**COLLABORATIVE KNOWLEDGE BUILDING USING MICROSOFT SHAREPOINT**

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**Abstract** – An effective computer-based collaborative knowledge building platform must support collaborative activities such as articulating perspectives, debating alternative viewpoints, clarifying meanings, linking ideas, building consensus, and reflecting on learning. The current study reports findings of a qualitative study that was conducted to understand the effectiveness of Microsoft SharePoint as a collaboration platform for engineering students’ group projects. Students reported that SharePoint had most of the affordances they would desire in an ‘ideal’ collaborative learning platform. Students also perceived training and guidance in the use of SharePoint as important and integral to their success and overall experience of SharePoint. The study concludes with recommendations instructors who use group projects for assessments, including (1) the need to provide and encourage the use of well-integrated platforms, (2) the need to set explicit standards for providing peer feedback and (3) the need to provide guidance and support for students using collaborative learning platforms.

**Keywords:** collaborative knowledge building, computer supported collaborative learning, Microsoft SharePoint

1. INTRODUCTION

Collaborative approaches to learning, e.g. social constructivism, group work, collaborative knowledge building, etc. are widely accepted by educational researchers and practitioners to be the most effective modes of learning [1], [2], [3], [4]. Richardson lists the following characteristics of constructivist pedagogy [5]: respect for individual students and their diverse backgrounds; group dialog to explore a domain to build a shared understanding; incorporation of authoritative domain knowledge from a variety of sources; opportunities of students to challenge and modify existing beliefs; and development of metacognition as students reflect on their learning.

According to Scardamalia and Bereiter [2], the key themes in collaborative knowledge building include: community knowledge advancement; idea improvement; knowledge-building discourse; constructive use of authoritative information; and emergent understanding. The SECI knowledge creation theory of Nonaka [6], [7], which is a knowledge co-creation framework, suggests that knowledge is created through four interacting processes: socialization, externalization, combination, and internalization. A key idea is that tacit knowledge held by individuals must be explicitly shared and combined with the knowledge of a group, resulting in learning of new tacit knowledge.

Stahl has elaborated these themes in a collaborative knowledge building model that explicitly identifies key activities that should characterize collaborative knowledge building, including articulating personal perspectives and viewpoints, comparing and integrating multiple perspectives, identifying and reconciling contradictions, filling gaps, clarifying and negotiating meanings, linking new knowledge into existing personal and group knowledge structures, modifying beliefs, and reflecting on learning [3], [8], [9]. While it is by no means definitive, the collaborative knowledge building model proposed by Stahl (Figure 1) provides a very useful framework for thinking about the interacting processes and activities that characterize collaborative knowledge building. Furthermore, it helps identify key affordances required in any collaboration tool.

![Figure 1. Stahl’s collaborative knowledge building model [8].](image)

Computer Supported Collaborative Learning (CSCL) is emerging as a new field focused on how to use technology to support constructivist or collaborative learning [10], [1].
Most CSCL studies investigate text-centric tools like wikis and discussion forums, and the majority focus on student perceptions (e.g. [11]). Few studies have analyzed the adequacy of collaboration tools (e.g. [8]), and many available tools lack important and advanced affordances for rich collaborative activities. Also, most studies observe how students use collaboration tools naturally, without any intervention or guidance. A common finding is that student groups demonstrate limited collaboration, and that most groups decompose a group task into individual parts that can be done independently. Literature suggests that these deficiencies in collaboration persist because student educational experiences are still firmly rooted in the behaviourist tradition of lectures, assignments and examinations, and that students have little experience or training in effective collaborative processes [12]. It is clear that students do not engage in rich collaborative behaviours naturally, and many CSCL researchers now agree that intentional training and ongoing support from instructors are key ingredients for rich and successful collaboration among students [1].

The current study fills the research gaps identified by investigating the use of a collaboration tool (Microsoft SharePoint) with advanced features for collaboration in a context where instructor guidance was provided. The research question that guided the study is: “What is the effectiveness of Microsoft SharePoint as a collaborative knowledge building tool in the context of undergraduate and graduate group research projects?” The key objectives of the study were to understand (1) students’ perceptions of and experiences with computer supported collaborative learning using SharePoint, (2) how students deemed SharePoint as beneficial or detrimental to collaboration, (3) students’ collaborative practices and (4) key merits and demerits associated with the formative instructor feedback and guidance that was provided.

