

Google Classroom as a Pedagogical Tool for Research Supervision: A Case Study of Undergraduate Students' Perceptions and Experiences

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Abstract

This study explores the perceptions and experiences of students in a blended research supervision context facilitated through Google Classroom. The Constructive Learning Theory is incorporated as a theoretical lens in this study. This empirical study takes the subjective stance often amalgamated into qualitative inquiry. Data collection was done through a structured questionnaire which includes open-ended questions urging to write descriptive answers. Those written responses were collected from seventeen respondents. Thematic analysis was incorporated as the method of data analysis. The study exposes that Google Classroom and face-to-face sessions for research supervision support the research students' active learning role. While the student is at the heart of the learning process, the research supervisor supports constructivism by acting as a facilitator and advisor. Further, collaborative and cooperative learning is improved in a blended environment, which is acknowledged as a crucial component of constructive learning. In the end, the students see Google Classroom as a practical, helpful, and efficient way to learn. Consequently, blended supervision is identified as a constructive mode of research supervision. Overall, this study will highlight how crucial it is to use e-platforms to create a constructive blended learning environment to improve student satisfaction and quality of learning.

Keywords: *Active learning, Blended supervision, Constructive learning, Face-to-face discussion; Google classroom*

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Introduction

In light of the fact that youths today are part of a digital generation that uses mobile phones, computers, tablets, and e-readers daily in a world that is confronted by technology and the internet (Islam, 2018), aligning technology with education has become a must. As a result, the establishment of e-learning environments in higher education has increased significantly in recent years (Ansong-Gyimah, 2020). E-learning is currently being developed in the form of blended learning (Rahmawati et al., 2019). At this point, the internet facilitates the exercise of blended learning by providing a variety of blended learning platforms from which teachers and students can choose and use (Sibuea, 2018). Google Classroom is a free application that helps students and teachers connect, collaborate, organize, and create assignments while making learning paperless (Hussaini et al., 2020; Oktaria & Rohmayadevi, 2021). This application supports teacher-to-student and student-to-student interactions enabling written feedback from teachers and easy access to course materials (Khalil, 2018; Negara, 2018). Additionally, teachers can make real-time announcements or assign tasks to students, and students can accept automatic notifications (Ridho et al., 2019). Moreover, Google Classroom is a pedagogical tool to assist in shifting the focus of the classroom from teacher-centered to learner-centered facilitating open inquiry, discussion, and creative thinking (Shaharane et al., 2016). Thus, Google Classroom can be used to create classes and facilitate interaction between students and lecturers beyond the conventional chalk-and-talk classrooms.

The current study is based on the experiences of the undergraduates in a blended supervising environment facilitated by their research supervisor. The respondents of this study are a group of students who were under my supervision in completing their independent research project as a partial fulfillment of their Business Administration Degree. In the given Business

Administration degree program, completing an individual-independent research project is mandatory. Being a larger department of the faculty with nearly 230 students, the supervisor had to undertake 21 students to supervise their research projects. One student was given only 30 minutes per week to meet their supervisor face-to-face and clarify issues of their project. Therefore, the available time for a face-to-face discussion with a student was very limited. Further, handling 21 students individually was a challenge for the supervisor in guiding them. Consequently, having a bulk of research students was a huge burden for the supervisor. Thus, I created a Google Classroom to manage such barriers. Thereafter, the students occasionally met me face-to-face and frequently interacted in the Google Classroom.

The current study is designed to explore the perceptions of students in a blended research supervision environment exposing their unique experiences in Google Classroom. Although there is an adequate amount of previous research focused on students' perceptions of e-learning (E.g., Ansong-Gyimah, 2020; Jakkaew & Hemrungrate, 2017) and blended learning experiences at Google Classroom (E.g., Rahmawati, et al., 2019; Sibuea, 2018), application of blended learning in research supervision is a new contribution. Further, the findings of this study are reflected using the 'Constructivist Theory of Learning'. Even though few scholars utilized the Constructivist Theory of Learning to explain online education (E.g., Carwile, 2007; Garrison, 1993; Huang, 2002), using this theory to explain the perceptions of students in Google Classroom is another contribution of this study. Empirically, this study contributes to knowing students' perceptions since it is critical to allow teachers or lecturers to evaluate their efforts to improve teaching and learning (Oktaria & Rohmayadevi, 2021). Overall, this study will elucidate the importance of using e-platforms to facilitate a blended learning environment in improving



the quality of learning and student satisfaction.

Research Question

What are the unique perceptions and experiences of students on blended research supervision facilitated through Google Classroom?

