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The Effect of Google Classroom Assisted Learning on Interest among form Six Economics Students

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Abstract

The use of online learning approaches such as Google Classroom has become a necessity since the Covid-19 pandemic. Through the *Jalinan Digital Negara (JENDELA)* plan (2020-2022), the digital learning approach is expected to be strengthened with better improvements post-pandemic in Malaysia. In line with the development of technology, collaborative learning is no longer limited to face-to-face but virtual. However, it has become common for collaborative learning approaches to be conducted face-to-face. To date, there is still a lack of Google Classroom-assisted collaborative learning research on economics subjects. This study aims to test the effect of Google Classroom-assisted learning on non-cognitive aspects, namely the interests of economics students. This quasi-experimental study used pre and post-questionnaire instruments to collect data on 207 form six economics students through cluster random sampling. Descriptive analysis and ANOVA were performed after data were collected and coded. The results showed that the group of students who were exposed to the collaborative approach (GCDK) showed a better interest in economic learning than the group of students who were not exposed to the collaborative approach (GCTK and KPK). The implications of this study contribute to teachers, administrators, and policymakers being prepared with the implementation transformation of the futuristic pedagogical methods. It is recommended for future researchers to conduct further research to identify the readiness and acceptance of educators towards the implementation of this learning approach. The learning approach is also recommended to be implemented on other subjects with a larger number of students.

Keywords: Collaborative Learning, Interests, Google Classroom, Online Learning and Economics Education, Post Covid-19.

Introduction

To curb the Covid-19 outbreak, 10,220 schools were forced to physically close operations causing 4,987,401 students nationwide to be affected in Malaysia (Ministry of Education Malaysia, 2020). Support for access to good and continuing education to the affected students should be implemented by the stakeholder. Online digital learning medium

such as Google Classroom, Zoom, Telegram, WhatsApp, and Facebook is the best alternative in the current situation (Butola, 2021; Gunawan et al., 2020; Mulyono et al., 2021; Zarzycka et al., 2021). Statistical evidence in Malaysia found that there is a sharp increase in the use of the internet (6%), computers (3.5%), and mobile phones (0.5%) in 2020 compared to 2017 due to the need for e-learning (Department of Statistics Malaysia, 2021).

The situation is expected to improve and will operate normally with the adoption of new norms when schools reopen. The United Nations Children's Fund (UNICEF) report also recommends that the digital learning approach be continued as one of the measures of the Covid-19 post-education recovery plan (UNICEF, 2021). Recently, the Ministry of Education Malaysia has announced the opening of schools in stages by complying with certain standard operating procedures. This situation illustrates the current situation that demands teachers to implement changes in the existing teaching delivery to new learning approaches in line with the integration of today's technology. This situation reinforces the need for digital learning to ensure learning continuity and guarantee the educational rights of students. In this regard, the *Jalinan Digital Negara* (JENDELA) plan (2020-2022) was formulated at the level of schools and institutions of higher learning. Students will enjoy a new learning environment in line with the new norms after surviving the Covid-19 pandemic. Students will experience a hybrid learning environment with internet facilities and better infrastructure to improve the existing methods. Researchers also expect a transformation of the existing learning environment to digital learning after the education sector re-operates in the post-Covid-19 pandemic (Iyengar, 2021; Neuwirth et al., 2020; Pokhrel & Chhetri, 2021; Zhao & Watterston, 2021).

The Google Classroom application is one of the virtual learning mediums that has received attention in Malaysia. To date, the number of application users has increased and Malaysia is the 2nd highest number of users among the 54 countries (Google Trend, 2021). Since Google Classroom was launched in 2014, the use of Google Classroom is seen to be increasingly accepted and widely used (Brown & Hocutt, 2015; Hallisey, 2017). The Google Classroom app is described as being able to compete with Facebook's display (Jordan & Duckett, 2018) and replace the Moodle application (Myska & Samkova, 2017). Researchers also argue that the advantages offered by Google Classrooms such as ease of use (Al-marouf & Al-emran, 2018; Jakkaew & Hwmrungrrote, 2017), time-saving (Heggart & Yoo, 2018), flexibility (Azlan et al., 2019), free (Dash, 2019) and mobile-friendly (Subandi et al., 2018; Ruiz et al., 2019). In addition, Google Classroom provides facilities for communication and discussion such as online discussions, forums, reviews, short messages, and emails to enable students to implement collaborative learning. Technological facilities help promote the learning process, support communication arrangements, evaluate learning activities, manage resources and create learning materials (Nadiyah et al., 2015).