2. COURSE CONTEXT

The study was conducted in the context of a combined undergraduate/graduate engineering course entitled “Production Management for Engineers”. The aim of the course was to examine lean production principles and practices adopted by world class manufacturers. The course enrollment consisted of upper year undergraduate and graduate students. As part of the course, students were required to complete a group project. Each group had an average of 3 members.

The graduate students were required to complete a group report on a topic related to lean manufacturing. Several topics were suggested, and they were free to propose their own topics as well. The topics they chose included: issues and problems with lean manufacturing; the fall of General Motors; and Enterprise Resource Planning (ERP) tools.

The undergraduate student groups were required to design a production system for a typical manufactured product of their choice. Products they chose included a Microsoft Xbox game controller, a toaster, a skateboard, an automotive clamp, and a ratchet wrench. Specific tasks and deliverables included market analysis, product dissection and reverse engineering, lifecycle analysis, market demand and production scheduling, design of a production system, and product and process quality.

Students were trained to use Microsoft SharePoint for collaborating and coordinating their group projects. The training focused on the following features: document libraries for saving and sharing documents, shared Microsoft Office suite for collaborative authoring (in Word) or calculations (in Excel), task planner and a discussion forum. As part of the grading scheme, students were expected to engage in the following activities within SharePoint: collaborative authoring; asking and answering critical questions; seeking and providing clarification; sharing, debating and discussing each other’s viewpoints; providing logical and evidence-based arguments; rebutting and countering arguments; and through these processes, reaching consensus on issues.

The instructor, who was a member of each SharePoint group, provided ongoing feedback as projects evolved throughout the term. This feedback focused on project specific issues and students’ use of SharePoint. At the end of the project, each student received a grade for the quality and effectiveness of their engagement based on the aforementioned criteria. This was added to their group grade which was based on the overall quality of the project.

3. METHODOLOGY

Upon completing the project, all students were invited to participate in in-depth interviews aimed at addressing the study goals. A total of 10 students agreed to participate in the interviews. A choice was made to utilize qualitative methods (i.e., interviews) because the study goal was to capture students’ subjective experiences using SharePoint to collaborate with their colleagues. Interviews were used because of their ability to dig deep into students’ personal experiences and stories on collaborating in a CSCL context. The interview questions covered the following themes:

- Students perceptions of and experience using collaboration platforms.
- The merits and demerits of Microsoft SharePoint as a collaboration platform for group projects.
- The usefulness of SharePoint’s features for collaboration.
- Approaches to collaboration (i.e., asynchronous or synchronous, and project responsibility allocation).
• Benefits of using SharePoint for collaborative activities (e.g., knowledge building, interacting with group members, comparing perspectives, etc.).
• The use of other tools and methods to complement collaborations within SharePoint.
• Perceptions of what constitutes true collaboration.

On average the interviews lasted about 55 minutes each, with the longest being 1 hour and 15 minutes and the shortest lasting approximately 40 minutes. After all interviews were conducted they were transcribed verbatim and imported into a qualitative software analysis suite (NVivo 10) for analysis. NVivo made it possible to create coding categories and capture clusters of transcribed interviews into relevant categories based on the accounts of participants. A deductive approach to coding was used. This involved using the interview questions as the coding structure. In this context, responses were coded under their respective questions.

4. RESULTS

The results are present under five main thematic areas that were addressed in the interviews. These include students’ previous experiences with collaboration platforms, the perceived advantages and disadvantages of SharePoint, students’ perspectives on instructor training and feedback, the strategies used to collaborate by students and other issues.

4.1. Students’ CSCL Perceptions and Experiences

As an introductory question, students were asked about how useful they consider collaboration platforms and other computer and mobile applications that could be used for collaboration. All students acknowledged that these platforms were useful for project management, sharing information easily, ensuring that tasks are completed faster and working together remotely.

