

COLLABORATIVE WRITING ACROSS ENGLISH PROFICIENCIES:  
USING PROFESSIONALS' EXPERIENCES IN THE WORKPLACE TO SCAFFOLD  
STUDENTS' TEAMWORK PRACTICES

by

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A Dissertation Submitted to Department of English at Carnegie Mellon University in Partial  
Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

October 8<sup>th</sup>, 2021

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## ABSTRACT

When co-writing on linguistically diverse teams, team members have the potential to engage in perspective sharing and perspective taking, which can produce more innovative and creative texts. At the same time, linguistically diverse teams can often reproduce some of the worst inequities in our society, such as domineering teammates, discrimination and undervaluation, distrust and degradation of status, exclusion from group participation, stereotyping, and increased anxieties during interactions. It is, therefore, no surprise that students often feel anxiety when collaborating on linguistically diverse teams. The objective of this dissertation is to explore a team pedagogy that encourages students to overcome their anxieties about language differences and more productively collaborate with their diverse peers.

Using interviews and survey data, I created and piloted pedagogical material that aims to help students better collaborate on their diverse teams. Specifically, in Chapter 1, I reevaluated the ways that the field of professional and technical writing teaches teamwork in the classroom. In Chapter 2, I interviewed professionals who frequently collaborate on linguistically diverse teams to explore best practices commonly used by experts in the field. In Chapter 3, I revised the *Team Communication* workshop from a traditional approach into a flipped model, where students were given a chance to reflect on and individually interact with the teamwork strategies on their own terms. In order to address students' challenges with having difficult conversations about language and feedback, in Chapter 4, I created a flipped approach that scaffolds the team charter document and helps students overcome the anxieties around discussing different values, goals, and needs. My findings show that students self-reported an increased use of team planning strategies, and their team documents show an increased use of empathetic discourse towards their peers. This dissertation contributes to the fields of rhetoric and professional and

technical communication by offering teachers concrete tools that they can use to support the exchange of diverse perspectives in the classroom.



## ACKNOWLEDGMENTS

I would like to take a moment to acknowledge the people who helped me get to where I am today. First, I would like to express my deepest appreciation for my advisor, Joanna Wolfe, for her unwavering support, guidance, inspiration, and motivation. You have been not only my advisor, but also my mentor, collaborator, and my friend. I would like to thank my committee members, Chris Neuwirth and Necia Werner. Chris, you have always kept me accountable as a researcher and pushed me to do my best work. Necia, our conversations have continuously inspired me to be a better teacher.

I would like to thank Andreea Ritivoi for encouraging me to pursue cross-cultural communication research and the rest of the English department faculty for the incredible conversations over the past six years. I want to acknowledge the professionals, students, and instructors who eagerly participated in my studies, without whom I could not complete my research. And I want to thank the ATTW for providing funding for my data collection. I'd like to acknowledge the support of my friends and colleagues, including Ryan Mitchell, Ryan Roderick, Emily DeJeu, Jaime Fawcett, Susan Tanner, Craig Moreau, Alex Helberg, Venera Khalikova, Robin Rowley, Laura McCann, Nisha Shanmugaraj as well as all of my other colleagues in the English department. And I would like to acknowledge the work of Juliann Reineke and the tutors of the former Global Communication Center for helping me see things that I could not in my own writing.

On a personal level, I want to thank my husband, Eric, who is my best friend and who continuously encourages me to do the impossible; my son, Leon, who is the sunshine in my life; my in-laws, Barbara and Jay, for their support throughout this process. My sisters, Sophia and Andrianna, who have always provided much needed humor and distraction over the years.

Finally, I want to thank my parents, Larisa and Andriy. You set me on an amazing path in life and your belief in me has brought me to where I am today. I dedicate this dissertation to you.

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## CHAPTER 1: INTRODUCTION

Teamwork has become an essential skill both in the workplace and in the classroom (Deming, 2017; Suarta et al, 2017). A recent survey of the workplace revealed that 80% of employers consider teamwork to be an important skill (Hart Research Associates, 2015). Writers may also be expected to co-write in diverse teams with individuals who bring different goals, expectations, values, backgrounds, norms, and needs to a team project. For example, writers may need to co-write with individuals who have different levels of proficiency in the English language or who use different discourse norms and standards when communicating in English. When co-writing on diverse teams, team members have the potential to engage in “meaningful interaction and shared decision making and responsibility between group members in the writing of a shared document” (Dale, 1997). As such, people who co-write on diverse teams can be exposed to a variety of perspectives, genres, and linguistic features (Herrington, 2010; Maylath et al., 2013; Schindler, 2000) and have the potential to produce a more innovative and creative text (Canagarajah, 2006; Doreen Starke-Meyerring, 2005; Moreau, 2020; Wolfe, 2010).