Collaborative learning is one of the elements emphasized in 21st-century learning (Laal, 2012; Nadiyah & Faaizah, 2015). Collaborative learning is defined as learning activities in pairs or in small groups that have similar goals to solve problems, perform tasks or achieve specific objectives (Barkley et al., 2005; Laal & Laal, 2012). There are five main principles in the implementation of a collaborative learning approach that are positive dependence, interaction, individual accountability, social skills, and self-assessment of the group (Laal, 2013). Much past research has proven that virtual collaborative learning also improves student achievement. Active learning is better than conventional learning approaches (Alsadoon, 2020; Chan et al., 2020; Mozahem, 2020; Chen et al., 2018; Lento, 2016; Olelewe

& Agomuo, 2016) especially to weaker students (Almasseri & AlHojailan, 2019). Apart from the development of academic achievement, this learning approach also contributes to the development of social, psychological, and assessment aspects (Laal & Ghodsi, 2012; Sharifah Nadiyah et al., 2015). The social constructivism theory by Vygotsky stated that learning occurs when individuals actively interact. The difference between the current level of development and the level of potential development is known as the Zone of Proximal Development (ZPD) (Vygotsky, 1978). Following on from the ZPD discussion, the concept of scaffolding emerged, which is an external stimulus or support to help students cross the ZPD gap (Wood et al., 1976). In this study, students, through the help of friends and teachers, move through the ZPD to enable them to reach their potential. Through collaborative learning, students actively receive information, evaluate, compare differences in the existing information and analyze information critically with their peers before forming new knowledge.

However, the effectiveness of collaborative learning depends on several aspects such as soft skills, passenger members, differences in member competencies and friendships. (Le et al., 2018; Nadiyah & Faaizah, 2015). Furthermore, it is common for collaborative learning approaches to be conducted face-to-face. In line with the development of technology, collaborative learning is no longer limited to face-to-face learning and can be done virtually. Previous research has often focused on the use of the Google Classroom app on science (Dash, 2019; Akhmal et al., 2020), mathematics (Abidin et al., 2021; Nurhasanah et al., 2021), and language subjects (Ammang et al., 2019; Fauzan & Nadia, 2021; Lau & Maslawati, 2021).

Research Objective

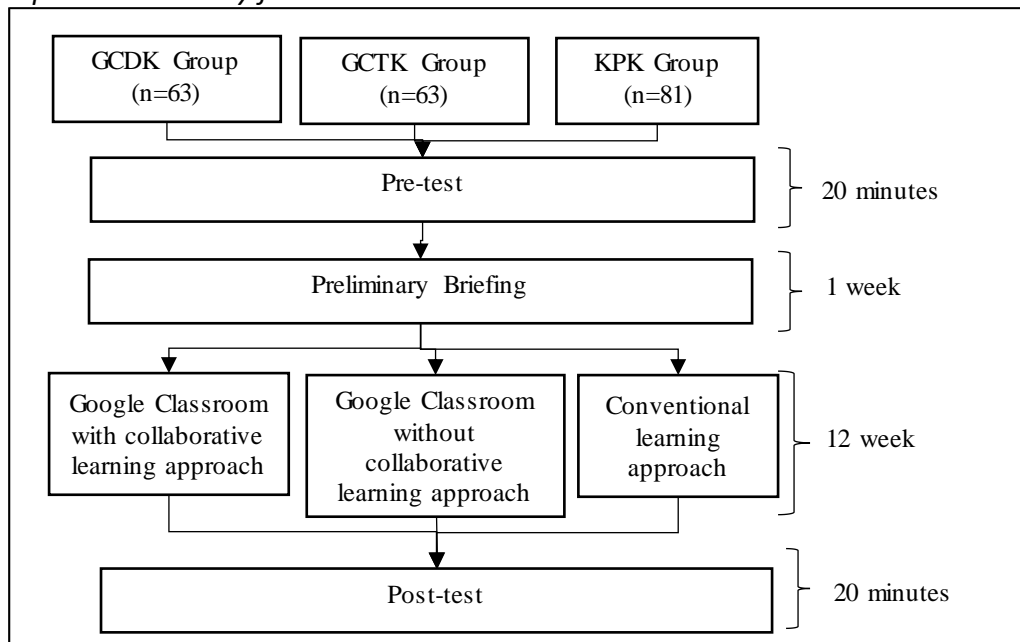
To date, there is still a lack of Google Classroom-assisted collaborative learning research on economics subjects. The formation of a balanced student is not only measured by achievement alone but also includes spiritual, emotional and physical aspects (Saharia, 2015). Therefore, this study was conducted to test the effect of Google Classroom-assisted learning on non-cognitive aspects, namely the interests of economics students.