A major thematic area that was addressed in the interviews concerned students’ previous experiences using collaboration platforms for group projects and/or assignments. All students acknowledged using various computer-based platforms to coordinate group work. The most dominant of these platforms were Google Docs, Facebook and email. While Google Docs was deemed beneficial because of the ability to collaboratively author documents on the same page and monitor changes in real time, Facebook was considered useful for instant messaging. In general student felt it was essential to be able to reach group members in real-time. A few students also acknowledged using emails for document sharing and communication. Nonetheless, email was generally framed as cumbersome because of difficulties tracking different versions of the project. In the words of one student, collaborating via email tends to be “time consuming and very inefficient” (Student 5). Other platforms that were mentioned by a few students were WhatsApp (a phone messaging application), Skype and text messaging.

In general, there were varying opinions on the most useful collaborative learning platform, with students acknowledging that they often used two platforms for their group projects, i.e., one for communicating and the other for circulating and sharing documents. All students agreed there was no single platform with well-integrated features for the range of collaborative activities that happen in group project contexts. Students accounts also suggested that in group project contexts, it is sometimes challenging to come to a consensus on which platform to use for various collaborative activities. For example, one student described an instance where three of their four group members agreed to collaborate on Facebook. However, this was not possible because the fourth team mate had “deactivated their Facebook account” (Student 9).

Considering the range of computer- and phone-based platforms students alluded to using for past group projects, each student who was interviewed was asked to list and justify all the features they would like to see their version of an ‘ideal’ collaboration platform. Interestingly, there was some significant consensus on the following features:

• Collaborative authoring and document sharing

Students identified the need for a feature that would allow all group members to write and/or make changes to the project document over a remote internet connection. This is captured in following quote from one participant who outlined their ideal collaboration platform:

... I would say the ideal platform for me would be something that looks very much like a Microsoft Word document because I’m very used to working in that and I’m used to looking in the headings and looking in the menus where stuff is... so I would want it to look like that but I would want it to function like a Google Docs (Student 1)

Additionally, more than half of those interviewed acknowledged that they would like to see real-time changes as their colleagues’ work on the authoring platform. Students also expressed the desire to have an accurate tracking system within the authoring platform that would show who wrote what. Finally, students discussed the importance of having a file sharing system within their ideal collaboration platform. One student stated, that they would “like a platform that facilitates the easy transfer of files in real time and not just a little picture” but also, “big files...” (Student 5)

• Real-time Communication

All but one student acknowledged the need for a real-time communication feature within their ideal collaboration platform. In this context, a few students stated that the ideal collaboration platform should have a multi-user video chat feature, while the majority suggested that a feature with chatting via text would be sufficient.
• **Cell Phone Integration**

  Students largely suggested that their ideal collaboration platform should be able to work on smartphone devices with real-time notifications. This is exemplified in the following quote:

  > I like to be able to view things on my phone. You know, maybe I’m away... maybe I’ll go home for the weekend and some people in my group would be working on the project. It will be helpful if I can just check in and see what’s going on... (Student 7)

  Relatedly, other students suggested that phone integration would make things convenient by ensuring they are always on track with new developments and be able to contribute to the project remotely.

• **Simple interface**

  Students stressed that the ideal collaboration platform should be simple and easy to use. In the words of one student, they would like to login easily and be able to see a “full overview” of all features within a single page and “navigate” the site easily (Student 10).

• **Other features**

  A few students had features they would want in their ideal collaboration platform that were unique to them such as the presence of a voice note feature and a shared project planner.

  What stands out in students’ description of their ‘ideal’ collaboration platforms is their desire for a well-integrated platform that enables real-time communication and authoring, supports file sharing and has simple interface. Most of the ideal collaboration platform features students identified are available in Microsoft SharePoint. Indeed, students often referred to specific SharePoint features while discussing their ideal collaboration platform.