In order to facilitate perspective taking and sharing on teams, research explains that teams need to plan their collaborations. Specifically, teams need to manage their time by creating task schedules that outline project roles, tasks, and deadlines (Wolfe, 2010). Teams also need to create team charters where they discuss expectations for the project, commitments, and strategies for conflict management (Ding & Ding, 2008; Rehling, 2004; Wolfe, 2010). When teams plan for their project ahead of time, they can potentially reduce the amount of time they spend trying to solve problems later on or avoid problems altogether.



## **Students' Resistance to Planning for Teamwork**

Keeping in mind the demands of the workplace and students' growing needs, programs across the university have placed teamwork among one of the most important criteria for their students' success (Simpson et al., 2019). In its release of its 2020-2021 criteria for Baccalaureate and Masters Level programs, the Accreditation Board for Engineering and Technology stated teamwork as a key student outcome: Students need to demonstrate “an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives” (ABET).

Yet, while university programs value teamwork as an important skill, a survey of the workplace found that only 37% of graduates are well-prepared to collaborate in workplace teams and only 18% of graduates are well-prepared to work with people from different backgrounds (Hart Research Associates, 2015). Specifically, there is often much resistance from students to engage in teamwork best practices. Instead of creating task schedules for their projects or laying out expectations in team charters, students tend to take a “just get it done” approach to teamwork and resist planning for their project (Poznahovska Feuer, 2020). Especially in instances when teams are pressed for time, students often assume that any preplanning will take precious time away from the project itself and eschew planning altogether. However, when students do not plan, they are less likely to communicate their needs, strengths, weaknesses, goals, commitments, expectations, and values. Furthermore, poor planning can often lead to bigger problems down the line, such as slacking (Aritz et al., 2018; Lam, 2015), miscommunication (DeFranco & Laplante, 2017; Lam, 2016), poor media choices (Kock & Lynn, 2012), and inability to stimulate participation (C. M. Fuller et al., 2012; R. M. Fuller et al., 2016; Koh & Lim, 2012). Research has also linked poor planning and poor teamwork skills to dominating

team members (Wolfe & Powell, 2016), inequities in leadership (C. M. Fuller et al., 2012; Privman et al., 2013; Sha & Chang, 2012) and resentment and frustration with the teamwork process (Poznahovska Feuer, 2020).

In addition, when teams do not plan ahead of time, they often miss out on important opportunities to calibrate expectations for a project. For example, students may assume that a team member with a heavy accent might be a poor writer, when in fact that student might have a lot of writing experience and expertise. A lack of communication can perpetuate inaccurate beliefs about peers' abilities and intentions, often leading to inequities in task and role distribution, inequities in participation, poor communication, and misunderstandings down the road. If students do not take the time to discuss team norms, they risk mismanaging the collaboration and potentially breeding distrust and resentment on their teams (Hinds et al, 2014).

### **Effects of Poor Planning on Linguistically Diverse Teams**

The problems teams face with poor planning can be quite detrimental to a team's morale, self-efficacy, and quality of deliverables. These problems also are often exacerbated on diverse teams due to a lack of planning. Specifically, research has found that students who co-write in diverse teams encounter challenges with negotiating roles and tasks, agreeing on language norms, and a lack of shared expectations for team behaviors and goals (Matsuda & Kei Matsuda, 2011; Maylath et al., 2013; Schindler & Wolfe, 2014). Moreover, when people collaborate on diverse teams and perceive their peers to have linguistic proficiency differences, the problems these teams encounter can have detrimental effects to the team's cohesion and even have larger social repercussions. Specifically, during these collaborations, students often make assumptions about their peer's competency, knowledge and native speaking abilities based on factors, such as

