

Virtual Communication for Student Group Projects: the COVID-19 Effect.

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Abstract.

With higher education forced online, the concept of virtual communication has become the new norm. However, virtuality can bring additional complexity to the communication process which can be problematic for students working on group projects. The objective of our research is to explain how the method of virtual communication can influence the quality of communication for learning and thus impact student-group performance. Qualitative data were gathered using audio, non-participant observation, and interviews on three MSc student groups, pre and post campus lockdown in March 2020 owing to COVID-19. As a result, we identified that face-to-face communication in a synchronous environment is characterized by effective interactions among group members who share ideas, information and clarification while virtual communication in asynchronous environments is less critical, explorative and exploitative. The study's practical contribution recommends educators guide students towards using synchronous technology for collaborating on group projects. By locating our qualitative study in the research field of communication, we make an empirical and theoretical contribution.

Keywords: Communication process, Student group-projects, Virtual communication.

1. Introduction.

Effective communication is associated with higher performance and innovation (Edmondson, 2003; Schein, 1998) and therefore a desirable employability skill (Nirmala & Kumar, 2018). As a result, Higher Education (HE) deploys assessment activities that facilitate students' developing communication skills. Today's typical student, brought up in the digital era, has a tendency to communicate via instant messaging, such as WhatsApp, even though they recognise the value of face-to-face meetings (McKinney & Sen, 2016). While instant messaging

is expected to revolutionise communication (Agaoua, 2020), there are boundaries for effective communication for learning (Edmondson & Harvey, 2018).

COVID-19 has changed education forever (Li & Lalani, 2020). With teaching forced online, HE institutions are planning a blended approach for the 2020/21 academic year, as the best-case scenario, but prepared for fully online if another lockdown happens (O'Shea, 2020). Students may be invited to communicate virtually with educators and peers to achieve learning outcomes. Yet we do not know if educators have considered students' method of virtual communication for their group performance. This study contributes to the communication literature by explaining the breakdown in communication for learning when students change from meeting synchronously, in-person to meeting asynchronously online for group projects.

1.1. Communication.

Over the years many studies have tried to define the concept of communication. For example, Müller, Pouliot Evans, Frasché, Kern, & Resti (2018) conceive of communication as a dynamic and transactional process that involves at least two parties whose skills determine the effectiveness of the process (p.12). Bergman, Dellve, & Skager (2016) suggest a one-directional relationship, whereby communication is a linear process of transmitting a message from sender to receiver via some medium (p. 534). A study conducted by Komba (2015) among university students demonstrated that most students perceive communication imperative for learning.

1.2. Virtual communication.

The importance of communication for students in the educational context is affirmed among student groups. A study by Urien, Erro-Garcés, and Osca (2019) underlined that students perceived WhatsApp as an effective tool not only for communicating and interacting but also for developing a stronger team. A similar conclusion has been reached by Ogara, Koh, and Prytubok (2014) who found that students who use Mobile Instant Messaging (MIM) in groups are able to communicate more efficiently in the team. More specifically, students believe that virtual communication in groups makes the communication flow more rapidly and facilitates quicker responses (McKinney & Sen, 2016) and thereby improves the communication process.

1.3. Student group projects.

Group projects are designed to facilitate learning outcomes that include collaboration, critical thinking, and discussion (Alfieri, Nokes-Malach, & Schunn, 2013; Matthee & Turpin, 2019; Nirmala & Kumar, 2018). Group project work provides students with the opportunity to learn more about their subject content through comparing their thinking and knowledge with peers (Gentner, 2010). Sometimes this process is facilitated by educators when they deploy comparison activities to facilitate student self-regulated learning (Carless & Boud, 2018). This means that students must be able to observe, read, or listen to thoughts, ideas and discussion in order to build knowledge (Butler & Winne, 1995; Nicol, Thomson, & Breslin, 2014). In this regard, face-to-face interaction is critical for knowledge transfer (Miller, Zhao, & Calantone, 2006: 710).

This study aims to investigate the effect of the medium of communication on students' experience of collaborating with peers for a group project before and after the university campus went into lockdown mode owing to COVID-19. Even though extant research provides evidence that students' preferred method of communicating is via asynchronous technologies, COVID-19 changed the context for this work.

2. Methodology.

Purposive sampling was used to gather data from students working on a student group project while enrolled on a master's programme, with a university in Dublin, Ireland. Ethical approval was granted by the School, and students were provided with the recommended information sheet before gathering signed consent forms from participating students for both interview participation and non-participant observation. The sample included three student groups consisting of four, four, and six members respectively whose project meetings began before COVID-19 lockdown and continued after the COVID-19 lockdown in March 2020.

2.2. Data Collection.

Data were gathered in two phases. In the first phase, before the COVID-19 lockdown, non-participant observation data were gathered by recording the audio of students' face-to-face group meetings in their synchronous environments and taking written notes on participants non-

verbal communication. In the second phase data, after the COVID-19 lockdown, data were gathered from seven students representing the three groups in semi-structured interviews. Due to the closure of the campus because of COVID-19, we interviewed students using MS Teams. The interview included questions on the format, frequency and attendance at meetings, students' meeting experience, and meeting active participation. For example,

- How many team meetings did you have in-person?
- Thinking about your in-person/asynchronous meeting objectives, did the team achieve their objectives for the meeting?
- Tell me about your experience of those meetings (in-person and virtual).