Methodology

This quasi-experimental study was conducted in three schools in Melaka, Malaysia. The respondents consisted of 207 form six economics students, selected through cluster random sampling. Researchers used a questionnaire instrument (13 items). First, the researcher obtained permission from the Education Policy Planning and Research Division, Melaka State Education Department, the school principal, and get the student's consent. Researchers distributed the pre-tests before the group intervention was conducted. The study participants involved were given an initial briefing and training for a week before the implementation of the intervention. Each student was given and used the same economics learning materials for 12 weeks. The GCDK students were grouped into small groups (4 to 6 people) using Google Classroom learning medium with a collaborative approach, the GCTK group used Goggle Classroom without collaboration, while the KPK group followed the conventional learning by the existing teachers. This quasi-experimental research was conducted for 12 weeks. At the end of the 12th week, post-tests are distributed to the students. Once data were obtained and coded, descriptive analysis and ANOVA were performed. Figure 1 shows the flow chart of the quasi-experimental study conducted.

Figure 1

Quasi-experimental study flow chart



Results

Table 1 summarizes the profiles of respondents. The total number of respondents in this study was 207 students from three Form Six daily schools. Distribution according to school; 63 respondents (30.0 %) were from SMK1, 63 respondents (30.4%) from SMK2 and 81 respondents (39.1%) from SMK3. The demographic distribution by location of residence showed that respondents from urban areas recorded the highest number of 121 respondents (58.5%), followed by rural, that was 48 respondents (23.2%), and 38 suburban respondents (18.4%). The demographic distribution according to the number of mobile devices owned reported that the majority of respondents (140 people / 67.6%) owned at least one to two devices, followed by three to four of (38 people / 18.4%) and more than four (29 people / 14.0%). Whereas, none of the students reported not owning any personal device in this study. In addition, the distribution of respondents according to the experience of using the device showed that the majority of respondents had more than seven years of experience, which was 102 respondents (49.3%), followed by four to seven years of 90 respondents (43.5%) and less than three years of 15 respondents (7.2%). Meanwhile, the demographic distribution according to the frequency of internet use per day found the highest number of students used the internet between seven to 12 hours a day which was 98 people (47.3%), followed by one to six hours a day that was 73 people (35.3%) and finally, more than 12 hours a day was 36 people (17.4%).

Table 1*Respondent Profile (n=207)*

Items	Characteristics	Frequency	Percentage
1. School	SMK1	63	30.4
	SMK2	63	30.4
	SMK3	81	39.1
2. Residential Location	Rural	48	23.2
	Suburbs	38	18.4
	Urban	121	58.5
3. Number of Devices	No	0	0
	1 to 2	140	67.6
	3 to 4	38	18.4
	More than 4	29	14.0
4. Usage Experience	Less than 3 years	15	7.2
	4 to 7 years	90	43.5
	More than 7 years	102	49.3
5. Daily Internet Use	1 to 6 hours	73	35.3
	7 to 12 hours	98	47.3
	More than 12 hours	36	17.4

Table 2 reported the responses to the interest variable. In the post-test, the GCDK respondents reported the highest mean score on item B12 (*I learned interesting new knowledge about the national economy*) with a mean score of 4.3492. Students likely make further discussions beyond the learning topics of the existing syllabus by relating them to the current national issues. Meanwhile, the GCTK respondents reported the highest mean score of 4.0476 on items B9 (*I asked the teacher about the practice questions that I did not understand*) and B11 (*I paid full attention throughout the teacher's teaching in the classroom*). In this case, students need the help of the teacher for further explanation on an economic topic that they did not understand. Therefore, students will focus on the teacher's teaching to improve understanding. Whereas, the lowest mean was recorded on item B6 (*I tried to find additional information on an economic issue*) by the GCDK group. However, the GCTK and KPK groups showed the lowest mean score on item B13 (*I chose an economics-related career in the future*). This is likely because the respondents are less exposed to potential career-related contributions throughout the learning process.