their name, accent, education background, and cultural background (Poznahovska Feuer, 2020; Trahar, 2007; Kim et al, 2019). Despite research calling for more tolerance of the fluidity of language practice (Koerber & Graham, 2017), perceptions of linguistic proficiency can influence how roles and tasks are distributed among team members (Harrison & Peacock, 2010), influence who makes decisions on a team (Aritz & Walker, 2009; Gluszek & Dovidio, 2010), and impact the overall trust and team cohesion (Le Roux, 2001). Perceptions of linguistic proficiency can be loaded with assumptions about a team member's competency and commitment to a team (Coupland & Bishop, 2007) and perpetuate stigmas (Kim, 2017) that can impact self-efficacy and confidence. Despite having potential for diverse thought and processes, linguistically diverse teams can often reproduce some of the worst inequities in our society, such as domineering teammates (Wolfe & Powell, 2016), discrimination and undervaluation (Russo et al., 2017), distrust and degradation of status (Coupland & Bishop, 2007), exclusion from group participation (Wolfe & Powell, 2016; Harrison & Peacock, 2010; Poznahovska, 2016, unpublished), stereotyping (Kim, 2017), and increased anxieties during interactions (Kim, 2018; Harrison & Peacock, 2010).

Kim and colleagues (2019) investigated more closely some of the challenges that native and nonnative speakers experience during their interactions and unearthed some key findings. In their study on workplace interactions, Kim et al (2019) found that native and nonnative speakers alike experienced anxiety, cognitive fatigue, negative emotions, and avoidance when interacting with the other. Nonnative speakers tended to experience anxiety over their accents and ability to convey messages in a way that would not be marked or noticeably othered in an American context. If they were called out for making linguistic mistakes, nonnative speakers reported feeling ashamed, embarrassed, and less than due to an inability to communicate clearly.

Furthermore, nonnative speakers experienced cognitive fatigue as a result of communicating in a foreign language and constantly monitoring how they would be perceived by their native speaking counterparts. Native speakers also experienced anxiety over not comprehending their peers or possibly mishandling a situation where there was miscommunication between speakers. Kim et al (2019) report that some native speakers were consistently hyper aware of their responses to accented language and feared coming across as offensive to their nonnative speaking peers. As a result, both nonnative and native speakers tended to avoid interactions with one another.

The anxieties felt by native and nonnative speakers are present not only in the workplace, but also in the classroom. Echoing Kim et al's (2019) findings, scholars in education and professional communication also find that students tend to avoid interactions with one another when there are linguistic proficiency differences. Students avoided confronting their peers about their language expectations and needs (Harrison & Peacock, 2010; Poznahovska, 2016, unpublished). Instead, students tended to take more familiar and less confrontational routes, which often involved "fixing" and rewriting a text (Harrison & Peacock, 2010; Aritz & Walker, 2009) or withdrawing from group participation so as not to create a conflict (Poznahovska, 2016, unpublished; Aritz & Walker, 2009). Harrison and Peacock (2010) tracked the collaborations between native English and nonnative English-speaking students. Their study describes the anxieties and dilemmas that students experience when faced with linguistic proficiency differences:

[Native Speaking] Student 1: This is gonna make us sound really bad. Sven was in our group and I wrote his section for him because...we were like, 'this doesn't make sense, this doesn't fit in with the rest of the report' and I dictated it.

[Native Speaking] Student 2: I ended up writing it, I think.

Student 1: It was like, so bad, but we were getting really stressed...But we spoke about it without him and said, 'we're not letting Sven write this', 'cos...

Student 2: Well, no, 'cos he couldn't, because it was our marks. (p. 888)

The above excerpt illustrates why students may sometimes resort to editing or rewriting a peer's text—sometimes without the peer's consent. Furthermore, the excerpt describes the struggle that the native-speaking students experienced between collaborating on revisions versus getting a good grade on their project.

As a professional and technical writing instructor, I saw first-hand some of the challenges that students experienced when co-writing across linguistic proficiency differences. In a pilot study with 37 linguistically diverse students at Carnegie Mellon University, higher proficiency students reported feeling frustration and anxiety over their grades, while lower proficiency students tended to feel devalued and excluded. One student—who categorized herself as nonnative speaking—described her experience working on a linguistically diverse team and the ways that her peers behaved towards her:

[A] lot of times I'd be like, "I can edit that section," but the job will go to another native speaker, which I thought was a little off-putting for me because I had worked on a lot of other projects like this before and I am, generally, I think I am pretty good at those kinds of tasks. But it was not given to me. So I think that was one case where people assume certain things about you because you are not a native English speaker or because your accent is different. (Poznahovska, 2016, unpublished)

Later on, the student explained that because of time constraints, a desire to get a “good grade” and lack of incentives to challenge her peers, she acquiesced to her peers’ decisions (Poznahovska, 2016, unpublished).