### 4.2. Student experiences using SharePoint

In terms of examining students’ experiences using SharePoint, we wanted to capture issues that stood out to students the most. Hence, the interviewer started out by asking an open-ended question that sought to understand the perceived effectiveness of SharePoint, prompting participants to discuss the merits and demerits of the platform that stood out to them. There was a consensus that SharePoint was instrumental in helping students develop their projects from start to finish. The most discussed benefit of SharePoint was the ability to collaboratively author the document using Microsoft Office (with all its features) and the ability to provide feedback using tracked changes. This is captured in the following quote:

> ...it (SharePoint) is nice because you get the full functionality of Microsoft Word running on your computer and you can you can share updates with your group members and things like that... it is good for seeing who’s contributed what with the track changes...I think was a good idea because you know, that’s the ultimate accountability as far as enhancing workflow in a group (Student 3)

As evident in the quote, students also felt that collaborative authoring enhanced accountability because each person’s contribution was visible to everyone else.

In terms of accountability, approximately half of the students interviewed felt it was useful to have the instructor as part of each SharePoint group. They also felt this enhanced accountability. As one student stated, SharePoint was advantageous because it allowed the professor to monitor the group project and ensured that “if anybody deleted anything or changed anything, the professor would know it” (Student 1). Student 5 also echoed similar sentiments:

> So shows us (each group member) everybody and what they did...and the instructor can see everybody’s part and its kind of really good to evaluate the project and ensuring that everyone is contributing...

In terms of enhancing collaboration, other merits of SharePoint that were discussed included (1) the feature that stored an old version of the document in archives every time a change was made, (2) its flexibility in terms of being able to work online and offline and the ability to work either in a browser or within the Microsoft Word application. Concerning the former, one student described their experience circulating a group project document via email attachment and the challenges faced in trying to trace older versions to review ideas that had been deleted along the way. Email in this context was described as an “inefficient” tool for collaboration. The participant described SharePoint as being “convenient” because it automatically saved new document versions with associated dates whenever changes were made by a group member (Student 2). This made it possible to trace and bring back old ideas from older document versions. This is further discussed in the following quote:

> I think one of the strong advantages (of SharePoint) is...it allows people to be anywhere working on the same document with reasonable reliability, and that is a very useful for getting group work done you know versus somebody write on part and email it. That takes time, right? ...yeah, so I think that is one strongest points (Student 8)

Concerning the flexibility of SharePoint students appreciated the fact that they could work within Microsoft Word on a browser. For instance, a student reported having to borrow a computer that did not have Microsoft office installed and still being able to work on the group document via a browser. Students also acknowledged that it was beneficial to be able to download the document, work on it offline using the Microsoft Office and later upload changes when they had internet access. In this
context, students felt there were no limitations to getting work done. The convenience of being able to work remotely was another key recurrent theme as demonstrated in the following quote:

...without it (SharePoint) I don’t see how I could have done the project because I don’t really stay on campus except when I have classes or have a meeting. If I have work, I am gonna go home, I am gonna do everything at home. So, SharePoint is so helpful... (Student 5)

While the above-mentioned issues dominated discussions on the benefits of using Microsoft SharePoint for group projects, a few interviewees acknowledged finding the discussion forum, Microsoft Excel, OneNote and the cloud storage features within SharePoint helpful, though there was a consensus that these tools were not utilized extensively. Although this could be deemed surprising because students received training on using all features in SharePoint, it was obvious that the decision not to use these tools was partly due to technical glitches.

Regarding the challenges faced using SharePoint, the major issue that emerged in eight out of the ten interviews concerned minor technical glitches. Another major complaint was with the fact that SharePoint could not be used on mobile devices. Here, we note that Microsoft recently released an Android and iOS application that makes it possible to use the platform on smartphones. A few students complained about discussion forums not sending instant messages and overall navigation being cumbersome. Reports of these technical glitches and the need for cell phone integration are collectively captured in the following quote:

The two things (SharePoint challenges) that come to my mind...it should make sure that whatever work is done by me saved in my name even if another person comes and changes it. It should not put their name on my part of the work...the second one would be that, if possible, it would be good to have the SharePoint integrated into your handheld device so that you can get notification on your cell phone and you can chat when a group member makes changes to the document (Student 7)

The above quote captures issues with tracking ‘which group member wrote which sections of the project’ within SharePoint and students’ desire for an application that would allow SharePoint to be used on smartphones. Relatedly, students expressed frustrations about the unavailability of real-time cell phone notifications when changes were made to the group document or messages were sent via the forum.