Table 2

Response of the Treatment Group (GCDK and GCTK) and the Control Group on Interest Variable

Groups		GCDK (N=63)		GCTK(N=63)		KPK(N=81)	
		Pre-Mean	Post-Mean	Pre-Mean	Post-Mean	Pre-Mean	Post-Mean
B1	I enjoy learning about economics	3.7937	4.0317	3.6508	3.7619	3.6914	3.4815
B2	Economics is one of my favorite subjects	3.3651	3.7302	3.1905	3.5397	3.6296	3.2469
B3	I realize economics is useful in my daily life	3.9524	4.1905	3.7143	3.9524	3.8025	3.7037
B4	I can make better decisions based on the economic concepts I learned	3.6984	3.9365	3.6190	3.6508	3.6543	3.5062
B5	I shared my own opinion even if the opinion is contrary to that of others	3.4444	3.5556	3.3810	3.5873	3.3457	3.4938
B6	I tried to find additional information on an economic issue.	3.4603	3.5397	3.4762	3.4127	3.0864	3.5432
B7	While in class, I am willing to share general knowledge with my peers	3.6190	3.9048	3.5556	3.7778	3.6420	3.7160
B8	I am involved in group work assignment discussions	3.8889	3.9206	3.7302	3.9206	3.6543	3.7901
B9	I asked the teacher about the practice questions that I did not understand	3.9365	3.9841	3.9048	4.0476	4.0123	3.7778
B10	I find additional economic reading material in addition to the notes given by the teacher	3.5873	3.9206	3.6825	3.7778	3.6420	3.8765
B11	I paid full attention throughout the teacher's teaching in the classroom	3.9365	4.1746	4.0635	4.0476	4.0617	3.8148
B12	I learned interesting new knowledge about the country's economy	3.8730	4.3492	3.9206	3.9524	3.7284	3.7778
B13	I will chose an economics-related career in the future	3.2063	3.6032	3.1905	3.0476	3.4691	3.1728

Referring to the results of ANOVA test on student interest variables in Table 3, it was found that the significant value at the pre-experimental stage was $F(2, 204) = 0.132$, $p = .877$ ($p > .05$), Eta Squared = 0.013. Whereas, the significant value at the post-experimental stage was $F(2, 204) = 5.327$, $p = .006$ ($p < .05$), Eta Squared = 0.049. These findings proved that there

were significant differences in the learning approaches of GCDK and GCTK compared to KPK on students' interests. Analysis of the effect size of the pre-experimental student attitude variable reported that the Eta Squared value of 0.013 was small ($0.01 > \text{Eta Squared} < 0.6$) (Cohen, 1988, 1992). Whereas, the value of Eta Squared at post-experiment was 0.049, indicating a small effect size ($0.01 > \text{Eta Squared} < 0.6$) (Cohen, 1988). These findings proved that there was a significantly small interaction effect size on the interest variables between the treatment group and the control group.

Table 3

ANOVA Test Report (Pre -Test and Post -Test) on Student Interest Based on Learning Approach Groups

Variables	Learning Approach	N	Mean	SD	F	Sig.	Eta Squared
Interests (pre-experiment)	GCDK	63	3.6740	0.53503	0.132	.877	0.013
	GCTK	63	3.6215	0.58604			
	KPK	81	3.6477	0.59371			
Interests (post-experiment)	GCDK	63	3.9109	0.55387	5.327	.006	0.049
	GCTK	63	3.7289	0.54932			
	KPK	81	3.6078	0.55571			

Discussion

The findings of this study significantly prove that the group of students exposed to the collaborative approach (GCDK) showed better interest in economic learning than the GCTK and KPK groups of students. The findings of this study are similar to previous research reports such as Zheng et al (2020); Bailey et al (2020); Khoo et al (2018); Al-Bahrani et al (2017); Zhai et al (2019) which tested the effectiveness of online collaborative learning on interest variable. However, Adefila et al (2020) stated this approach will involve a challenging social learning process and students do not always fully accept what is learned. Positively, the challenges that occur encourage students to think creatively and critically to find the best alternative solutions (Hur et al., 2020; Ozdemir et al., 2016).