The excerpts above shed light on a common misconception within linguistically diverse teams—that the team’s problems stem from language issues rather than from a lack of communication about the collaborative processes. With poor communication comes conflict and a slew of problems; students tend to perceive problems as a fault of their peers rather than as a result of poor planning (Maylath et al., 2013). Many of the negative feelings of resentment, anxiety or devaluation arise or are amplified during moments of stress, such as when a deadline needs to be met. In those moments, communication falls by the wayside and students resort to destructive responses like the ones we see in the excerpts above. Students perceive the responses as indicative of their peers’ personalities, further driving division between each other.

Yet, studies have shown that some of the writing challenges that teams experience have less to do with proficiency in English (Varhelahti & Turnquist, 2021) and more to do with poor communication about expectations, values, and underlying assumptions about language (Li et al., 2017; Zemliansky, 2012). Therefore, teamwork pedagogy needs to investigate how we can better train students to better scaffold the writing process and to ask for help when they need it. Students need to be taught how to distribute roles and tasks more equitably when there are linguistic proficiency differences on a team. Students need to be taught how to scaffold feedback and revision into their projects so that there are ample opportunities to address possible writing challenges. If students include frequent opportunities to check in with one another, they may prevent minor writing challenges from becoming intensified and irreparable.

Equally important to scaffolding the writing process is knowing how to discuss norms and expectations about the project with their team members. Students who work in linguistically diverse teams face a lot of anxiety and stress when talking about language. They fear coming across as either offensive or incompetent (Harrison & Peacock, 2009; Kim et al, 2019). At the same time, a lack of communication about norms and expectations can perpetuate false assumptions about each other's abilities, goals, intentions, previous experience, and needs in the project. Students, then, make decisions based on those false assumptions which can create divisions and even come across as hurtful. Therefore, teamwork pedagogy needs to do a better job of teaching students communication strategies that are accommodating and empathetic towards the differences that their peers bring to the team. Teamwork pedagogy needs to foster perspective sharing and perspective taking so that students are aware of each other's needs, goals, anxieties. Students can then plan for possible obstacles that may arise during the project, and perhaps be more understanding should problems arise.

Despite students' feeling anxious about working in linguistically diverse teams, teamwork pedagogues can leverage some of that anxiety to illustrate the importance of planning and unpacking expectations on a team. Perhaps if students see the value of team planning in linguistically diverse teams, they might even apply it to other team contexts.

### **Pedagogical Research on Team Strategies in the Classroom**

In the hopes of getting student—and sometimes instructor—buy-in into the importance of teamwork, communications researchers have tried a variety of interventions. Specifically, scholars have experimented with virtual reality (Maylath et al., 2013), reflection (Domke-Damonte & Keels, 2015; Lam, 2018), and experiential learning (Zemliansky, 2012). The hope

has been that if students experience teamwork through different contexts, they might be more likely to see its value in the classroom and beyond.

Scholars in teamwork have consistently exclaimed the importance of team planning for the success of a project and for the cohesion of a team (De Dreu & Weingart, 2003; Lam, 2018; Ruppel et al., 2013; Wolfe, 2010). Important aspects of team planning include organized meeting minutes (Wolfe, 2006, 2005), task schedules with clear roles, deadlines and deliverables (Hovde, 2014; Schultz et al., 2010; Wolfe, 2005), team charters (Aaron et al., 2014; Byrd & Luthy, 2010; Hunsaker et al., 2011; Tornwall Joni et al., 2021; Wolfe, 2010; Ding & Ding, 2008), and good leaders (Brewer & Holmes, 2016; R. M. Fuller et al., 2016; Lam, 2018; Lam & Campbell, 2021; Lambertz-Berndt & Blight, 2016). For example, Lam and Campbell's (2021) research on managing rapport between leaders and team members calls for the importance of "[p]roviding students with guidelines on how to conduct team meetings, report clear and accurate information, and communicate via the most effective media" (p. 198). Lam and Campbell (2021) draw a link between planning and quality communication and ask instructors to better scaffold the team process for their students. While these studies provide important suggestions for how to teach team planning, they do not take into consideration the specific challenges, anxiety, and resistance that students experience on linguistically diverse teams.