Literature Review

Google Classroom is a useful blended learning platform that debuted in 2014 and gained popularity in 2017 after Google changed its policy from institutional to individual use (Heijink, 2017; Luckerson, 2015). Google Classroom is regarded as an innovative pedagogical platform by both students and teachers (Islam, 2018). Moreover, Google Classroom is a learning media that is used to stimulate students' interest in the learning process and, consequently, to help them enhance their academic performance (Triana et al., 2021). Because of its features (collaboration, announcements, material sharing, assignment submission, grading, and feedback), Google Classroom provides a streamlined communication and user experience that can be beneficial to both students and educators (Widodo & Slamer, 2020). To enhance student performance, educators should integrate traditional teaching with Google Classroom (Hussaini et al., 2020). Accordingly, students and educators have different perceptions based on their experiences in using Google Classroom as a pedagogical tool.

In the view of students, they perceive Google Classroom as an effective and useful application that enables e-learning (Negara, 2018) which is convenient to use (Barus & Simanjuntak, 2020; Jakkaew & Hemrungrrote, 2017). Students perceive Google Classroom as a flexible and useful platform when learning (Shaharane et al., 2016). Also, Google Classroom provides easy access to study materials posted by teachers (Khalil, 2018). Students can easily

access and send assignments without meeting physically their lecturer; this offers convenience in terms of time and location (Widodo & Slamer, 2020). Thus, Google Classroom is a simple and useful learning platform that allows students to study anywhere and at any time without having to interact with teachers or other classmates in person (Ridho et al., 2019). Moreover, students believe that they receive useful feedback for their assignments submitted to Google Classroom (Hussaini et al., 2020; Widodo & Slamer, 2020). Accordingly, Google Classroom improves interactions between teacher-student and student-student (Khalil, 2018). Students can comprehend learning in Google Classroom as enjoyable and meaningful (Triana et al., 2021). Consequently, it improves students' access and attentiveness to learning (Hussaini et al., 2020). Further, the skills and knowledge gained via Google Classroom encourage students to become active learners (Oktaria & Rohmayadevi, 2021). Overall, learning in Google Classroom improves learner satisfaction (Negara, 2018; Shaharane et al., 2016), and quality of learning (Ansong-Gyimah, 2020). Referring to the experiences of the recent COVID-19 pandemic, scholars emphasize Google Classroom as an effective solution in a crisis that restricts face-to-face interactions (Dantes et al., 2022; Diana et al., 2021). Thus, it can be observed that students have experienced plenty of positive experiences in Google Classroom.

In contrast to the positive experiences in Google Classroom, some scholars have revealed negative experiences. The technical issues in devices and the internet (Dantes et al., 2022; Diana et al., 2021; Ridho et al., 2019) are major barriers to learning in Google Classroom. Further, learners are unaware of the basic functions of Google Classroom because of inadequate technological knowledge of Google Classroom i.e., using Google Classroom without expert training (Islam, 2018). Thus, users do not fully utilize most Google Classroom features (Jakkaew &



Hemrungrote, 2017). Furthermore, students in a Google Classroom experience a lack of understanding of lecture materials (Dantes et al., 2022; Diana et al., 2021; Rahmawati et al., 2019) because the students are encouraged to be engaged with self-learning on the uploaded materials. In a nutshell, the literature reveals more positive and comparatively fewer negative perceptions of students referring to their experiences in Google Classroom.

Constructivist Theory of Learning

Constructivist learning theory is the key theoretical lens utilized in this study to explain the findings. Constructivism is a theory of learning, not a method of instruction or a curriculum (Barrett & Long, 2012). The view of constructivism as a learning theory has guided most of the development of constructivist pedagogy (Richardson, 2003, p. 1624). Accordingly, the term ‘constructivism’ in education refers to the view that learners construct knowledge for themselves—each learner individually (and socially) constructs meaning as he or she learns (Hein, 1991, p.1). According to the constructivist learning theory, people create knowledge and form meaning based on their experiences (Olusegun, 2015, p. 67). Constructivists consider students to be active rather than passive (Ally, 2008, p.30). Therefore, the learner is at the center of the learning process, with the instructor advising and facilitating (Ally, 2008). Accordingly, learning is understood to be complicated and fundamentally nonlinear, rather than being viewed as a linear process (Fosnot & Perry, 2005). Olusegun (2015) provides a comprehensive explanation of what a constructivist classroom is.

The emphasis in the constructivist classroom shifts from the teacher to the students. A classroom is no longer a place where the teacher (“expert”) pours knowledge into passive students who wait to be filled like empty vessels. Students are encouraged to be actively involved in

their learning process in the constructivist model. The teacher is more of a facilitator, coaching, mediating, prompting, and assisting students in developing and assessing their understanding, and thus their learning (p. 68).

