Arts Instructional Support and Information Technology (Arts ISIT)

Summary Report: Collaborative Learning TLEF Project

November 28th, 2023 (*v.1.0*)

THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Arts

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Introduction

This project involved the piloting and evaluation of collaborative learning activities in the Faculty of Arts and was motivated by feedback from instructors who identified a need for increased instructional and technical support in this area. With funding secured through a Small TLEF proposal, Arts ISIT and instructor co-applicants explored approaches and tools for facilitating collaborative learning activities across nine courses between 2020W2 and 2022W2. More specifically, the purpose of this project was to build capacity within the Faculty of Arts to facilitate the adoption of peer pedagogies through collaborative document authoring, supporting activities like peer review, group projects, and small group writing.

Executive Summary

This report presents a summary of the evaluation results from Years One and Two of this project. During Year One, pilots were conducted using Microsoft Teams as the primary tool to facilitate collaboration. In Year Two, pilots presented Microsoft Teams as an option, but allowed student groups to choose their preferred tools for collaboration.

Specifically, collaborative learning activities were piloted and evaluated in the following courses:

Term	Course	Title	Instructor
2020W2	WRDS 150A	Writing and Research in the Disciplines	Michael Schandorf
2020W2	WRDS 150B	Writing and Research in the Disciplines	Laura Baumvol
2020W2	SPAN 280	Revolution!	Brianne Orr Alvarez
2020S	CHIN 133	Basic Chinese I: Part 2 (Non-Heritage)	Qian Wang
2020S	CHIN 134	Intensive Basic Chinese I (Non-Heritage)	Qian Wang
2020S	CHIN 494	Classical Chinese Literature I & II (Heritage)	Zhaokun Xin
2021W1	WRDS 150A	Writing and Research in the Disciplines	Michael Schandorf
2021W1	WRDS 150B	Writing and Research in the Disciplines	Laura Baumvol
2021W1	SPAN 280	Revolution!	Brianne Orr Alvarez
2021W1	CHIN 131	Basic Chinese I: Part 1 (Non-Heritage)	Qian Wang
2021W1	GEOG 121	Geography, Environment and Globalization	Siobhán McPhee
2022W1	SOCI 102	Sociology of Personal Life	Neil Armitage
2022W1	WRDS 150B	Writing and Research in the Disciplines	Laura Baumvol
2022W2	SOCI 224	Sociology of Personal Life	Neil Armitage
2022W2	SOCI 290	Global Pandemics	Katherine Lyon
2022W2	WRDS 150B	Writing and Research in the Disciplines	Laura Baumvol
2022W2	ENG 243	Speculative Fiction	Gisèle Baxter

Overall, students reported that their experience with collaborative learning activities was positive with 77% reporting that these benefitted their learning. Both instructors and students reported several advantages associated with these activities:

- **Creating community and relationship building:** A sense of community was particularly important for classes taking place online, and activities allowed students to build friendships while becoming familiar with each other's strengths and work styles.
- **Student engagement and active learning:** Collaborative learning activities helped to create more participatory classrooms and facilitate critical thinking and discussion among students.
- **Student directed learning and skill development:** These activities empowered students to take greater responsibility for their learning and negotiate roles within groups, while developing soft skills, like time management, communication and critical thinking that were transferable to other academic and real-world settings.
- **Diverse perspectives and skill sets:** Collaborative learning encouraged empathy and intellectual diversity, while enriching student's understanding of the course material. Opportunities to collaborate with non-academics and professionals provided practical skills and helped them to apply their knowledge in real-world settings.
- **Flexible learning:** Online collaborative learning tools enriched in-class discussions, as students could present and debate their work. Hybrid approaches allowed students to complete group activities at times that were convenient for them.
- **Division of responsibility and reduced workloads:** Being able to divide tasks based on individual skills and interests not only increased student engagement and motivation but also gave them a greater sense of ownership and responsibility over their project.
- **Feedback:** Online collaborative activities allowed instructors to provide more frequent and timely feedback to students at multiple stages of the learning process. Feedback could also be communal, making the feedback process more scalable. Self- and peer-feedback also benefited as students could more easily compare their work and negotiate edits.
- **Improved insight into student learning:** Online collaborative learning activities allowed instructors to trace student engagement, enabling more timely and specific feedback. This was also a valuable resource for peer learning and study materials for the students.
- **Improved collaboration and digital literacy skills:** Collaborative activities were structured to help students learn how to work effectively in a team. They also emphasized the importance of teaching students to use digital tools more critically.

However, instructors and students also identified some barriers around implementing collaborative learning activities that could be improved. Broadly, these were related to:

- **Monitoring and managing group processes:** While instructors found features like version history in Microsoft Teams useful for tracking student engagement and contributions, this also required considerable time and effort.
- **Increased workload and unequal distribution of work:** Students did not feel the time and effort required for group activities were always reflected in the grading system, and issues of unequal work distribution were compounded by the "free-rider problem" and difficulties coordinating schedules.
- **Course design, structure, guidance, and feedback:** Students reported the need for more specific grading rubrics, clearer instructions regarding group roles, and timely/consistent feedback from their instructors and teaching assistants.

- **Scheduling changes and time management:** Students often felt rushed during discussions and struggled to coordinate meeting times outside of class. More in-class time for group activities, asynchronous learning tools, and smaller group sizes were desired.
- **Communication:** Unresponsive group members, disagreements on the structuring of their final projects, and a reluctance to initiate discussions were common barriers experienced by students. Instructor-led introductions, role assignments, and ice-breaker sessions were all suggested to improve these issues.
- **Unification of voice and style:** Conflicting ideas and an uneven distribution of work could lead to less cohesive written assignments. Collective editing using collaborative document authoring tools was suggested to help address this.

The use of collaborative learning tools to aid in the activities that were piloted across courses was also a primary concern of this study. Of students who were required to use Microsoft Teams, only 48% of them indicated that they would recommend this tool in the future, and 63% reported technical issues. Additionally, 61% reported the use of other software to aid in collaboration during that time. In general, students reported a desire for more choice when it came to selecting collaborative learning technologies in their courses.

Instructors were positive about Microsoft Teams' use, describing how this software allowed them improved insight into individual students' contributions during the assessment process. They could also prepare online spaces in advance, complete with templates and expectations, to assist students in their group work. However, the use of Microsoft Teams also presented some challenges for them:

- **Onboarding and technical issues:** The initial set-up of Microsoft Teams was cumbersome, particularly because of restricted functionality related to privacy concerns.
- **Student buy-in:** As indicated above, there was resistance from students who preferred to use their own set of tools. This impacted the uniformity and efficiency of the learning environment that instructors were trying to create.
- **Time investment:** While Microsoft teams provided additional ways for instructors to provide feedback to students, this also required a great deal of time and TA resources.

Based on the findings outlined in this report, we suggest several areas where Arts ISIT may provide additional support to improve the use of collaborative learning activities in UBC Arts moving forward. Broadly, these include:

- Onboarding Support.
- Training for instructors and teaching assistants.
- Addressing technical issues for supported software.
- Developing support partnerships with campus groups to support students.
- Creating an online space for instructors to share resources and strategies that support collaborative learning.