2.3. Data Analysis.

Data were analysed using two strategies; the narrative analysis was adapted for analysing non-participant observation data that included researcher notes and meeting audio. This approach allowed us to describe the communication interactions among team members during the face-to-face meetings. Narrative analysis is a useful method for interpreting a conversation or a story (Wiles, Rosenberg & Kearns, 2005). Thematic analysis was adapted for analysing semi-structured interview data that allowed us to identify common themes within the data (Cassel & Bishop, 2019). Thematic analysis is a useful method for identifying and reporting common patterns within data (Braun & Clarke, 2006).

2.4. Results.

This study found that when team members met in-person, all students actively engaged in the communication process. Participants described how easy it was for them to share ideas, propose solutions and provide opinions. All student groups used the second half of their in-person meeting to resolve doubts and queries and organize or clarify next steps including deadlines for submission, structure of the report and words count. For example,

"... at in-person meetings there is a close contact with people, everyone can hear their voice, there is more communication (...) I can visually see the others and know that we are all in agreement and it is much easier for people to ask

questions“ (anonymous student).

In-person student meetings are described as a linear process of discussion, brainstorming, questions, answers, and planning (see, Figure 1).

Figure 1: The communication process for students’ synchronous, in-person meetings.



Alternatively, when team members were unable to meet in-person because of COVID-19, they chose to meet asynchronously using WhatsApp and Google Docs. Participants described how the absence of body language had an adverse effect on the communication process. Specifically, participants described their not being able to identify who was actively contributing to the meeting and who was not. In addition, participants commented that communicating virtually via WhatsApp facilitated a passive rather than active engagement in the communication process. The effect of these factors was fewer ideas proposed and less discussion. A student declared:

“I think that in virtual chat people are not accountable like in-person meetings because it is really easy and simple to read the message and say ‘that’s good’ and then do anything and stay behind technology while in person you can talk better” (anonymous student).

Virtual student meetings using asynchronous technologies are described as passive. For example, group members preferred to agree to any solutions proposed by giving consent without sharing or proposing new ideas or adding information. Students were guided in their response to questions such as “everyone is fine with that?” (see Figure 2).

Figure 2: communication process for students' asynchronous, virtual meetings.



3. Discussion.

The in-person communication, as described in Figure 1, shows that the communication process within the synchronous environment facilitated collaboration through discussion, critical evaluation and Q&A. According to Bergman et al. (2016), this type of communication process is characterised by horizontal, dynamic and synergetic interactions among group members. Individually and collectively, the four stages that describe the students' in-person communication process provides rich opportunities for learning on many levels. The first stage, discussion, invites members to engage on a relational level about task elements of their group work which Schein (1998) argues is relevant in studying groups. In the second stage, brainstorming, allows members to engage in dynamic and transactional conversations (Müller et al., 2018) that build on ideas for elaboration. The third stage, questions and answers, facilitate members' learning through feedback (Nicol, 2019). The final stage, planning, is an opportunity for members to strengthen shared mental models of tasks which are found to improve team performance (Healey, Vuori, & Hodgkinson, 2015). This dynamic process of communication also facilitates a psychologically safe climate (Edmondson, 1999) and thereby improves the learning experience (Bergman, Dellve & Skagert, 2016).

Alternatively, Figure 2 highlights how virtual communication in asynchronous environments, such as WhatsApp or Google Docs, disables collaboration through less discussion, critical evaluation, and questions and answers. The post Covid-19, two-step process of communication is sterile (Bergman et al., 2016); it facilitates one member having to dominate the process while others become passive observers. This alternative to face-to-face using asynchronous online technology offers an impoverished learning experience for student group projects. While Shahid and Shaikh (2019) found evidence for WhatsApp as a teaching tool, this study finds WhatsApp

reduces the exchange of ideas and information among students (Komba, 2015).

Communication among students is important for learning (Nicol, 2019; Nirmala & Kumar, 2018). For example, Master's students found informal discussion among peers is important for improving their understanding of what was covered in class (Carvalho, 2019). While communication may be defined as the basic process of transmitting a message (Bergman et al., 2016) it is much more complex for learning. WhatsApp is useful for connecting students but a platform that facilitates synchronous discussion, brainstorming, and questioning is preferable for enhancing the student experience, learning, and performance when working on a group project. Therefore, this paper recommends educators guide students to a synchronous interface for group projects.

3.1 Contribution.

The present study provides empirical data from rapid research on the effect of COVID-19 on the communication process for students collaborating on formally assessed group projects. The findings of the present study also make a theoretical contribution to the communication literature by providing findings on the negative effects of asynchronous communication for students when collaborating on summative group projects. In contrast to Ogara et al. (2014) and Urien et al. (2019), virtual communication using asynchronous technology is not perceived as useful by students working on group projects because it weakens the opportunity for learning by reducing the capacity for discussion, brainstorming and questioning.

3.2 Future research.

Even though our study gives an important contribution both from an empirical and theoretical perspective, it is limited by small sample size. Future research will be necessary for exploring communication not only from synchronous to asynchronous environments but also using different scenarios and participants. For example, future research may focus on how communication changes from synchronous and face-to-face to virtual and asynchronous environments with a sample of educators and students.

3.3 Conclusion.

The present paper offered the chance to study both face-to-face and virtual communication

among students enrolled in a master's programme. Based on what emerged during the analysis process, we can conclude that communication interactions in synchronous environments are characterized by collaboration and cooperation. On the contrary, virtual communication in asynchronous environments, such as WhatsApp and Google Docs platforms, facilitated less critical, explorative and exploitative communication that is less effective for learning and facilitating high student group performance.

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