‘Accommodation’ and ‘assimilation’ are two key concepts in constructivist learning theory that contribute to the construction of an individual’s new knowledge (Fosnot & Perry, 2005). Assimilation is the process by which new experiences are integrated into old ones (Barrett & Long, 2012). This causes the individual to develop new perspectives, reconsider previously held misconceptions, and assess what is important, ultimately altering their perceptions (Olusegun, 2015). Accommodation is the process of reframing the world and new experiences within the mental capacity that already exists (Barrett & Long, 2012). Individuals envision a particular way for the world to function (Olusegun, 2015). Inherently, conducting research is a way of constructive learning. On the other hand, e-learning is more student-centered (Cheon et al., 2021; Naji et al., 2020; Wei and Chou, 2020). Therefore, the constructivist learning theory can be applied to an understanding of the nature of e-learning and its functions (Huang, 2002; Schell & Janicki, 2012; Swan, 2005). Thus, I use constructivist learning theory to explain the active learning experiences of students in Google Classroom in having guidance for their independent research projects.

Methods

This study aims to uncover the perceptions of students on a blended learning environment in completing their independent research projects. Ontologically it takes the subjective stance in researching. Therefore, I decided to incorporate the qualitative approach hence it provides a more detailed description and analysis of the research topic without limiting the scope of the study and is highly attached to personal experiences, feelings, emotions, values, perceptions as



well as social phenomena. Thus, I adopted the qualitative method as the most appropriate approach in elucidating the respondents' experiences in Google Classroom.

A questionnaire with open-ended questions designed using Google Forms was posted to Google Classroom to collect data. It allowed the students to freely express their ideas anonymously. There, the students were asked to provide descriptive answers explaining their experiences in Google Classroom. The questionnaire consisted of open-ended questions in the following areas.

- The role of Google Classroom in successfully engaging with the research project
- perceptions of the functions/elements of Google Classroom
- research supervisor's role in face-to-face supervision and Google Classroom
- perceived advantages of integrating research supervision with Google Classroom
- perceived disadvantages/ barriers/limitations in Google Classroom
- the overall learning experience in Google Classroom in completing the research project

The respondents of the study were 17 final-year undergraduates (out of 21; the response rate is 80.95%) who were reading a Business Administration degree. Respondents consisted of 10 female students and 07 male students who were between 23-26 of their age. Moreover, as final-year undergraduates, they attended their internships at the time they were doing their independent research projects. The researcher of the current study is a junior lecturer of the department (a 28-year-old male with 3 years of experience in teaching and supervision) who had been appointed as the research supervisor of the respondents. The researcher decided to facilitate a Google Classroom for his research students to understand the time constraints and inefficiencies of face-to-face

supervision of a larger group of students. Mainly, the supervisor made announcements, shared materials, assigned assessments, set deadlines, and provided feedback in the Google Classroom. Thereby, the supervisor facilitated autonomous or self-directed learning (Karatas, 2020; Rafique et al., 2021) for students which is often highlighted in e-learning environments. Students could access the announcements and materials, complete the assignments, submit the draft research chapters, receive comments, and clarify issues of the research via this platform.

Thus, this research reflects the application of the participatory research strategy (Cornwall & Jewkes, 1995) hence the research is undergone in a context that empowers the respondents, changes the power relations between supervisor and students, and encourages active collaborations between the supervisor and students. In empowering the students, the supervisor facilitated the use of modern technology in learning. i.e., the respondents never had engaged in Google Classroom before. Moreover, power relations were changed providing more autonomy to the students (students had the freedom to set goals, track assignments, meet deadlines, and time planning, and ask assistance from peer learners), and the supervisor was just a facilitator in both Google Classroom and face-to-face interactions. The construction of this blended learning environment is a collaboration of both the supervisor and students. Students had the opportunity to freely express their ideas and opinions in their learning environment and the supervisor was open to the discussion. This interaction continued from June 2019 to August 2020, over more than a year.

In analyzing data, I engaged in qualitative data analysis. The range of processes and procedures used to convert qualitative data into some form of explanation, understanding, or interpretation of people and situations is known as qualitative data analysis (Schutt, 2012; Taylor & Gibbs,



2010). The respondents' written responses were analyzed using the Thematic Analysis technique identifying patterns or meanings related to the data set (Boyatzis, 1998; Braun & Clarke, 2006). In doing the thematic analysis, I identified 126 initial codes referring to the answers provided by the respondents. Finally, I comprehended identified codes to 6 main themes: student as an active learner in the blended supervision process, supervisor as a facilitator in the blended supervision process, active interactions among the parties in the blended supervision process, student perceived benefits of Google Classroom, student perceived barriers of Google Classroom and blended supervision as a constructive mode of research supervision.

The trustworthiness is assured throughout the research process. Any respondent was not forced to respond to the uploaded questionnaire. Their voluntary participation was taken in collecting data. The respondents were allowed to provide anonymous responses. The data collected from the respondents were used only for research purposes, i.e., data was not misused.