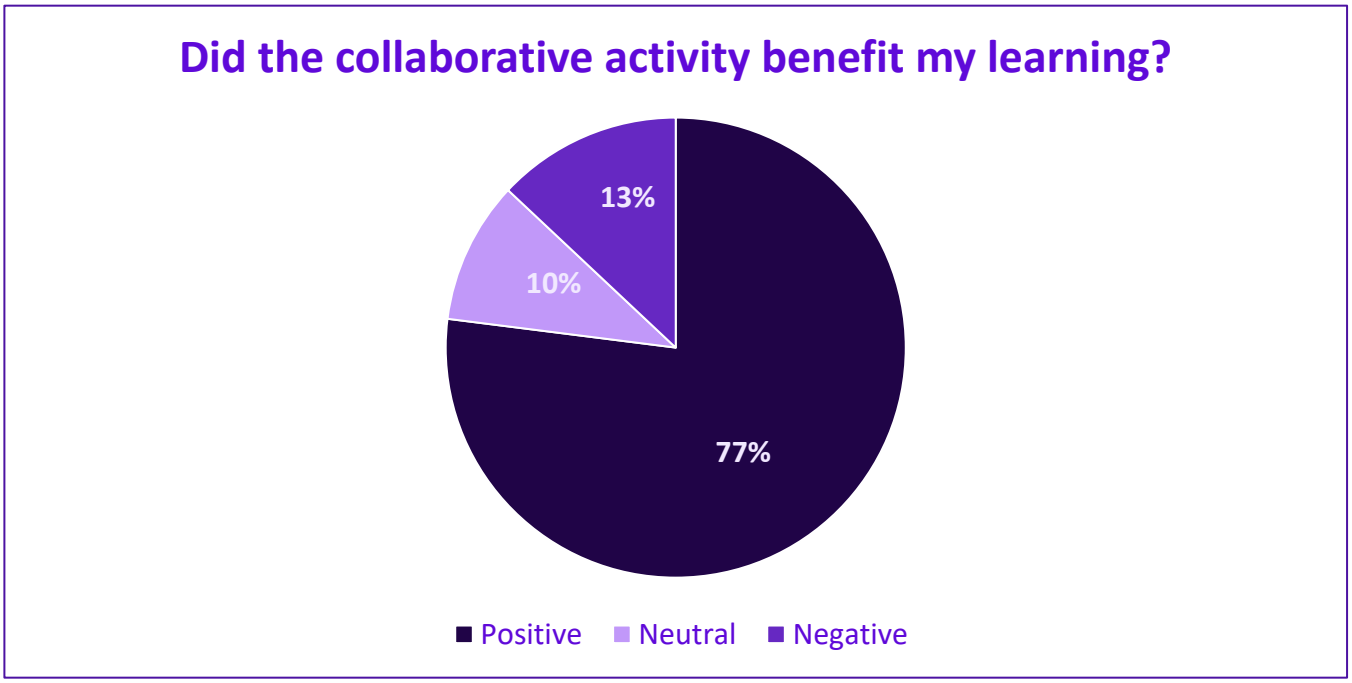
Methodology

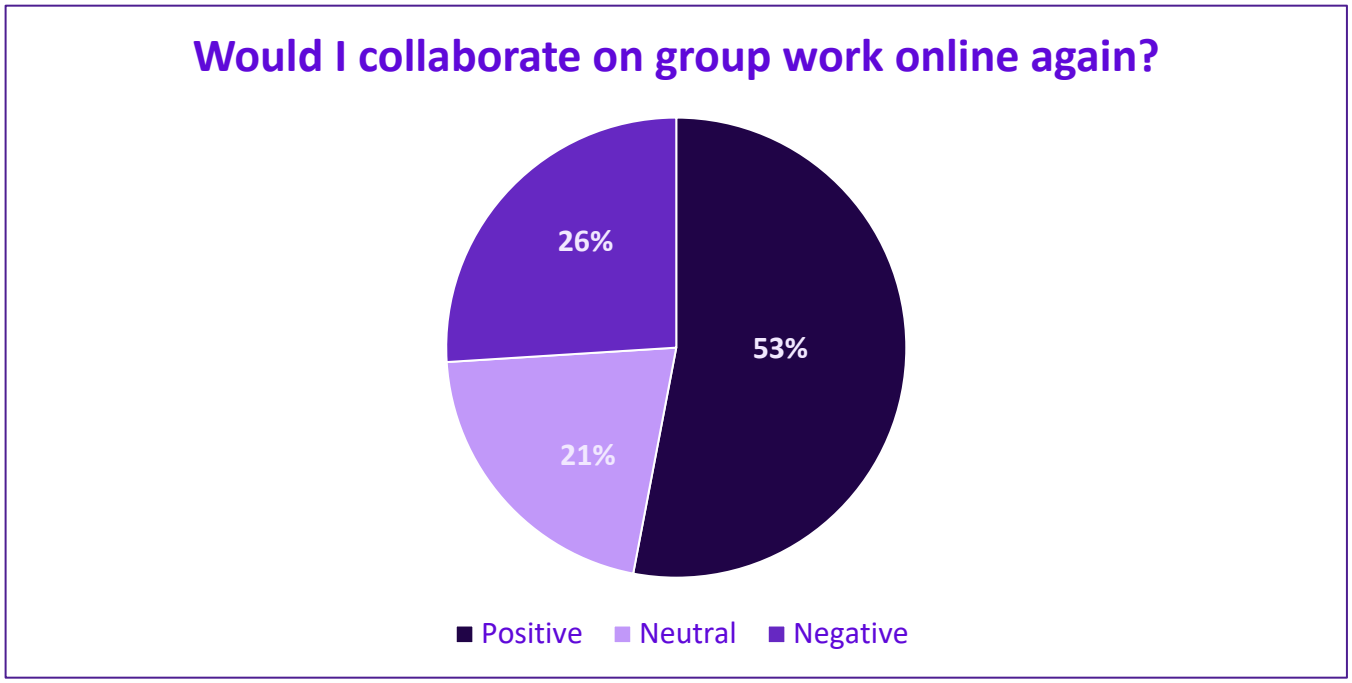
In years 1 and 2 of the project, funding was used to help facilitate pilots of collaborative learning activities across a wide range of Arts courses. Student feedback was collected through online surveys that were distributed to each pilot near the end of the term. Additionally, student focus groups were incorporated in Year 2 to provide greater context surrounding their experiences with collaborative learning and to get more in-depth feedback on themes that emerged from the surveys in Year 1. Semi-structured interviews were also conducted with instructors in Year 1 to identify key themes surrounding their pedagogical approach to collaborative learning and motivations for integrating collaborative learning into their courses. Since all the Year 1 pilots utilized Microsoft Teams as the primary tool to facilitate collaboration, specific questions were also included in both the instructor interviews and the student surveys to better understand their experiences with that specific tool.

Following each round of data collection, responses from students and instructors were thematically analyzed to determine common experiences and insights related to collaborative learning. Specifically, the benefits of collaborative learning were explored, as were barriers to its successful implementation, the ideal role of instructors, how learning technologies were being used, and if there were any barriers to their use. Descriptive statistics surrounding these areas of interest were also obtained from student surveys where appropriate.

Results

The overall results of the surveys were positive, indicating that most students felt that the collaborative activities benefited their learning. Looking at the aggregate responses across courses, 77% of students either “strongly agreed” or “agreed” that collaborating with other students in a group activity was beneficial to their learning. However, when asked whether they would collaborate online again, only 53% expressed a positive sentiment.





These sentiments are expected given the data obtained from focus groups. Students reported a wide range of benefits associated with these collaborative learning activities, including improved engagement, self-directed learning, skill development, relationship building, and a broad diversity of opinions/skills within groups. However, many challenges were also expressed such as the additional time required to complete collaborative activities and difficulty organizing times to meet with their group members. Many students suggested they needed more time to meet in person during class to get to know their group members better and plan next steps. This suggests a hybrid environment that combines the flexibility of online collaborative learning while allowing for face-to-face meetings is generally preferred.

However, there was also significant variability across courses, indicating that factors like activity design and technical issues can play a key role in determining how positively students perceive collaborative learning activities. Many students expressed challenges with Microsoft Teams that may have impacted their overall satisfaction with the activity as well.

Advantages of Collaborative Learning

Many advantages of collaborative learning were identified across the student and instructor evaluations:

- Creating community and relationship building.
- Student engagement and active learning.
- Student directed learning and skill development.
- Diverse perspectives and skill sets.
- Flexible learning.
- Division of responsibility and reduced workload.

- Feedback.
- Improved insight into student learning.
- Student collaboration and digital literacy skills.

Broadly, pilot participants described how collaborative learning led to effective teaching and learning environments.