An important aspect of team planning is establishing an environment of psychological safety and trust to encourage team members to open up about their differences (Dusenberry & Robinson, 2020; Edmondson & Lei, 2014; Tjosvold et al., 2004). Specifically, researchers in professional and technical communication have been emphasizing the benefits of perspective sharing, perspective taking, and accommodation that can flourish when teams establish psychological safety and trust (C. M. Fuller et al., 2012; Lam, 2011; Moreau, 2020; Zemliansky,



2012). For example, Moreau's (2020) work on workplace teams suggests that members who feel that there is a culture of trust and openness are more likely to discuss their different ideas without fear of repercussion of negative feelings. Teams who make the effort to establish psychological safety and trust can share ideas and innovate in unique ways.

An important aspect of building trust on teams is creating shared norms for communication and collaboration (H. S. Park, 2008; Tjosvold et al., 2004). The research on shared values or "shared mental models" finds a strong correlation between team planning, effective communication, and having a shared understanding of the team process (Stout et al., 1999; Stout & Salas, 1993). Specifically, the research finds that teams who plan tend to spend more time discussing their expectations for the project, discussing differences in values and goals, and trying to mutually decide on how best to structure the project (Stout et al., 1999). Studies on politeness (Friess, 2011; Lam, 2011; J. Park, 2008) and rapport building (Lam & Campbell, 2021) have also found that shared norms for communication—such as apology or conversation styles—can help establish shared expectations and ultimately lead to increase in trust among team members. Paul et al.'s (2021) study on virtual teams also calls for trust to be established early on in a collaboration. Echoing other research in the field, Paul and colleagues (2021) suggest agreeing on shared communication norms as one way to establish trust on a team early on.

In an attempt to encourage students to plan and be more transparent about their goals, values, and expectations, scholars have suggested different communication exercises (Aritz et al., 2018; Aritz & Walker, 2009; Brewer & Holmes, 2016; Lam, 2015, 2016; Zemliansky, 2012). For example, Zemliansky's (2012) study on experiential learning in team projects found that teams who took time to plan and to unpack communication norms tended to experience increased

trust between team members. Zemliansky (2012) calls for teams to spend more time planning team projects so that they may develop interpersonal relationships and trust, both of which are important for a successful team. Trust is an important factor in discussing differences on a team; students need to feel open to sharing without worrying about possible repercussions (Kim et al., 2019).

Similarly, Brewer & Holmes (2016) conducted a pedagogical study on team discourse to try to better understand how commonly used team terminology can create misunderstandings and even breed distrust. Specifically, they created and piloted an activity that asks students to unpack their assumptions about common team terms, such as “always” or “ASAP” (as soon as possible), and provide specific definitions and criteria for the use of those terms. Their team activity revealed that team members typically have different beliefs and values around common team terms; however, teams often enter into a collaboration assuming that everyone has similar value systems and definitions. This disjunction between reality and the assumptions teams make explains how some teams can be dysfunctional despite their best intentions to cooperate and do well on the project. Ultimately, Brewer and Holmes’s (2016) study calls for teams to unpack assumptions about language and draws attention to the importance of mindfulness towards difference and attention to the clarity of language norms on teams. Although Brewer and Holmes’s (2016) study provides guidance for students on how to discuss underlying assumptions, the exercises have not been studied within the context of linguistically diverse teams.

Research on specific collaboration tools has also investigated their impact on the quality of communication during a team project. Tools typically found in the workplace, such as Agile (Pope-Ruark, 2015), Scrum (Friess, 2019; Friess & Lam, 2021), and team charters (Ding &

Ding, 2008; Rehling, 2004; Wolfe, 2010) have been adapted to the classroom to help students improve their team communication. Friess and Lam's (2021) study of groupwork in the classroom found that teams who used Scrum communicated more frequently and showed more empathy towards one another in their communications. Similarly, Lam's (2013) study on text messaging on teams found that students who used text messaging tended to communicate more frequently and ask more project-related questions. Because of the higher instances of communication and the increased quality of communications, students reported feeling more connected to one another throughout the project (Friess & Lam, 2021; Lam, 2013).

