R. J. M., Estira, K. L. A., De Guzman, M. J., Cabaluna, C. M. & Espinosa, N. N. (2018). Usability evaluation of google classroom: Basis for the adaptation of g-suite e-learning platform. *Asia Pacific Journal of Education, Arts, and Sciences*, 5(1), 47 – 51.
- [52] Wan Alia Athira, W. N., Noor Adira, A. R., Lavaneesh, R., & Melor, M. Y. (2019). Painting pictures with words via google classroom. *International Journal of Scientific & Technology Research*, 8(12).
- [53] Zakaria, M., Manaf, K.A., Bustaman, H.A. & Rahman, R.A. (2020). Exploring benefits and challenges of adopting Google classroom in the perspective of higher institution's learners. *Test Engineering and Management*, 83(11), 9739-9749.
- [54] Zulfikar, A. F., Muhidin, A., Pranoto, Suparta, W., Trisetyarso, A., Abbas, B. S., & Kang, C. H. (2019). The effectiveness of online learning with facilitation method. *Procedia Computer Science*, 161, 32–40. <https://doi.org/10.1016/j.procs.2019.11.096>