The collaborative learning approach is not just about sharing information materials to complete tasks but also includes interaction, communication, and knowledge-building activities. The learning medium assisted by the learning management system also provides space for students to communicate by participating in discussion forums (Hu et al., 2019; Mpungose & Khoza, 2020; Morton et al., 2016). Each student has the opportunity to contribute cognitively by asking questions, giving answers, and providing information (Winter, 2018). Furthermore, the sharing of common goals encourages student engagement cognitively, affectively, and behaviorally (Kahn et al., 2016). This affects student motivation, quality of work (Zhu et al., 2021), enjoyment (Khajavy et al., 2017) and encourages student autonomy to collaborate positively (Hsieh, 2016). In this study the students of the intervention group (GCDK) engaged in a discussion of knowledge proliferation, sharing an intrinsic interest in learning, seeking knowledge, and interacting with the same purpose.

Moreover, the current generation lifestyle is synonymous with the use of mobile devices and the internet. According to Coll and Coll (2017), the use of digital learning platforms encourages collaborative learning activities. Students strive to explore learning

activities as well as create new knowledge by relating personal experiences that are commonly used in everyday life (Jamiludin et al., 2021; Sari et al., 2020). Learning materials are easily available and students have sufficient time to access the learning content (Graham et al., 2017). If faced with difficulties, students have the autonomy to seek outside help from various sources. Compared to the conventional approach (KPK), GCDK and GCTK students have the autonomy to determine their learning schedules, setting individual learning periods and not being tied to the physicality of the classroom. Thus, the students of the intervention group (GCDK and GCTK) had better autonomy in economic learning and were able to control the rate of instruction outside the classroom. The self-control of learning meets the basic psychological needs of students (Wong, 2019), thereby stimulating students' emotions and interest in exploring economic learning in more depth.

This is a space for improvement in enhancing the quality of economic learning and teaching. The technological advances provide room for improvement over the conventional teacher-centered approach to active learning, parallel with 21st-century learning. The method is adapted to the development of economic learning approaches by increasing student interest.

Conclusion

In conclusion, the teacher's teaching environment and approach can stimulate students' interest intrinsically and extrinsically in economics learning. Students gain a new perspective on economics learning methods as they actively engaged in a fun and meaningful collaborative learning environment through the support of Google Classroom learning medium. However, this study is limited to a small sample that involves only three schools. It is suggested that further studies involve a greater number of respondents and for other subjects. In addition, further researches to identify the readiness and acceptance of educators towards the implementation of this learning approach is proposed. School administrators should encourage teachers to diversify their delivery approaches by enriching the digitization of education. The policymaker should provide good infrastructure and teachers' expertise in facing the country's post-pandemic education recovery plan. Increasingly challenging and complex tasks nowadays demand more effort and self-discipline.

The increasingly challenging environment encourages teachers to implement innovations in teaching. Theoretically the findings of this study have developed the application of constructivist social learning approach through digital platforms. In parallel with current technological developments, social interaction is now not only limited in the classroom environment. Contextually this approach helps economic students gain access and manage learning content more easily. This approach meets the learning needs of generation Z students who prioritize interactive e-learning, just-in-time learning and collaborative learning (Khan & Al-Shibami, 2019). Teachers and students need to be prepared towards the transformation of education with mastery of the use of digital mediums. Mastery of technology literacy encourages the diversity of teaching and learning approaches to economic students. This is because the evidence from the study findings shows that teachers need to be prepared to master futuristic pedagogical methods such as cybergogy, gamification and heutagogy will be part of the learning environment in Malaysia. Furthermore, future research of other factors that support the implementation effectiveness of a reasonable collaborative learning approach was developed. Therefore, the factor of interest in economic learning

should be developed, nurtured and expanded so that students remain focused throughout the learning period.

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