Findings

In exploring the perceptions of students in a blended research supervision environment to expose their unique experiences in Google Classroom, I identified 6 broader themes in analyzing the respondents' responses. These themes provide a comprehensive view of how students perceive the blended setting in their research supervision.

Student as an Active Learner in the Blended Supervision Process

The student acts as an active learner in the adopted blended learning environment in research supervision. The skills and knowledge gained via Google Classroom encourage students to become active learners by improving student access and attentiveness to learning (Hussaini et al., 2020). In this case, the student plays a

central role in the learning process. Using Google Classroom to supervise the research promotes the student's active learner role.

When referring to the attached materials in the Google Classroom it was very helpful to refer to them again and again. (S6)

I read materials that are shared in Google Classroom and I used those materials in doing my research. (S5)

The students have the freedom to use the shared materials freely in doing their research and the student can decide which parts of the materials should be taken or not. The students can access the materials at any time they prefer and they can refer to the materials repeatedly.

I got updated information related to my research from Google Classroom. For example, the dates to complete the chapters, and the dates and time slots to physically meet the supervisor. (S16)

It generates deadline reminders and we could easily get in touch with the course as planned. (S6)

The supervisor sets the deadlines to submit each chapter of the research and informs those deadlines via Google Classroom. The student can frequently check the deadlines and keep track of their research. Even though the supervisor set the deadlines, the student can plan his/her research (E.g., when to start the chapter, which references should be used, what are the relevant sections within the chapter, deadlines for the sections within the chapter, when to ask support from the supervisor or peers, etc.).

I frequently revisited my completed drafts considering comments given by the supervisor. (S2)



Having feedback based on the chapters, helped really to stay on track without losing out. (S8)

Once the student submits the draft chapter supervisor can provide his feedback directly to the student using Google Classroom. In giving feedback, the supervisor and student can construct a written discussion as well.

We could explain our research progress to our research supervisor. (S10)

Google Classroom enables students to notify the progress of their research whenever the supervisor needs to know. Moreover, the supervisor can easily track whether a particular student is meeting chapter deadlines or not.

Supervisor as a Facilitator in the Blended Supervision Process

Hence the student is an active learner and an integral part of the learning process, the supervisor's role has been limited to a facilitator rather than a teacher or a coach. In the blended setting that was adopted by the supervisor, he just showed the path to the students facilitating both physically and online.

The supervisor provided technical support and personal support in both face-to-face and virtual supervision. (S15)

Here, the supervisor teaches the students how to join the Google Classroom, how to access materials, how to submit the chapters, how to view the comments, etc... Moreover, the supervisor personally attends to the issues that students face during their research journey.

The research supervisor shared study materials online through Google Classroom after every chapter submission. That gave us time to complete the next chapter. (S13)

Uploaded materials by the supervisor relevant to the research were a great help to me. (S14)

Providing useful materials to be referred by the students in articulating their chapters is another activity of the supervisor as a facilitator in the blended setting. For example, in the given Google Classroom, the supervisor uploaded textbooks that are useful in the construction of the research design.

Our research supervisor was flexible and we were able to schedule a meeting or get guidance from him whenever we had an issue regarding our research. (S4)

The supervisor identified the student properly and it helped us to sort out all the issues we came across. Moreover, he provided the learning materials on time without any hesitation. (S8)

The flexibility of the supervisor is another key element in his facilitator role. The supervisor does not follow a uniform approach which is common to all students. Knowing the capability and readiness of each student, the supervisor individually facilitated each.

Our supervisor used to communicate all important information through Google Classroom. (S11)

The supervisor published the future activities to be done related to my research in Google Classroom and it was very easy for me to engage with the research. (S12)

Apart from the materials, the supervisor used Google Classroom to communicate important deadlines, course notices, and other relevant information. Such activities convince the students that they should be active across the process.

We had first-hand feedback on chapter submissions and had the opportunity to discuss options and ideas for construction. (S13)

The supervisor provided us with constructive feedback whenever we needed it. (S15)

Once the student submits the draft chapters to Google Classroom, the supervisor gives the feedback for the draft at the same interface. Especially, the supervisor emphasizes the mistakes and areas that should be improved further.

We were free to build discussions regarding our research with the supervisor. He provided us with a lot of materials and also he shared his own experiences as well. (S4)

The supervisor ensured the understanding of the path that the researcher should go clarified the doubts had and timely monitored the progress. (S6)

In the process of providing feedback, the student can ask for further clarifications on the given feedback in the same thread. The supervisor and student can engage in a constructive discussion. On that occasion, the supervisor can recommend or provide some other additional materials to the student to get clarification on his/her issue.