4.3. Students’ Feedback on Instructor Support

To better understand how useful student found instructor training and support, students were asked to describe their learning curve using SharePoint. While seven out of the ten students interviewed said they found it easy to use, three acknowledged having to navigate a steep learning curve. Those who deemed SharePoint easy to use often pointed to the presence of a full Microsoft suite as exemplified in these two quotes:

Yes it’s (SharePoint) fairly easy to use. Your whole life you use Microsoft Word and Excel, right? So, you already know about that. It’s just learning how to click within SharePoint...it’s very fairly easy to use. Like if you’re someone who has any form of previous computer knowledge, you should be able to get it pretty much right away (Student 5)

Similarly, another student stated that “SharePoint doesn’t take much time to learn” because it resembles Microsoft Office in many ways.

Of the few students who suggested that Microsoft SharePoint was not easy to use, two of them asserted that the platform is “not very intuitive” (Student 2). While another student made the following claims

...it (SharePoint) took me some time to get used to. Even today, I won't say that I am hundred percent knowledgeable about SharePoint there are still some things that I haven't explored and we haven't used... but definitely I would say it requires you to put in some time to understand each and every step of it ... (Student 8)

As evident in the above quote, the student in question acknowledged not fully exploring SharePoint.

Students were then asked about their past experiences receiving instructor training and guidance on using collaborative learning platforms. No student alluded to ever receiving instructions and guidance on how to collaborate on a collaboration platform from an instructor. In reflecting on how training and guidance could have been beneficial for past projects, students acknowledged three major points: (1) training would have ensured everyone was on the same page and minimized time wasted in deliberating how to collaborate, (2) training and encouragement to use specific collaboration platforms could have helped avoid the pains of circulating project documents via email, (3) training to use collaboration platforms could bring students with no exposure to such platforms up to speed.

Students were then asked if the training and support that was provided to guide them in their use of SharePoint was helpful. All but one student who were interviewed agreed that the training and guidance were valuable for various reasons, the three most recurrent of which were: (1) the fact that it provided a much-needed foundation for getting started with SharePoint, (2) the fact that it created opportunities for first-time users to get comfortable with the platform quickly and (3) the fact that it made students aware of some features that otherwise would have been hidden if collaboration in SharePoint was independently directed. It is worth noting that all students who took the
course had never used SharePoint. A participant described the training as helpful in the following quote:

_The training helps with the basics, like how to start doing things in SharePoint. It helped me to understand how SharePoint works...various things that could be done in SharePoint..._ (Student 9)

...the training really helped... eventually when you are using the SharePoint, then you learn the most. For me this was a new software, so it took some time to become to be good with it. The most helpful aspect of the training for me was learning about the user interface and how to work it...because I didn't know how it would work. Also going through the track changes feature was very important..._ (Student 1)

The final question students were asked in the context of training concerned how it could be improved. Four students stated that a hands-on session where students could be guided through a step by step process involving “using different tools within SharePoint” would be beneficial (Student 5). Two other students made implicit claims that suggested they were quite overwhelmed by the range of features in SharePoint. One of these students suggested using SharePoint for assignments throughout the term with emphasis on different tools to help them adapt to the platform, while the other suggested ongoing training throughout the term with a focus on different features during training sessions. Most students admitted to not utilizing the training manual that was created by the instructor to guide them in their use of SharePoint.

### 4.4. Collaborative Mechanisms

Though the current study was interested in understanding students’ use of SharePoint as a collaborative learning tool, the authors were equally interested in understanding the dynamics of collaboration. As literature and anecdotal experience suggest that students working in group contexts tend to divide the tasks and work independently, we asked students if they divided responsibilities and the grounds on which tasks were divided. All interviewees acknowledged that their group divided tasks among members. The grounds on which tasks were assigned included (1) writing proficiency, (2) assessment of group members’ abilities in the engineering context, (3) equity (i.e., ensuring that each person did an ‘equal’ amount of the work), (4) based on individual schedule (e.g., students who were going to be busier during the term worked on the early parts of the project such as the introduction), (5) work experiences in the engineering sector, (6) comfort level with different aspects of the project.