Creating Community and Relationship Building

Instructors identified the theme of creating community as one of the primary motivations for adopting collaborative learning activities. The intentional use of collaborative activities to facilitate community building was particularly relevant during the first year of the pilot, given that courses offered during the January 2021 term were offered through remote instruction:

> *They [students] really enjoyed meeting in groups and getting to know each other better. They enjoyed the different roles they found, they found it valuable to be able to critique the readings.*

> *I can say based on the survey that we did with the students, especially in the online environment, they talk so much about how it was so nice to meet other first-year students, how it was so nice to work collaboratively, to have autonomy, that it was not all just like passive lectures.*

A common strategy utilized across many of the pilot courses was to create groups that persisted across the course. The collaborative activities in these cases were not one-off events, but integrated at regular intervals across the course so that they became a consistent aspect of the pedagogical approach. This allowed students the opportunity to build relationships over time with others in their group and become familiar with how to engage and learn collaboratively with one another:

> *And I had several students throughout the term pop into my office hours to tell me just how grateful they were for having an activity like the assembly because it was the only class they actually met and became friends with other students. And so that's exactly what I want. I want the small, the cohort feel in a very large class.*

Students also identified community and relationship building as a primary benefit of the collaborative learning activities that they were taking part in. This was particularly true when these activities were introduced early in the course. Students felt more connected to their peers, and this created a more enjoyable and supportive learning environment:

> *It made it a bit easier to communicate with other people in the class just because it felt like I didn't really know anyone in my class until then.*

> *I [became] comfortable with asking for help or reaching out to my friends that I made through the activity.*

Group work also provided students with an opportunity to observe their peers' strengths and work styles, which helped them to identify potential partners for later projects. Building positive relationships

during group work can enhance trust and confidence among students, making it more likely for them to seek out and collaborate further with peers who are familiar and reliable:

> *I think that since the [activity] was [in] the earlier part of the class, like in the beginning of the term... it helped to get to know other people and just make friends with them. Also, one of my teammates ended up being my partner for the later projects.*

Student Engagement and Active Learning

One of the most common themes discussed by instructors was the role collaborative learning played in promoting active learning in their courses. These were seen as an effective way for students to engage with course concepts and actively apply their learning:

> *The focus of this course is to introduce them to scholarly conversations. But introduce them as active members. So, they're going to produce the genres that are common in scholarly context, right? So, they need the skills necessary to produce these genres.*

> *Obviously then we also want to develop critical engagements. So, getting students to think through the core concepts we're introducing but then applying them. And that's what the point of this particular activity was.*

These activities were seen by many instructors as an important pedagogical approach to make their classes more participatory and encourage discussion:

> *It works well because sharing of ideas becomes central to the course, encourages collaboration. Giving them tools to collaborate and permission to share ideas, process and work together.*

> *...students did go back to their [group activity] and mention that that they have benefited a lot from their peers' input to help them to improve their understanding of the original text. And yes. And I think it also facilitated the discussion.*

In addition, collaborative activities utilizing online tools were mentioned as a strategy that could be used to encourage a more active learning approach in larger classes:

> *I've noticed that in classes that tend to have beyond 40 students, there's a lot of passive learning expectations. And so, I want to turn that into active learning expectations*

Student Directed Learning and Skill Development

Many instructors used collaborative group activities to shift the learning approach in their classes to one that was more self-directed and student-centered. For example, some instructors discussed how these activities provided an opportunity for students to take more autonomy over their learning and become more responsible for the outcomes:

> *I mean for me, it's all, it's always about trying to encourage students to see themselves as being responsible for their own learning. So, using those kind of activities really puts a lot of autonomy into their hands to take responsibility for working with their group and figuring out the questions and the case studies.*

> *...students really like that they got to work together and talk and I would shut up and let them drive for a while. So, I think that that's what's key and we do that, we do that quite often in our upper year courses, but we don't do enough of it in first- or second-year courses.*
>
> *But at the same time, if they're not agents of their own education, they oftentimes are detached from what we're talking about, and they don't see the importance of it in their own lives.*

Instructors also discussed how collaborative group work required students to negotiate roles and responsibilities while working towards shared goals. While some instructors provided well defined roles and instructions to facilitate collaboration, others provided more freedom for students to self-organize. The latter saw the development of cooperative group skills and the negotiation of group processes as an important part of the learning process.

A third area related to student self-direction that many instructors discussed was the importance of collaborative activities in helping students take more ownership over their learning by becoming active participants. By becoming active participants in the learning process and taking on responsibility to contribute to their group, some instructors saw broader meta-cognitive benefits:

> *This development of working together to think through the process of inquiry, but not just memorizing and regurgitating to thinking through what learning is and what it means.*
>
> *As students are given more space to contribute their ideas to the class, some instructors also highlighted how this also helped to introduce diverse perspectives.*
>
> *...they're not used to being the ones driving the knowledge. And then they also said that it was interesting to see the diverse perspective that other groups had on the same topic, right? That just, you take one simple concept, and then nine voices, and just how differently people can approach it based on where they're from, what their disciplinary interests are and things like that. And so, I think one of the reasons why this course is so special is because it invites open and interdisciplinary thinking and intercultural competence.*

Students reported that the collaborative learning activities not only helped them to develop specific skills related to their chosen field, but a variety of soft skills that were transferable to a wide variety of academic and real-world settings. For example, collaborating with peers requires effective time management to meet deadlines and coordinate tasks, as well as communication and problem-solving skills to address challenges that arise during group work. By engaging in collaborative learning activities, students can refine these skills:

> *I think some of these skills like time management, like communication, problem-solving, uhm, stuff like that. I think those are skills that I was able to better develop during these activities. I've been exposed to them before and I had them before, but I think it was able to develop them.*

Other students also described how working within their activity groups helped them to gain a deeper understanding of the course material, highlighting the value of collaborative learning to the development of their critical thinking and analytical skills:

> *It's helpful to discuss an article with others as it gives you a deeper understanding of the material.*

Finally, some students acknowledged that these skills were transferable across subjects. That is, early experiences with collaborative learning can help students to better apply associated skills in upper year courses or even future work environments:

> *Collaboration between me and my peers, I can kind of like apply [this] to other classes.... And we can kind of learn to build up on other arguments and kind of talk to make it all sound cohesive together.*

Diverse Perspectives and Skill Sets

Students described how they valued the broad array of perspectives and skills that their peers provided when collaborating on assignments. Students discussed how they appreciated hearing the ideas and opinions of others, as it helped to expand their own understanding and resulted in a richer final product:

> *Everyone always has something to contribute, hence it is always great to have many different perspectives that generate further and broader conversations.*

Some students also shared that they benefitted from learning to communicate with those who may have opinions or viewpoints that ran counter to their own. This can promote empathy, encourage intellectual diversity within the classroom, and challenge students to engage in constructive debate with their peers:

> *The main thing I learned working collaboratively in the activity was that it is important to trust the ideas of others and to respect those ideas even if they are the ones that I don't agree with.*

Further, students indicated that in some classes they were able to draw on the disciplinary strengths of their peers. This allowed students to distribute work between them more organically based on their unique knowledge and skillsets, while benefitting from peer learning:

> *I had a group member that was really, really cool with presenting.... He really brought like a fun theatre aspect to the work. I don't think we were expecting that.*

> *One of my group members was in biomedical engineering. So, they brought in a lot of really cool [information] about the cell structure and how that was implemented into our human, which I thought was really interesting.*

Finally, when paired with community-based learning, students commented on how the opportunity to collaborate with non-academics and professionals allowed them to gain practical skills and knowledge before learning to apply it in real-world situations:

> *I think it not only diversifies like our research, but at the same time it gives us the opportunity to work with other people who aren't just other students or faculty members. These are people who have different educational backgrounds. And it gives us the ability to take those perspectives and incorporate them into our learning.*

> *It gives us the chance to talk to people who are out in the real-world. We're not just sheltered in a class setting. Because I think that if you want to expand your learning, you have to be able to make sure that you're including everybody.*

Flexible Learning

When instructors were asked about the implications of online collaborative learning activities for post-Covid teaching and learning, one of the common themes was related to flexibility. Online collaborative learning activities were seen as a pedagogical approach that could help facilitate blended and flipped classroom approaches and connect the in-class and online components of the course:

> *I truly appreciate this collaborative learning assignments and the way they are built and the flipping of the classroom.... So, I honestly feel that this works so well that I don't know. I wouldn't like to give up the flipped classroom. Of course, I will have to teach in-person. But the flipped classroom proved to be successful.*