Active Interactions among the Parties in the Blended Supervision Process

The blended learning setting has improved student-to-student and student-to-supervisor interactions (Khalil, 2018). The respondents revealed that they experienced useful interactions within Google Classroom apart from face-to-face meetings.

In the class stream, we could start discussions with the supervisor and our fellow students. (S15)

Google Classroom enabled us to communicate and share ideas and knowledge with the classroom respondents. (S13)

The students were able to construct the discussions with their peers using the stream option. The student-student interaction and knowledge sharing are key elements in active learning. Thus, such interaction to active learning is facilitated by this blended learning setting.

Through Google Classroom, I was able to easily interact with my supervisor and peers. I was able to easily ask questions about subject matters from the supervisor. And I got quick answers to those questions. (S9)

Since it is virtually available always, we received continuous assistance and support from the research supervisor and we also had the opportunity to have more clarifications building an online conversation. (S7)

In the physical setting, it is necessary to find a convenient time and location for both supervisor and student to get meet and discuss. Whenever a such physical meeting is troublesome, the parties can interact using Google Classroom.

Even though it wasn't a physical class we were able to be comfortable with this. It helped us to clarify all our doubts without hesitance which I feel is good, especially for introverts. (S8)

Sometimes I am reluctant to ask questions face-to-face with the supervisor. So, it was easier for me to ask questions through Google Classroom. (S9)

Some students pointed out that they feel free to ask any question from the supervisor in the Google Classroom rather than face-to-face.

When the student is an introvert, shy, or fear to ask questions face-to-face, the Google Classroom platform enables them to present their issues without any hesitation.

Perceived Benefits of Google Classroom

The respondents revealed that they experience plenty of benefits in Google Classroom that they do not receive in a face-to-face setting.

I did not have any previous experience using Google Classroom. In my opinion, it was very useful and convenient for us to complete our research because of its simple setup. (S17)

I felt the Google Classroom was the same as face-to-face learning. I firmly believe that it is a fine alternative to face-to-face learning. (S3)

This platform made me more connected with my research project notices and guidelines as I could view them through my mobile itself. (S14)

The students perceive Google Classroom as a convenient tool to use. The student does not need advanced IT-based knowledge to be engaged in this platform. Using the students' basic IT knowledge, an electronic device (smartphone, computer, or tab), and an internet connection to access and operate the Google Classroom. Moreover, its functions are user-friendly and useful.

It was more and more helpful because mainly it reduces time consumption due to everything being managed in one place and easily accessible anytime anywhere. (S6)

I don't physically come and meet the supervisor frequently. Using Google Classroom, I could ask questions and get advice from the supervisor from anywhere at any time. (S9)

Hence the students do not need to physically travel to the university and meet the supervisor at a given specific time slot, they can save their time, physical effort, and traveling costs.

Google Classroom had a lot of functions such as sharing documents, making announcements, marking assignments, etc. so it was very effective and time-saving. (S4)

It is a good application and a greater platform for creating continuous engagement and focus. (S14)

Face-to-face supervision is not a must. When you have something like Google Classroom, you can do research even without meeting the supervisor face-to-face. (S9)

Google Classroom is useful and effective (Negara, 2018) hence it enables plenty of functions that can be used in fulfilling their research.

We were unable to meet the supervisor every week hence most of us researched while attending management training. So, this Google Classroom helped us to contact the supervisor. (S12)

Google Classroom was very useful for getting the research supervisor's assistance than physically attending the research supervision meeting with our tough work schedules as an undergraduate and an employee of an organization. (S7)

Since the students were on a tight schedule as final-year undergraduates while attending management training and a few other subjects in their degree program, they had very limited time.

During the COVID-19 period, we could connect with research via Google Classroom. Therefore, even

without face-to-face meetings, I could work on my research project because of Google Classroom. (S5)

We were performing our research during the pandemic period while adhering to health guidelines under imposed curfew and lockdown. Meantime, I clearly understood the usefulness of Google Classroom. (S7)

The students revealed that Google Classroom was useful in the COVID-19 pandemic situation. This group of students faced the COVID-19 pandemic in the latter part of their research. Hence they had been engaged with Google Classroom from their proposal development stage, the pandemic was not a serious interruption to the students to interact with the supervisor and fellow students.

Google Classroom is a paperless platform. Thus, students can share their drafts and assignments in a short amount of time rather than printing them. It reduces a lot of paperwork. (S4)

It can be created and manage classes, assignments, and online gradings without using paper. Thus, it adopts a clean and user-friendly interface. (S15)

Students perceived Google Classroom as an environmentally friendly and sustainable way of learning. In Google Classroom, students refer to the soft copies and online versions of the materials. They submit the softcopies of their drafts and comments also received online. Hence all the functions are operated electronically, there is zero paperwork in the Google Classroom.