A challenge with dividing up tasks lies in the fact that all group members do not engage in all aspects of the project. This is also likely to result in less deliberation and brainstorming. This was evident when students were asked if they felt like they were ‘actually collaborating’ to the best extent possible while working on SharePoint. In general reactions were often mixed, and are best captured in this response:

> yes and no... because we did split up the project parts so we were working independently for half the time and then when we eventually put the project together, we started to collaborate by saying we should add this and that or change this and that...yeah. Not much when the project commenced... but later on collaboration begun to take place... (Student 3)

Similarly, another student explicitly stated that “I don’t think we (i.e., the students project group) were collaborating often” (student 5). Another student stated that based on how the professor defined collaboration “much of the project seemed to be individuals doing their own thing” (Student 7). Some students suggested that collaborative document authoring promoting some level of collaboration, since they would always look at the section of their project their friends were working on and try to build on those sections. This is partly captured in the following quote:

> My part was such that I needed to finish it before everybody...because everybody needed to see and build on my results, so I always post on SharePoint and then posting on Facebook saying...go and look and see what I did. Ooh yeah, I feel like I was really working with my colleagues (Student 10)

As demonstrated in the above quote, there was some level of codependence that was made possible through collaborative authoring in SharePoint. However, this does not represent deep engagement which should be characterized by deliberation, intellectual arguments and consensus building.

Students were also asked if they engaged in other collaborative learning activities outside of their engagement on SharePoint. Despite collaborating on SharePoint, most students acknowledged collaborating synchronously via face-to-face meetings. Most accounts revealed that these meetings occurred at the very early stages of the project and towards the latter stages. According to student accounts, this kind of collaboration was used for: (1) critical decision making, (2) working on the conclusion and latter sections of the project to make sure individual sections jelled well, (3) organizing the project closer to the due date, (4) clarifying project-related details. Hence, most of the work was done through asynchronous collaboration. Finally, students acknowledged using Facebook quite extensively for the purposes of communication. They reported that Facebook was often the application of choice because messages were instant. They also liked the fact that the application showed everyone who would see messages, eliminating the
likelihood that group members would pretend as if they didn’t see messages.

4.5. Social context and collaboration

Although this study did not set out to understand the social dynamics of collaboration, this remained a recurring theme throughout interviews. Specifically, this issue emerged during the discussion of issues around peer feedback, instructor feedback and communication outside of SharePoint. Concerning the issue of peer feedback, students sometimes felt the need to provide one-on-one feedback to their peers outside SharePoint. They often justified this decision by claiming that providing feedback that would be visible to the whole group would seem disrespectful, especially in contexts where non-native English speakers wrote content that wasn’t very coherent. Hence, the choice to communicate privately with individual group members when such situations arose.

As noted earlier, students claimed that having the instructor as a member of their SharePoint groups was beneficial; however, this was juxtaposed by the idea that having the instructor as a group member was disadvantageous. Specifically, student communicated changes off SharePoint because they felt their colleagues would seem inferior to the instructor if peer-feedback was communicated directly in SharePoint.

The practice of dividing the project into individual parts and working on the different parts individually was also found to generate a sense of ‘ownership’. Hence, students felt it was inappropriate to directly correct sections of the projects that were allocated to their colleagues. In this sense, a few students acknowledged that thought they felt some things written by colleagues were detrimental to the project, they could only ask their colleagues to make certain changes at their discretion and the leave the decision to the individual who was assigned the section in question. One student noted that, at a point, their group member was resistant to changing a glaring mistake and being defensive. This student did not push any further for the change to be made, since the section of the project that had the error wasn’t their ‘part’ (i.e., allocated to them).

Finally, students reported that alternative means of communication made it possible to bond. Since students rarely had project group meetings, they reported using communication channels such as Facebook for the purposes for bonding. They reported feeling freer to be informal on Facebook, since professor’s engagement in their SharePoint group did not make it possible to be informal and “honestly” share their challenges and frustrations. They additional felt that having casual communication within SharePoint would make the instructor deem them as not being serious. Surprisingly, there was a consensus that a medium for informal communications was necessary.