> *... this is used more as a supplementary tool or activity that I'm using to engage students, even outside class to kind of connect the in-class activity with the outside.*

For some instructors, the ability for students to engage in the collaborative activities outside of class time helped to facilitate in-class discussion as student groups were able to share and discuss their group work as part of in-class activities:

> *And I use those [online collaborative learning activities] all the way through. And that's been terrific because it means here's all of the stuff that I want you to know in this particular way. And then the class time, purely discussion and mostly very small group discussion. So, we can use it as a way to again, practice exactly the things that we're doing and have let them do the kind of work that they need to do to get the basic materials together.*

Several instructors also used approaches that provided more flexibility for students to complete the group activities on their own time. In certain cases, hybrid approaches were used where there were no synchronous class meetings on certain days and students could choose to work on their group activities during these time periods or utilize a different time that best suited the needs of group members:

> *And I would just stay in the main room and they would go break out and do the activities. And to me it just became evident that my being there was redundant.... Quite a few of the groups actually arranged to meet at different [times], that was up to them. I didn't stop them or encourage them. I said, they were certainly welcome to do that if they were all comfortable with it.*

> *And then they have, they have the one class period each week where it's open, right? But that way they don't have an excuse about uh, we can't find a time to meet because yeah, you can, it's right there. And they have time to do their online asynchronous stuff, all the lectures, everything.*

Division of Responsibility and Reduced Workload

Several students described how their groups allowed them to work more effectively by drawing on the diverse abilities of their peers while providing opportunities for individual growth and contribution. For example, students described how they were able to split responsibilities between tasks like writing and presenting. This allowed those who may not excel in one area to focus on an aspect of the project that they were more comfortable with:

> *We were kind of large groups and there was sort of the two aspects, like the presentation and the writing, which allowed for people that weren't as strong with writing to maybe work more on the visual aspect of the presentation or doing the presenting itself.*

Collaborative learning activities and group work provided these students an opportunity to utilize their strengths and interests, leading to increased engagement and motivation. This also provided them with a greater sense of responsibility for the portion of the project that they did take ownership of:

> *I feel like one of the advantages was that- since we each took the different roles coming into it, we each kind of had different things to add to the to the paper or to the little paragraph. So not every single person needed to be like, an expert or like, perfectly versed on every single portion of the article.*

> *It was nice to have a larger project that you are able to sort of pick the aspects you were most comfortable with doing and then kind of just work on that rather than the whole thing yourself.*

Feedback

Instructors said one benefit they saw in using online tools for collaborative activities was providing more feedback. The open nature of group collaboration that the tools afforded allowed instructors to provide feedback at multiple stages, since they could monitor group activity. One instructor describes how they provided smaller, yet more frequent feedback to student groups:

> *I gave them more feedback. So, every time they turned in questions at each stage, I would say, this is a good question because this, [or] if you're asking about this then that doesn't make any sense, and kind of nudging them along in that process. They really appreciated even these kinds of little feedback things on these little tiny assignments they were getting. It helped them to understand more what I was asking.*

In addition to more frequent feedback, the fact that many of the collaborative activities were part of scaffolded assignments allowed instructors to provide feedback to students at strategic points. An instructor describes how the collaborative document allowed them to provide feedback to students in time for them to improve their course presentations:

> *I give them feedback before they facilitate. So, as soon as they turn the guide in, they know that that evening I will give them feedback and I know the student and they start to know their classmates.*

Another noted advantage of timely feedback is that it allowed students to correct their mistakes in implementing new concepts before they became entrenched. A language instructor described how their

students took advantage of their immediate feedback by correcting their work at the first opportunity, and then made sure these errors were not repeated in their graded work:

> *I'm not specifically marking this document or using it directly for assessment. But students are doing... some of their assessment tasks... inside the document... [For] example, when they were sent into breakout rooms to discuss some of the questions, they would record the answers. I would highlight the things that are wrong or highlight things that are super good, or give feedback. They would always come back to see my feedback. They usually make changes right away and they would immediately fix that, so that their homework afterwards is more accurate.*

An added benefit of providing feedback on collaborative documents was that their shareable nature allowed the feedback to be more communal. Instead of providing feedback to individual students on private documents that only they would see, the feedback could be provided to groups of students and potentially be shared and reflected on by the entire class. Giving feedback at the group and class level allowed it to be more scalable, strategic, timely and frequent than with individual assignments:

In addition to instructor feedback, the collaborative learning activities also increased self- and peer feedback. Self-feedback was facilitated as students could easily see the contributions from peers within their group, the work done by other groups, and then compare that with their own. Peer feedback was enhanced as an inherent part of collaborative group process as students negotiated meaning and ideas with each other.

Improved Insight into Student Learning

Many instructors indicated that a key benefit of collaborative learning activities was that they helped to make student learning more visible. By requiring students to document and share the work they were doing in their groups in online documents, instructors were able to view student thought processes around key concepts and learning goals:

> *I notice that with the collaborative learning assignment, since everything is written, it's way easier to assess students and to know how they articulate and how they make an argument. I just find it, it's more work, but for me, it's, it's interesting to see the student, right?*

Especially when the group activities were done as formative learning activities, this insight into how students were engaging with concepts provided more opportunities for instructors to provide additional instruction or feedback. For small, in-class group activities, the collaborative documents allowed students to make learning visible for instructors to review in a way that might not have been possible if the student interaction was entirely verbal. The act of making learning more visible, earlier in the learning process, was also connected to the opportunity to provide more frequent and timely feedback:

> *In the breakout room activities, I would use this document to ask students to put their group work into the document. At the same time, I could communicate with each group easily, by putting into their little cell, by saying “this is wrong,” or “what do you mean by this?” Or “I love this,” “I love this illustration,” “I love your examples.” So, this is me, without having to go through individual breakout rooms, I could communicate with them at the same time.*

Not only did open collaboration of group work provide students with effective feedback but it also allowed instructors to monitor student understanding of course content and adapt their teaching

strategy appropriately, as well. One pilot participant describes how they monitored students' work to anticipate which groups would require more support:

> *I would choose different sections each week to look down through. But then I also, I flag the problematic groups, or the groups that were really continuously scoring low and checked on them more regularly.*

As well as making student learning more visible to instructors, instructors also indicated that the use of collaborative documents provided an important opportunity for students to share their learning with each other. Many instructors integrated opportunities to share group outputs with the other groups to facilitate shared reflection. In some cases, these shared documents became a valuable resource students could use to review when studying.

Student Collaboration and Digital Literacy

In addition to providing benefits for course specific learning goals, a few of the instructors also discussed the importance that online collaborative learning activities played in developing student collaboration and digital literacy skills more broadly. These instructors expressed the importance of providing structures that helped teach students how to work effectively in a group or as part of a team using online tools:

> *So, we talk about what it means to facilitate a discussion and we actively discuss this. So, it's not just pointing out what I think, what I think, what I think and what, what so-and-so thinks. It's actually, you know, active listening and building upon what other students say so that we can contribute and lead into the next set of questions.*

> *I teach them, give them a form in which to take minutes and notes, assign roles to each other and keep track of all the work they're going to do so that they get some collaborative instruction: how to do, how to be in a team, how to work together...*

One instructor noted that the online collaborative activities in their classes were structured in a way that would scaffold the process of facilitating group meetings and writing group assignments into later courses or jobs. The instructor saw the online collaborative work students were engaging in as preparing them for future workplaces and academic environments where these skills are becoming increasingly important:

> *… so, I'm building in the way that, I build in those meeting report templates and the collaborative instructions. Our instructions on collaborative work is almost corporate, right? It's almost like, here's what meeting minutes are. Here's what an agenda is. Here's what makes an agenda different from a task list. Here's how you do this and that and thinking about this. So really preparing them in a whole lot of different ways. And I don't need to be too heavy handed about that other than, here's the template, here's what these things mean, do this and then nudge them along as they do these things on a weekly basis. The ones who get it and pay attention by the time they get to the end, those are fantastic, right? I mean, they can go into work at some corporation and be ready to go....*

Finally, instructors emphasized the importance of students learning to use digital tools for collaboration, while helping them think more critically about the tools they are using. In addition, this instructor noted

that the development of technology skills is an important learning outcome that students develop across courses:

> *… we teach kids to write in school and read. We never teach anyone how to use technology critically. It's not just like, oh, here's your new phone, go forth and play with it. There has to be like structure to how we think about how we use technology and why we're using it. That's key.*

Barriers to Collaborative Learning and Suggestions for Improvement

While instructors and students described numerous advantages to collaborative learning activities, they also identified barriers around implementing them. The following themes emerged from our analysis:

- Monitoring and managing group processes
- Increased workload and unequal distribution of work
- Course design, structure, guidance and feedback
- Scheduling changes and time management
- Communication
- Unification of voice and style

Instructors and students offered feedback, as well as suggestions, to manage these concerns.