Perceived Barriers to Google Classroom

While the students experience different advantages of Google Classroom, at the same time they experience several limitations as well. Most of the time, the

students overcame such limitations using the face-to-face component of the blended setting.

Not everyone has access to a good internet connection and sometimes that might be costly. (S4)

Sometimes I couldn't reach the things that are posted in Google Classroom at the moment it was posted, because of connection problems. (S5)

In some cases, connection problems occurred due to a weak signal. (S16)

Due to power cuts, working in Google Classroom might not go as smoothly as planned. (S4)

Technical issues with devices and the internet are a usual barrier to learning using Google Classroom (Dantes et al., 2022; Diana et al., 2021). The power failures and poor signal connections interrupt the smooth functioning of Google Classroom. The students viewed it as a main barrier to using such online modes of learning.

When there are students who have other siblings studying at the same time using the same device, that might be an issue as well. (S4)

When the students use shared devices with their siblings it is difficult to manage the same device among all in their studies.

Some students struggled to install Google Classroom on their mobile phones. And also, in the beginning, it was difficult to operate this application. Therefore, giving a guidance session on how to use Google Classroom will bring some good impressions. (S14)

If the student does not have sound IT knowledge, he/she might struggle to join Google Classroom and operate it at the beginning. Using Google Classroom

without expert training (learners are unaware of the basic functions of Google Classroom) makes the students difficult to use this platform (Islam, 2018).

It is difficult for the supervisor and student to explain some serious matters through Google Classroom (especially things related to the analysis part). (S9)

Sometimes the meaning we understand is not correct hence we can't get more explanations about an issue without face-to-face supervision. (S10)

Face-to-face supervision helps to evaluate the students based on their facial expressions and discussions. But in Google Classroom it is impossible. (S17)

Sometimes it was difficult to get instant feedback. (S9)

The students might face some serious issues in their research which should be comprehensively discussed with the supervisor. In such instances, using Google Classroom is not as effective as face-to-face discussions. Since the discussion continues in writing in the Google Classroom it does not encourage detailed explanations. Moreover, the supervisor cannot observe the emotions and feelings of the students in a Google Classroom discussion. Further, the student has to wait until the supervisor views his/her inquiry and replies to it. Thus, it is difficult to have instant feedback from the supervisor at Google Classroom.

Blended Supervision as a Constructive Mode of Research Supervision

The previous themes revealed that mixing Google Classroom with face-to-face research supervision encourages the active learner role of the student, emphasizes the facilitator role of the supervisor, and improves the interactions among the parties.

In this linkage, the students perceive blended learning as an effective mode of research supervision rather than engaging one mode of learning i.e. either face-to-face or online.

Integrating face-to-face and Google Classroom in research supervision enabled us to reap the advantages of both methods. (S7)

A mix of both methods is more effective than only conducting face-to-face or virtual. Because Google Classroom has more benefits and some limitations. Therefore when meeting the supervisor face to face students can mitigate those limitations. (S15)

Hence both face-to-face and online learning have their limitations and advantages, the parties can reap the advantages of both modes while overcoming the disadvantages of using one mode over another.

It would be most beneficial to conduct research supervision on a blended approach. Google Classroom would be much more convenient for students who are working jobs. At the same time, some random face-to-face meetings would be more interactive. (S13)

With the prevailing conditions and facilities available, Google Classroom would enhance the convenience of research supervision. However, I believe that having physical meetings is also important as students would not have that real motivation for the meaningful performance of their research. Hence, some ad-hoc physical supervision meetings are kinds of essential for successful outcomes. (S14)

Hence the students are employed and have job commitments, and they when have limited time, the Google Classroom is

effective to keep the students alive in the research process. Accordingly, the supervisor also can monitor each student's progress and performance. At the same time, random and ad-hoc face-to-face discussions are important to motivate the students and communicate matters that are not feasible in an online setting.

Sometimes it is difficult to meet the supervisor face to face. When the supervisor shares materials, it is easy to learn via Google Classroom. However, face-to-face meetings are suitable when clarifying issues and errors. Therefore, it is more advantageous to use both methods simultaneously. (S5)

The students emphasize the idea that Google Classroom is much more effective to ensure

active engagement with the research while face-to-face meetings are useful to engage with more serious, convincing, and lengthy discussions regarding the vital issues that arise across the research process. Thus, the quality of learning in a blended learning setting is high.

To enhance student performance, educators should integrate traditional teaching with Google Classroom (Hussaini et al., 2020). Hence the students can reap the benefits of both face-to-face and online modes of learning and can trade off the disadvantages from one mode to another, the blended mode for research supervision is much more effective and satisfactory for the students in their research process.

Based on the findings, I developed a concept framework as below (see Figure 01).