5. DISCUSSION

This section discusses major findings that emerged from the interviews and their implications for instructors teaching courses with group projects. As instructors, it is easy to assume that students will naturally come up with mechanisms for collaborating and coordinating their efforts in group project contexts. In part, this study reveals that students have varying preferences on how collaboration in group project contexts should be done and what platforms should be used for collaboration. Additionally, students stand the risk of using tools that are inefficient (e.g., emailing multiple versions of documents). In general, students engaged in group projects are often faced with the challenge of coming to an agreement on what tool to use and how to use it. This study reveals the importance of providing students with a suitable collaboration platform, along with instructor training and guidance.

How should the ideal collaboration platform look like? This remains an unanswered question. However, based on the outcomes of the current study, there is a general agreement that the ideal collaborative platform should have certain features. These include (1) a feature for collaborative authoring and peer feedback, (2) real-time messaging and communication, (3) cell phone integration with notifications when changes are made to the document, (4) a platform with a simple interface and (5) a platform that accurately tracks the work done by each group member. While SharePoint has all these affordances, it is not without its own challenges. Microsoft has recently introduced Microsoft Teams, which addresses many of the limitations of SharePoint that students have identified. Teams incorporates chat-based conversations, provides notifications of conversation posts, and provides support for mobile platforms. The user interface is simpler than SharePoint. While we deem SharePoint useful, we also recommend instructors explore the option of using Teams. Although Teams is built on top of SharePoint and is being promoted by Microsoft as a platform for collaboration, the principal investigator recently experienced minimal student complaints about glitches relative to when he used SharePoint.

The current study suggests that training and guidance will always be a need in contexts where students engage in collaborative work on a collaboration platform. This is justified by several findings that include, but are not limited to, students having different levels of proficiency in using collaborative learning platforms, the fact that students may not me on the same page on how to utilize collaboration platforms coherently even when they all have the competencies necessary to utilize the platform. This study finds that providing a collaboration platform with training and guidance ensures that student project groups are on the same page concerning how to utilize the platform. This ensures there is organization in the collaborative practices.
of group members, thus ensuring a smooth project evolution.

As evident in the current study findings, the practice of dividing tasks in group project contexts does not bode well for the practice of deep collaboration. It results in an instance where students work together throughout all phases of the project, combine their individual sections and try to enhance the flow of the document prior to submission. Additionally, in the context of the current study, it was found that students face various challenges giving critical feedback to their colleagues. A potential intervention for the former challenge is to divide the project into multiple phases and allocate time periods within which students must collaborate and complete these small facets of the project. In the context of the current study, we are unable to clearly assess the depth of feedback that students gave their peers, especially because most students acknowledged doing this off SharePoint. Instructors should consider setting guidelines on how peer feedback should be provided. For example, this could take the form of explicit statements that should precede all feedback. For example, this could take the form of requiring students to use statements like “I disagree with this statement because…. (provided evidence, cite credible source of evidence and justify your position)”. Such requirements could also lift the weight of feeling that feedback could be taken as a condemning act by colleagues.

In the context of the course that was used for this study, the instructor joined all student groups on SharePoint, engaged with students and awarded each student an individual mark for the quality of their peer-feedback. Students deemed this practice as both beneficial and disadvantageous in some cases. In this context, we acknowledge that there is no single correct answer that addresses this challenge. However, instructors could explore the option of having Teaching Assistants join student groups and provide feedback, since that might be less daunting to students. As the course instructor, a benefit of this practice rested in my ability to ensure students didn’t stray from the topic and being able to intervene when major errors were apparent.

6. CONCLUSIONS

The current study conducted an exploratory qualitative study to understand students’ experiences using Microsoft SharePoint as a collaboration platform for the group projects. It also explored student perspectives on collaboration. In conclusion, the response to SharePoint as a collaboration platform was generally positive. However, minor technical glitches with SharePoint were reported. SharePoint contains most of the affordances that students would like to see in an ‘ideal’ collaboration platform. This is further enhanced by Microsoft’s recent addition of Android and iOS apps that make SharePoint usable on mobile devices. At the time of the study, this was not possible.

As noted, Microsoft recently launched Microsoft Teams, which adds useful capabilities to SharePoint and addresses many of the limitations identified by students. Students currently using Teams are not experiencing the glitches that were pronounced in SharePoint. We encourage instructors seeking to use collaboration platforms to explore Teams.

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8. REFERENCES