Monitoring and Managing Group Processes

Although instructors identified the increased ability to monitor group activity and provide feedback as one of the main benefits of collaborative activities, they also expressed concern about the amount of time required to do this. While instructors saw the opportunities for monitoring and feedback as positively impacting student learning, the benefits needed to be balanced with the impacts to their workload.

To effectively facilitate group activities, instructors need to be able to monitor group progress to provide encouragement and nudges. In addition, instructors expressed that it was important for them to have insight into group dynamics to ensure groups were functioning effectively and engaging in authentic collaboration rather than just piecing together a collection of individual contributions:

> *The question of collaboration and soft skills and having a record of the interaction between the students, I could go in and there's evidence how well they collaborated or didn't, because it's all there on Teams, in there, in the files section and then in the collaborative document, but also in the chat.*

> *I also really enjoyed being able to kind of get a sense of how every group was doing. Kind of being able to see how much they had engaged, whether that was just through the messages that they were leaving each other, seeing how many times a certain group was meeting up versus another group. That really helped in terms of maybe seeing if one student was bearing the brunt of a lot of the group work. I could see that happening versus without it. The student would have to let me know and would have to reach out and ask for that help. But being able to*

> *have all the group work concentrated in one place, we were kind of able to notice these things and to reach out to them first before they had to make that step.*

Many instructors indicated that the version history feature in Teams was especially beneficial to observe how the documents evolved over time and to see which students were making contributions. One instructor also explained how they utilized the version history feature to assess individual contributions within the group to ensure all students were participating

> *[The TA's] main role was going through the documents, checking every week if [students] had submitted on time and what they had submitted. Unfortunately, some students did not submit "substantial" work for their assigned role and the TA could identify that by reading each member's contribution on their group's MS Teams document (SharePoint document). Then, [the TA] would go through the key takeaways, grade them according to my rubric, make comments, and add those to the spreadsheet. I would check the comments written by the TA and we would then add them to Canvas.*

However, this type of monitoring was facilitated by additional TA resources available during the pilot, and the instructor was concerned about this approach's long-term sustainability.

Increased Student Workload and Unequal Distribution of Work

A common theme identified by students across courses involved challenges related to the amount of time and work involved in group projects. Often, there was a perception that the group activities required a significant increase in time and the number of tasks that a student needed to keep up with in the course. Students also indicated that the effort required to do the activity and organize work with group members was not always reflected in the assignment's weighting for their overall grade:

> *Distribution of work based on different work ethics and schedules; also, the amount of content covered was quite overwhelming.*

> *The most challenging aspect of online learning was facilitating collaboration between group members, and it takes a lot of planning and last-minute effort to complete some of the assignments.*

> *A challenging obstacle was keeping up with coursework. Recovering from falling behind was difficult to do at times. Solving this obstacle required better time management and consistently putting in the time to complete tasks.*

Some students also commented that their peers contributed significantly less effort or failed to actively participate in group activities. This created an unequal distribution of work between group members, leading to frustration. A common issue was the free-rider problem, where a particular group member would engage minimally or not at all. This had the potential to undermine the benefits of collaborative learning for the group, while also resulting in lower quality work. It was identified that this issue could be for a variety of reasons, including varying levels of motivation between students, skill imbalances, or lack of accountability in the assessment process:

> *Working together to write the paragraph was quite challenging. Some of the students were not really offering any suggestions, and it was mainly one or two students doing the work. Even after class, only a few students edited/added their own ideas to the key takeaways paragraph before submitting it.*
>
> *One of them really did not participate at all - very little communication - and kind of just did what we asked her to do and was pretty last-minute with it. I feel like it was just with me and the other girl who were participating.*
>
> *I believe some members may have been putting more time and effort than others, and having roles that are tougher than others does not seem completely fair, it should be equal work for everyone.*
>
> *For each written component it seemed to be put onto one person in order to finish it all, which isn't really fair for the whole group to get the same grade.*
>
> *Something that might help to make sure that the kind of skill level when it comes to like, writing and stuff, is a bit more equal so that there's a fair amount of work being put into it. It would be like e.g., like this course has no prerequisites, even also second-year course. So, I'm not saying that it should be like crazy prerequisites, but maybe if it just had the first-year writing requirement as a prerequisite, it would ensure that there's equal skill levels when it comes to writing.*
>
> *There's a difference in motivation and priorities. Certain students were like, "I really, really want to do all this," while others were kind of like, "I'll just go with the flow, I'm going to put in my work, but it's not like I would for a different class."*

Though less common, another reason for an unequal distribution of work was due to a single student attempting to take over the activity. It was noted that this provided fewer opportunities for peer-learning and reduced the motivation of other students:

> *A challenge I found with group work was that there was normally one person who took charge without adding other feedback from others.*

Suggestions to help alleviate these issues included the incorporation of peer assessment into the final grade to help keep group members accountable, and clearly defined roles to help ensure work is more evenly divided. Adding an individual component to a collaborative learning activity, such as self-reflection, may also help to keep students motivated. Some students also suggested having fewer activities, reducing the number of tasks required for each collaborative activity, or ensuring that all tasks were relevant to the course learning goals. Increasing the grade weighting of the activity to better reflect the amount of work involved may also help to alleviate these feelings:

> *Having meeting reports due every week was a lot for my group.*
>
> *Maybe only do 2 reading circles and make all the teams declare when and where they were going to meet each week so that it was set, and no one could back out.*
>
> *Reduce the activity from every week to every 2 weeks.*

> *Have less assignments, or less activities that require us to all be on the doc at the same time to discuss something. Working around everyone's schedule is difficult and it made me more stressed out because people usually weren't free until the end of the week, when the assignment was due.*
>
> *This was a really tough and time-consuming task. I think it would be more reasonable to have more percentage of grades into this task. Therefore, more students would be encouraged to finish this assignment with a better quality and hopefully there would be no more students giving up this assignment.*
>
> *If possible, make it possible for people who would like to work alone have that opportunity.*

The topic of group roles was mentioned repeatedly as well. Although there appears to be conflicting suggestions regarding how roles should be implemented, these comments speak to the larger need to have clear structure and guidance for how groups should work together:

> *Make an amount of roles so everyone does every role by the end (some people in our group had done the summary where others didn't get to yet by the end).*
>
> *Weekly group meeting reports involved switching roles every week. Perhaps creating permanent roles that each member can grow and improve in, while shifting around specific tasks, would allow the group to work more efficiently.*

Scheduling Challenges and Time Management

One of the most common barriers students faced was time management and scheduling. Specifically, students found it difficult to meet outside of class time due to different course schedules. This resulted in students feeling rushed:

> *It was difficult to communicate and work on the key take aways after class as everyone was free at different times.*
>
> *I sometimes found it difficult to coordinate with my group members to complete writing our key takeaway paragraph after class as everyone has different schedules.*
>
> *Usually, the amount of time available in the discussion was insufficient for completing the assignment and it was difficult to find a time outside of class that worked for everyone in the group to complete them.*
>
> *I often felt discussion was rushed because we had such little time.*

In general, students requested increased time during class to meet and collaborate in person, while others sought to use various technologies like Instagram, Discord, or text messaging to communicate asynchronously outside of class. Smaller group sizes were also preferable as these were easier to coordinate a time to meet with.