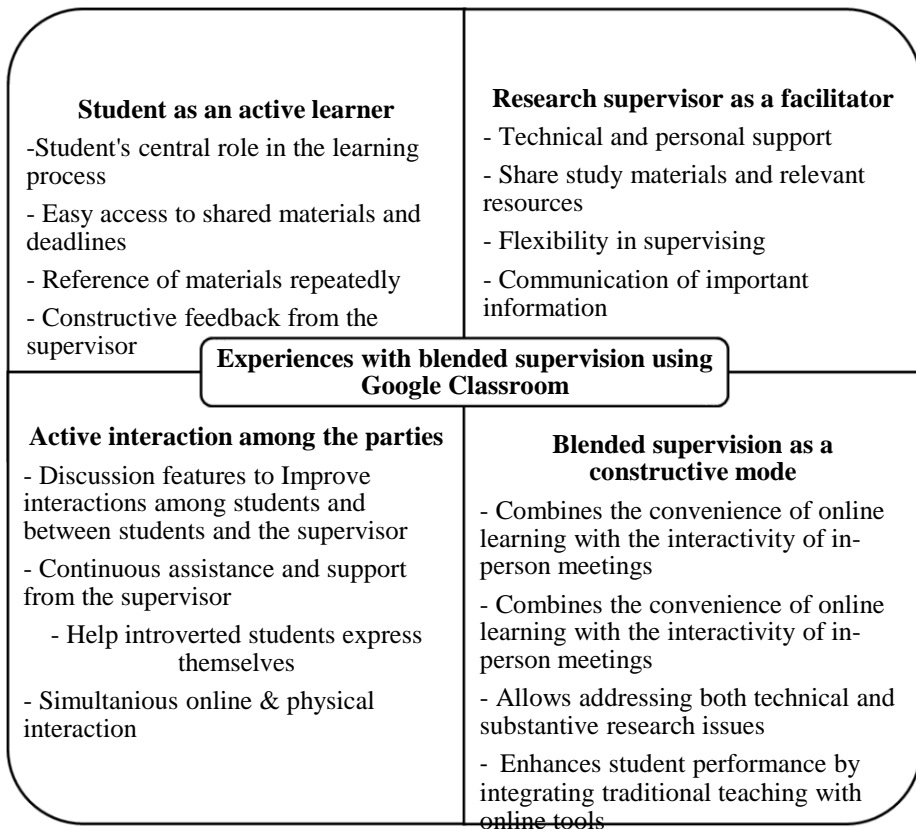


Figure 01: Concept Framework Based on the Findings of the Study

Discussion and Conclusion

The exposed students' experiences in the blended supervision setting can be reflected in terms of the constructivist learning theory. Google Classroom with face-to-face meetings in research supervision promotes the active learning role of the research students. The student's active learning role is a key element of constructive learning. Constructivists view the students as active learners rather than passive ones (Alley, 2008). Accordingly, the student is an active agent of knowledge acquisition (Olusegun, 2015). The students access the materials shared by the supervisor and engage with autonomous learning at Google Classroom (Rahayu, 2022). Accepting and encouraging the student's autonomy and initiative can be reflected in terms of constructivism (Brooks and Brooks, 1993). Moreover, the shared documents enable referring them repeatedly. When the learners get the materials online, they process the information that they get, and thereafter personalize and contextualize such information (Alley, 2008). The student has the freedom to plan his/her chapter within the given deadline. Further, the student can construct an active discussion with the supervisor on given feedback. This process encourages the student's self-regulation (von Glaserfeld, 1995; Rovai, 2004), self-mediated (Doolittle, 1999; Legg et al., 2009), and self-aware (Doolittle, 1999) which are emphasized in constructive learning theory. Further, the students construct new understandings in the Google Classroom through assimilating and accommodating (Garrison, 1993; Olusegun, 2015) where new knowledge gained through shared materials and online discussions are incorporated into the knowledge that they are already known and reframing the meanings and new experiences into the existing mental capacity.

While the student is the center of the learning process, the instructor plays a facilitating and advising role in constructivism (Alley, 2008). The instructor's role in constructive learning is to serve as a facilitator/ mentor for the students as they learn (Schell & Janicki,

2012). The supervisor facilitates the student in a blended learning setting in completing their research project. The supervisor should allow the learners to construct knowledge rather than provide their knowledge through teaching (Doolittle, 1999; Duffy & Cunningham, 1996). In this case, the supervisor initially educates the students on how to access and operate Google Classroom. In the role of the facilitator, the supervisor shares relevant reading materials, audio, and video materials with the students to refer to in completing their chapters. Apart from the materials, the supervisor sets deadlines for the completion of each chapter and shares important course announcements and information. Moreover, the supervisor is flexible in time and follows a customized approach to understanding the capacity and readiness of each student. Constructivist educators encourage their students to understand, analyze, and make predictions about the world around them tailoring the teaching strategies to the students (Gold, 2001). Furthermore, as a facilitator, the supervisor is ready to give support whenever the student needs it. Even during the feedback sessions, the supervisor recommends further readings to the student to become more clear on the issues of the research. Thus, learning moves beyond one-way instruction to the construction and exploration of knowledge (Swan, 2005).