Course Design, Structure, Guidance, and Feedback

Several students also mentioned challenges related to course design or modality. It is important to note that many of the pilots in Year 1 were conducted when courses were either fully or partially online, which impacted student experiences with the group activities. The primary issue related to a lack of similarity in course design across the faculty:

> *One of the most challenging obstacles is just trying to figure out where all the different assignments and activities are and when they are due because all the courses have a different structure so it can be a little confusing.*

> *Online courses feel more difficult because you're at the mercy of the organization skills of the teacher. Whereas in "in-person" classes the organization of your course is up to you mostly.*

Additionally, students indicated that they needed clear guidance, structure and feedback from their instructors and TAs; however, they were clear that this had its limits. In general, students appreciated it when instructors provided clear rubrics and grading criteria, a breakdown of group roles, and suggestions on ways that they could communicate or write effectively when working together. Students also preferred timely, consistent, and early feedback on their assignments, so that this could be incorporated into their work more easily:

> *There was so little guidance no one seemed to know what to ask and once the [alumni] interview was over no one knew how to start the essay.*

> *It seemed like our prof was really open to receiving feedback with how the groups are going and was really open if you were having difficulties and wasn't judgmental about that and really encouraged feedback if things are going wrong. I really appreciated that because I have had groups where we were just completely left on our own and it ended up not going so well. So I really liked that.*

> *I'm glad it was quite open-ended and there wasn't much like forced feedback, but I do kind of wish perhaps that there had been more like specifics on the grading criteria.*

> *It was also nice that it felt like she really only gave us feedback and we really asked for it too. So I didn't feel like she just kind of butted herself into our conversations and be like, “Hey, here's how we do it,” kind of thing.*

Meanwhile, some students reported that there was a lack of consistency between instructors and teaching assistants, which could lead to further confusion in group settings and a lack of direction. Greater communication between TAs and instructors surrounding grading rubrics and assignment guidelines would be ideal. Additionally, some students commented that it would have been helpful if instructors and TAs would have more actively facilitated group conversations, particularly near the beginning of the course:

> *Unclear guidance from TA, group then couldn't agree on what to work on, wasted time.*

> *Quiet people made it hard to get the work done because no one would initiate. The TA could walk around the room to check on us....*

> *There were some challenges arising from unclear instructions from TAs, leading to confusion and hindered collaboration.*

Some students also reported that there was not enough guidance on the nature of their group role or how to communicate effectively in a group setting:

> *We found that the requirements of the final discussion paragraph were not adequately outlined in the instructions. For example, it was unclear how formal the document should be, what components from each role were necessary to include, from what perspective the writing should be presented, and what the paragraph's reader can be assumed to know.*

> *I appreciated this kind of open-ended aspect of the project. We can kind of take it in the direction you wanted with your group. But it does kinda feel like, I'm not really sure how we're going to do with this project because there wasn't as specific of criteria. So it did seem a little bit vague in that sense.*

> *I think also, we could have had a little more clarification on the presentation because it kind of felt like we didn't really know exactly what we needed to have done with the presentation, like what we needed to have on the slides.*

To overcome such barriers, some students suggested that more specific rubrics may be helpful. Meanwhile, others thought that breaking up large group assignments into smaller and more manageable components could reduce confusion. Students also suggested that instructors should provide clearer instructions and examples. Related to the challenges of workload and group dynamics, many students suggested providing more explicit instructions for how group members should work together and what the expectations of each student were. Finally, many students also asked for sharing more detailed examples or using class time to model how the group should work together to complete the final product:

> *Maybe more exclusively discuss it in a lecture or share a good example with us.*

> *I would suggest taking more time to introduce the activity and perhaps conduct an example one in class, just so the class knows exactly what to do for the real one.*

> *More instruction up front on expectations for final work.*

> *The TA could have given more concrete feedback on how we could improve on our next reading circle. Guided questions or prompts to enhance our thinking for each section would have been helpful.*

> *Possibly having more solid examples would be helpful for what is expected*

Communication

For students, common barriers to communication during collaborative activities included a lack of responsiveness by group members, or disagreements over how to structure the final assignment:

> *I sometimes found it difficult to get responses from my peers when we were working on our group work outside of the discussion time.*
>
> *It felt at points like certain members of our group were very unwilling to cooperate (for example, not participating in discussions or talking to any other group members about the project).*
>
> *Sometimes some students didn't want to study as a group but separately. Each person did one question and then just submitted the work without talking about it in the group.*
>
> *Quiet people made it hard to get the work done because no one would initiate.*

Most students reported that they were able to strike compromises with their peers when disagreements arose, and very rarely did students report that they needed to involve the instructor to help settle an issue.

> *Some of us had vastly different styles of doing work, but through compromise, we were able to work well together.*

Other students highlighted difficulties in getting to know their group members or a lack of group discussion due to shyness. To overcome these issues, some students suggested that the instructor or TA facilitate introductions:

> *The first few weeks were rough as we were all scared to talk to each other, so maybe in the first week implementing like a "get to know each other" thing in the discussions would help.*
>
> *I'd suggest starting the group work with a short ice-breaker session where everyone could introduce themselves real quick along with their hobbies/passions.*

Unification of Voice and Style

Another issue that students faced was learning to develop a final paper or presentation that felt cohesive and had a unified voice. A common approach students took involved assigning specific sections or topics to each group member, and then assigning a single individual to compose the final document. However, this did not help to address issues related to conflicting ideas or themes within the document, and often resulted in a great deal of work being placed on a single individual:

> *It was very challenging to write as a group. If the work is split up and everyone contributes equally, it doesn't flow well and does not end up being cohesive. However, if one person is assigned to write it, which is the only way to create an exceptional paragraph, they are forced to do all the work.*
> *It can be hard to write a small paragraph with 3 other people because sometimes your ideas clash.*
>
> *A challenge faced was connecting all the ideas that everyone had and merging it into a paragraph at the end.*

One approach students used to overcome this issue was to suggest edits to their peers rather than directly editing the document. This helped to engage the whole group in the writing and editing process, rather than relying on a single individual:

> *We got through it just by using the suggest function in Google Docs, as opposed to directly editing the work. So if one person goes in and edits a couple of sentences, we can all look over it and see maybe if those edits make it more cohesive as a whole.*

The Use of Learning Technologies

During Year 1 of this project, collaborative activities were conducted using Microsoft Teams. In Year 2 pilots, students were introduced to Microsoft Teams but could choose their preferred tools for collaboration. This choice was driven by feedback from Year 1 student surveys, where many asked for the ability to choose their preferred platform for collaborative learning activities, and 61% indicated that they used tools and apps other than Microsoft Teams to complete their collaborative work. Indeed, in the written responses, many students indicated that they also used Google Docs for group collaboration, even when Microsoft Teams was required. In the interviews, several instructors mentioned that groups would do their collaborative writing in Google Docs and then copy their work to Microsoft Teams to submit. This presented challenges for instructors who wanted to use the track changes feature in Microsoft Teams to see individual student contributions.

> *Don't use teams, instead use another platform that is less prone to glitches.*

> *Let students pick which platform they would like to collaborate on.*

In Year 2, students used a variety of different tools to assist with writing, document sharing, presentations, design, and communication:

Writing & Document Sharing	Presentation & Design	Communication
Microsoft Teams	Prezi	Microsoft Teams
Google Documents	Google Slides	WhatsApp
Google Drive	PowerPoint	Canvas
	Canva	Discord
		Instagram
		Zoom
		Email
		Phone

Students also indicated that they used tools such as WhatsApp, Instagram and Discord for group communications and coordinating activities and meeting times. In the focus group sessions, some students said they preferred to use tools they were familiar with and that were already integrated into their personal lives for this type of communication. Other tools that students made use of included schedulers, like When to Meet, and mapping applications.

While many students desired more autonomy when picking which platform they used, others asked for more instruction to help them explore all the useful features in Teams relevant to collaborating with their peers as part of the group activity.