Collaborative and cooperative learning is recognized as vital elements in constructive learning (Carwile, 2007; Huang, 2002). In online learning, the computer serves as the interface for accessing the content and interacting with other users (Berge, 2002). The student can initiate discussions with fellow students and the supervisor using the stream option in Google Classroom. Through consistent communication, students will start to create and validate their understanding (Garrison, 1993). Moreover, the student can continue a virtual chat with the supervisor regarding the given comments on a submitted draft in the Google Classroom. Google Classroom interactions are highly advantageous for students who are shy and



fear to ask questions face-to-face. Accordingly, learners can be stimulated and motivated through interaction. Additionally, it gives instructors a way to encourage students to think about and reflect on the subject matter and learning process through exercises and online discussion technology (Huang, 2002). Thus, improved student-student and student-facilitator interactions in constructive learning (Rovai, 2004) have been enabled by Google Classroom. Overall, Google Classroom improves the interactions among the parties in a blended learning setting.

The students recognize Google Classroom as a convenient, useful, and effective mode of learning (Rahmah et al., 2021) which saves time, cost, and effort (Surani & Hamidah, 2020; Nurbuat et al., 2022). At the same time, it facilitates the students to engage with the research amidst their busy schedules. Moreover, Google Classroom facilitates the smooth functioning of learning in a crisis that interrupts physical interaction (Simbolon, 2021; Subrata, 2021). Furthermore, fewer paper works in the Google Classroom promotes environmentally friendly learning. In contrast, poor internet connection, power failures, shortage of devices, limited IT knowledge, and difficulties in having comprehensive discussions and instant feedback were identified as the main barriers that were faced by the students when engaging in Google Classroom during their research process.

In overcoming barriers, the supervisor does not have any control over technical issues, problems with the devices, and poor connection. However, in terms of lack of technical knowledge, the supervisor can conduct a separate session to educate the student on how to actively engage in the Google Classroom. Moreover, to construct rich and comprehensive discussions with the students, the supervisor can further integrate virtual face-to-face platforms such as Google Meet, MS Teams, Zoom, etc. Overall, Google Classroom can be identified as a much more effective tool to blend with

physical face-to-face meetings to generate students' satisfaction, commitment, and motivation throughout the research project and ultimately produce quality research.

The integration of Google Classroom with face-to-face meetings in research supervision provides numerous benefits that align with the principles of constructivist learning theory. The experiences of students in the blended supervision setting reflect the active learning role advocated by constructivists. By engaging with the materials shared by the supervisor and participating in autonomous learning on Google Classroom, students become active agents in the acquisition of knowledge. The freedom to plan their chapters and engage in active discussions with the supervisor encourages self-regulation, self-mediation, and self-awareness, which are emphasized in constructivist learning theory. The role of the supervisor in the blended learning setting aligns with the facilitator/mentor role emphasized in constructivism. They serve as a facilitator, guiding students in constructing their knowledge rather than simply imparting knowledge through traditional teaching methods. The supervisor shares relevant materials, sets deadlines, and provides support and recommendations as needed. The customized approach and flexibility of the supervisor allow for individualized understanding and readiness among students, promoting their active engagement and exploration of knowledge.

Collaborative and cooperative learning, essential elements of constructivist learning, are facilitated through Google Classroom. The platform allows students to initiate discussions with fellow students and the supervisor, fostering interaction and the creation and validation of understanding. The virtual nature of the platform benefits shy students who may hesitate to ask questions face-to-face. The improved student-student and student-facilitator interactions enhance the learning experience in a blended setting. Google Classroom is recognized by students as a convenient, useful, and effective mode of



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learning. It saves time, cost, and effort, allowing students to engage with research amidst their busy schedules. It also facilitates learning during crises that interrupt physical interaction. The platform's environmental friendliness through reduced paper usage is an additional advantage.

While technical issues and limitations may pose barriers, the supervisor can address the lack of technical knowledge by providing separate sessions to educate students on using

Google Classroom effectively. Integrating virtual face-to-face platforms can enhance comprehensive discussions and instant feedback. Despite the challenges, Google Classroom, when blended with physical face-to-face meetings, proves to be an effective tool that promotes student satisfaction, commitment, and motivation throughout the research project, ultimately leading to the production of quality research.



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