> *Maybe doing an in-class or recorded walk through of how to access OneDrive and where those documents are would be helpful, cause other than glitches the main problem my group had in the first few classes was not knowing how to access anything on OneDrive. It would just make it easier.*
>
> *A short video showing how to use OneDrive instead of lecture slides. To be honest I didn't read all the slides and communicated with my peers in order to learn how to use it.*
>
> *Maybe explain some of the extra Microsoft Teams features, such as 'track changes'.*

Students' Experiences with Microsoft Teams

While there was general positive sentiment expressed about the collaborative learning activities, students were not as positive about the use of Microsoft Teams as the tool to engage in the activities.

In surveys, 63% of students indicated they had some technical problems while using Microsoft Teams. In one class, students reported many problems after several of them tried to collaborate on a shared document at the same time. From the written responses, many of the problems were not from actual program bugs, but from perceptions that the usability was not as user friendly when compared to other tools that students had familiarity with. Technical glitches that did occur were often related to latency, particularly when using video conferencing. Other issues were related to difficulties navigating the Microsoft Teams environment and frustration with the initial account set-up. Students also found it difficult to connect with one another due to privacy restrictions imposed on user accounts, which resulted in issues when trying to find one another to send private messages:

> *When everyone was typing, the program did not respond well. It slowed down too much that I had to type my answers/responses on other programs.*
>
> *We would constantly lose our work and have to scramble to recover it and at times we couldn't so we switched platforms and our problem was resolved.*
>
> *Sometimes working on the office 365 document would cause it to lag out and be unusable, instead we would use google docs to write out our work then copy paste it in.*
>
> *I found it challenging to learn how to use Teams. I found I took a lot of time out of my day trying to figure out how to use it when I could have just used Google Docs. Eventually I figured it out with a lot of time and trial and error but this could have been avoided if we weren't limited to only using Teams.*

Overall, 41% of students indicated that they experienced several glitches while using Microsoft Teams.

For all pilot courses, Arts ISIT worked with the instructors to offer technical support to students through in-class orientations, online resources, and online drop-in sessions. Although many support resources were made available, students indicated that help from a peer or friend was the most common support

resource at 66.3%, followed by help from the instructor at 63.1%. A small percentage took advantage of UBC resources and Arts ISIT drop-in support, but most support was provided by peers, with group members helping each other.

What troubleshooting resources did you use? (n=303)	%
Help from a peer or friend….	66%
Help from my instructor….	63%
Help from my TA….	19%
UBC IT online resources….	14%
Other….	6%

Of the students, 48% indicated that they would recommend the continued use of Microsoft Teams for future collaborative learning activities. Additionally, only 34% of students provided a positive response when asked if they would continue to use Microsoft Teams outside of class. This indicates that Microsoft Teams is not a tool that most students involved in the pilot would be inclined to use as a personal collaborative tool, if given the choice.

Even when Microsoft Teams was required by the instructor for the collaborative activity, 61.1% of stud ents indicated that they also used tools or apps other than Microsoft Teams with their group.

Writing & Document Sharing	Positive	Neutral	Negative
I would recommend my course instructor continue using Microsoft Teams/Office 365 in the future.	48%	25%	27%
I will continue using Microsoft Teams/Office 365 to collaborate with others outside of class in the future.	34%	28%	37%

Instructor Experiences with Microsoft Teams

While instructors faced several challenges when onboarding students and obtaining their buy-in for the use of Microsoft Teams, they clearly valued this platform when trying to organize documents for collaboration and gaining insight into how student groups were working together.

Access to Group Processes

Instructors identified that one of the challenges of assessing group work was being able to identify how much each student contributed to the development of the final product. Requiring students to use the collaborative document tool in Office 365 allowed instructors to have access to the Version History of the document. Many instructors appreciated that they could see how each student interacted with the collaborative document and time stamps indicating when the contributions occurred:

> *Having the record of the interaction between the students, I could go in and there's evidence how well they collaborated or didn't, because it's all there on Teams, in there, in the files section and then in the collaborative document, but also in the chat.*

> *And now with the knowledge that I have on how to use those collaborative tools, the collaborative doc is awesome. I mean, it, it served the purpose really well because I wanted a way to see. I wanted a way to see what students were doing in the groups when I wasn't there. And I, I had that and then I saw the follow up in the discussion. So it was set up really nicely.*

Onboarding & Account Set-up

Instructors also expressed frustration about introducing new learning technologies to courses and making sure that the technical barriers did not detract from students' overall learning experience. This increased the importance of having a seamless initial rollout that did not add an extra time burden for instructors. Since a separate email address needs to be activated to use online Microsoft tools for privacy reasons, many instructors feel that UBC can improve access to the tool:

> *If UBC has these privacy-related expectations of students, then as a functional student, you need an email address so that you can access Teams, the Microsoft 365 Suite, Zoom for students. You know, all of these things would've been so much better, have that in place. I think.*

To overcome this issue, one instructor recommended exposing students to the learning technology a week before the start of term to provide them with a bit more time to gain access to the tool:

> *I think if classes were to use Microsoft Teams, I think a good idea, like a week before classes start or something like that let them get registered and get them started with that process. So we don't have to go into the term beginning and having to sort that out, like give them time forehand to just get registered and that kind of thing so we can avoid those problems from being delayed at the beginning of term*

Instructors also explained that they could prepare online spaces beforehand to allow for consistent collaborative work experiences. Instructors prepared templates and work expectations for students so that the collaborative process remained the key focus:

> *What I do is I have a template, and I added the template to each document so they would know where to post their roles, their contributions, and where to write the final summary.*

Additional support to roll out the collaborative activity alleviates pressure on the instructor so they can focus on the learning experience. Instructors indicated it was valuable in the tool's rollout to have technical support available during the class session.

> *So [Arts ISIT] did come in to help with the whole class to set up the system in the first day of class, which was hugely important. So everybody I think I had no problem. No problem, or very little problems, compared to the summer when I was helping everybody to access the document.*

The main resource that was valuable to almost all instructors were their TAs. Providing meaningful feedback to students for larger courses required additional help. Since the teaching team now had access to the revision history and student activity contained in the collaborative document, it increased the amount of information available on student activity and the number of learning tools that needed to be consulted before providing feedback on an activity:

> *So one of the lessons learned is without a TA, if you have 30 students, it's impossible to give this kind of feedback if you're teaching three sections. Okay, so one of the lessons is you might need a TA.*

While the TA support was seen as beneficial to the instructor, this raises questions about the sustainability of such activities. Although the revision history feature is described as valuable for teaching and learning, the resources to make use of it is not available to all instructors.

Student Buy-In for Microsoft Teams

Many students expressed their desire to use the tools that they preferred, rather than having one set of tools prescribed for the whole class:

> *There was one group, for example, where one of the students did not want to participate in the pilot of OneDrive. So that steered the whole group dynamic in a different direction. They ended up using Discord as a way to record their group's thoughts instead of OneDrive. And most group members were okay with that, but it was just a different, it kind of skewed the group in a way.*

Another challenge many instructors expressed was that many students preferred other tools, but that these did not allow the same access to monitor group progress and collaboration:

> *One of the challenges I faced this term more than in the previous terms, was that many students, they worked in another collaborative document from Google and then just copy and paste it into Teams. And then I kept making announcements. You're supposed to write on the Word document of Teams directly.*

Some instructors mentioned the need for a more standardized toolset for teaching and learning that students could receive orientation and training on. This would relieve individual instructors of the necessity of introducing new tools to students and providing technical support:

> *...that problem we have at UBC where there isn't any standardization of what tools are being used. And so, we're putting a huge amount of pressure on our students to continuously learn new tools. And I'm not really sure as to what aim, because we have, we have standardized tools that can meet certain objectives. But there are just so many out there and different instructors use different tools and students get frustrated by that because they're like, am I learning the content of the course, or am I learning a new tech tool? So there certainly was that resistance there.*

One instructor noted that an effective strategy they used to achieve greater student buy-in was to provide an explicit rationale to students in the syllabus that outlined which tools were being used and what their purpose was:

> *And one of the students said that the difficulty with technology really had been for them that their instructors did not clearly specify which technologies would be used and how on the course syllabus. And so because of that student, thankfully, in my syllabi in both of my classes this year, I specified very clearly that I would use Canvas discussions in this way, I would use Zoom in this way, I would use OneDrive in this way, and here's how you access all of them. And so I was very clear about the technological expectations, that they needed the updated versions and all of that. So I think that helped a little bit too....*

Concluding Remarks

Considerations for Designing Collaborative Learning Activities

Based on the feedback received from instructors and student pilot participants, we have identified multiple considerations regarding the effective design and implementation of collaborative learning activities in the Faculty of Arts:

Open communication with students about the motivations, benefits and challenges of collaborative learning: As the survey results indicated, students were largely positive about the benefits of group activities to their learning, while at the same time showing less enthusiasm for participating in collaborative activities in the future. A helpful strategy that many of the instructors utilized was to be honest and clear with students about why they were using collaborative learning and how that related to course goals. In addition, it can help to share with students some of the benefits of collaborative learning that their peers have found, along with some of the usual challenges that students often face in these types of activities. By being transparent and engaging students in discussion about these topics at the onset of the activity, it can help them to better understand why they are being asked to do something, how it fits into their overall learning and to prepare for challenges that might arise.

Group Formation: Instructors should carefully consider how they will form groups. They can opt for random grouping, student-selected groups, or instructor-assigned groups. Any of these methods should involve balancing diversity and compatibility within groups to promote effective collaboration. A mixture of these can also be used. For example, students expressed how random or instructor-assigned groups at the beginning of term helped them to form better relationships with their classmates, and how this aided them in choosing their own partners for future collaborative activities. Finally, smaller student groups are preferrable to larger ones. If a group is too large, it will become more difficult for students to schedule meetings and organize their tasks.

Roles and Responsibilities: The assignment of specific roles within groups, such as note-taker, facilitator, timekeeper, or presenter is particularly helpful when students are beginning to organize. It is helpful to provide clear instructions about what each role is responsible for completing. This is especially helpful when students have lower domain knowledge or lower collaborations skills. Students who have higher domain knowledge and higher collaboration skills, however, might benefit from more self-direction. An option that allows groups to move towards more self-direction is to require that the groups create an initial plan to outline their work tasks, establishing clear roles and responsibilities before submitting this to the instructor for review and feedback.

Clear Instructions and Rubrics: A common suggestion that emerged from evaluations was that instructors provide clear instructions, scripts, or training materials to assist students in their collaboration and the completion of the learning activity. Also, providing a clear rubric, with the overall goals of the learning activity, and ensuring that these instructions are rolled out consistently by both course instructors and TAs, will ensure students understand what is expected of them.

Peer Feedback: Implementing peer feedback early in the collaborative process will help groups address any issues and help mitigate student concerns about grading fairness. This does not need to be a formal process and can involve regular check-ins with one another via an online forum, or during

class time. Another effective strategy is to utilize peer feedback tools such as peerScholar or iPeer to allow students to evaluate the contributions of their group members and reflect on their own participation. Students and instructors agreed that peer feedback was helpful in promoting accountability and a more even distribution of work within groups. It also provided students with valuable feedback on how they were interacting with group members, which could help them to develop more effective collaboration skills.

Instructor Feedback: To help students stay on track, it is best if instructor feedback is iterative and provided regularly. This also promotes accountability at the group level to maintain regular meetings. Some instructors mentioned that providing students with feedback on a practice exercise helped them to better understand overall expectations and gave them an opportunity to learn the working styles of their classmates in a low stakes environment. Due to the amount of work that needs to be reviewed, instructors often need support in the form of TAships to help provide adequate feedback on collaborative learning activities, although this may not always be available in all courses. Scalable strategies may involve introducing peer feedback at different stages in the process or providing group level feedback where the instructor discusses one or two examples of group outputs with the entire class.

Scaffolding and Alignment: For larger projects, breaking them into manageable stages with check-in and feedback points throughout the process can help support groups in managing and coordinating their work. It also allows the instructor to monitor group work and provide feedback at various stages. This introduces opportunities for students to apply feedback and allows the instructor to intervene if group dynamics or other challenges arise. Aligning group activities with individual assessments can also be an effective strategy to help increase student buy-in and allow them opportunities to incorporate feedback. If students see that what they are learning in the group activity is relevant and beneficial for work they will be individually assessed on later, it can help to increase their motivation for meaningful participation.

Blended Learning Environments: Blended learning environments that allow students to meet both synchronously in class, while also collaborating asynchronously outside of class, seemed to be the preferred modality for most students. Overwhelmingly, students expressed that they preferred instructors set aside class time to meet during the week to help overcome issues with scheduling and timetables, particularly in larger groups. One strategy that instructors used was to include collaborative learning activities as part of a hybrid class where students could use scheduled class periods when the full class did not meet in person. For example, a hybrid class might meet Monday and Wednesday in person and then on Friday students could use the same time to collaborate online with their teams or complete individually assigned asynchronous work. Particularly when collaborative work is first being introduced, a more structured approach may be preferable.

Addition of Individual Components and Reflection: Pairing collaborative learning activities with individual assignments can help overcome some of the hesitancy students have surrounding the assessment process in group projects. By pairing collaborative activities with a debriefing exercise or reflection, students also have an opportunity to consider how they might overcome the barriers they faced, in the future. This reflection is integral to the development of soft skills surrounding communication, time management, etc.

Emphasize Diverse Perspectives and Community Building: Some of the most common benefits that students reported was being exposed to the diverse perspectives from other students and building

peer relationships. In designing collaborative activities, instructors can emphasize these benefits by setting aside class time for introductions and by purposefully creating points in the activity where students are directed to discuss substantive topics related to the group project beyond coordination and task planning. Depending on the class context, it may help to provide guided discussion prompts and instructor facilitation to help initiate these conversations, while helping students to become more comfortable expressing their opinions with each other and navigating differences respectfully. There may also be opportunities to use this as a student-centered approach to addressing equity and diversity topics.

Standardized Support Materials: Standardized support materials for common tools and applications can significantly increase the capacity of instructors when offering collaborative learning activities to their classes. Additionally, as students tend to rely on one another for support more often than their instructors or Arts ISIT, it may be worth exploring ways to help facilitate this form of peer support in the future.

Integrate Skill Building: Both students and instructors indicated the importance of collaborative activities in developing lifelong skills such as how to work effectively with a team, organizing tasks, and time management. To facilitate the development of collaborative skills, it can help to provide students with direct guidance on effective communication, conflict resolution, and developing and managing shared tasks. Developing digital literacy skills related to collaborative work was also a benefit many instructors hoped to achieve. Although students tended to gravitate towards tools that they were already familiar with, instructors can help to guide them on how to use collaborative tools in academic and professional settings. By talking to students about why they are being asked to use a particular tool, or guiding them in the selection of group tools, instructors can help students consider issues like privacy and access and being more mindful of their use of digital tools.

Support Considerations

Onboarding and Set-Up: If online collaboration tools are going to be used more broadly across courses, finding strategies to address onboarding will help to ease many of the time commitment and buy-in challenges both students and instructors face. Support from Arts ISIT when onboarding students, creating groups, and rolling out collaborative learning activities would be particularly helpful for instructors. Specifically, support for setting up UBC email addresses for students and groups within Microsoft Teams would be helpful, as email addresses are not connected to student names due to privacy restrictions.

Teaching Assistant and Instructor Training: Developing a set of standardized training materials for faculty and teaching assistants would be helpful. This would include information on useful tools, applicable training materials, and guidance on the effective use of different software alternatives for collaborative learning. Tools for project management, communication, and document authoring are particularly valuable.

Address Technical Issues for Supported Software: The findings of this report should be communicated to Central IT units at UBC so that technical issues can be addressed collectively.

Support Partnerships: Given the time constraints on instructors who are setting up Microsoft Teams for their courses, working with partners such as UBC IT and Chapman Learning Commons to explore strategies and resources for onboarding and training students may help to reduce instructor workload.

Create an online space for sharing examples and resources: Create an online space to share sample materials and examples of collaborative learning activities resulting from the pilots. Guidance on selecting collaborative learning tools, digital literacy, and project management for students could be made available for other instructors to modify and use in their own courses.

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