Kim and colleague's (2019) research on native and nonnative speaker interactions in the workplace also suggests that teams need to spend more time setting norms for communication. The researchers call for more open communication and norming about language expectations so as to prevent people from making false assumptions about one another. The participants in Kim et al's (2019) study reported feeling more empathy towards their partners once they shared their anxieties and needs with one another. Even though Kim et al's (2019) strategies are rather abstract and vague in nature, the recommendations provide some direction for how linguistically diverse teams might resolve some of the tensions they experience. And, while Kim et al's (2019) study focused on workplace teams, their recommendations can point pedagogues in the right direction for how to help student teams navigate linguistic proficiency differences.

Meanwhile, other teamwork scholars have drawn attention to the link between team members' participation and their investment in a project. Specifically, scholars have found that if team members' goals are not taken into account, they may lose interest in a project, withdraw from the collaboration, or even be perceived as slacking (Lam, 2015; Wolfe, 2010). One of the more compelling studies conducted on team planning was Lam's (2018) study on data-driven

decision making on student teams. In the study, Lam (2018) provided students with a framework called CATA for collecting, analyzing, triangulating, and acting on their team members' commitment, performance, obstacles, and needs. Lam's (2018) study found that the data-driven framework supported more intentional reflection on students' own work and their team's progress and empowered students to make more informed decisions about their teams.

One of the key resources that has been developed out of the research on workplace teams is Wolfe's (2010) book on collaborative writing, *Team Writing: A Guide to Working in Groups*. Wolfe (2010) emphasizes the importance of planning and provides several strategies, such as the task schedule for time management, team charters for unpacking goals, expectations, commitments and values, strategies for avoiding and managing conflict, meeting minutes, and project management approaches. Despite finding its roots in workplace teamwork, Wolfe's (2010) book has been widely used by instructors to create lessons, activities, workshops, and projects that help students better plan for their collaborations. However, research does not exist on how to use these strategies on teams that struggle with perceptions of linguistic proficiency differences.

### **Gap and Research Questions**

While there have been many studies aimed at improving communication and the team process for student teams, the research has yet to explicitly provide guidance for navigating linguistic proficiency differences on student teams. For instance, Wolfe's (2010) book, while it has seen much success in the classroom, fails to address a key context that many students encounter in classroom and in workplace teams—linguistic diversity. *Team Writing* (Wolfe, 2010) does not provide strategies for how to navigate linguistic differences on a team. While the

team charter strategy comes close to helping students unpack some of their underlying assumptions, the charter's primary focus in *Team Writing* is to avoid and plan for potential team conflicts. In addition, the *Team Writing* book has not been updated in over a decade and the pedagogies within it have not been critically examined since the book has been written. Much of the book's influence comes from Wolfe's research on workplace and student teams conducted in years prior (Wolfe, 2006, 2005). The field has since grown, and the methods used in teaching teamwork have become more sophisticated.

Despite the efforts of previous studies to offer teamwork best practices and to attend to linguistic differences on teams, none of the research above offers sufficiently concrete strategies for addressing the problems that students encounter when they perceive their peers to have a different proficiency in English. Some significant questions still remain, such as: At the most basic level, how do we encourage students to overcome their anxieties about language differences and try to engage in planning for their project? Additionally, many of the studies that do discuss best practices for teamwork focus on workplace teams and have yet to investigate how students use those strategies in the classroom. Finally, while many studies expound on the different strategies that are available to teams, few discuss the role of feedback and revision in managing linguistic differences and alleviating students' anxieties. Out of the studies that do explore feedback, most exist within management, business, and technical journals; the professional and technical communication field has yet to explore the relationship between feedback, revision, and linguistic proficiency differences on student teams. Many scholars within professional and technical writing have been calling attention to the oversights in the research, signaling that there is an increased need to help students in the ever diversifying

professional and technical communication classroom (Starke-Meyerring, 2005; Miles, 1997; Yu, 2012)

In order to address the gaps in the literature, my dissertation seeks to gather insight into possible ways that teachers can help students cope with the challenges of collaborating across linguistic proficiency differences. I will first study how professionals navigate this context and gather insight into the strategies that they use in linguistically diverse teams. I will then examine how students apply the communication strategies that professionals emphasize into their classroom collaborations. Finally, I will explore how we can leverage students' anxieties about collaborating in linguistically diverse teams to encourage them to implement the best practices. More specifically, my dissertation aims to answer the following research questions:

- 1) How do professionals collaborate across linguistic differences and what strategies do they use with their peers?
- 2) In order to bridge the gap between the workplace and the classroom, what are some ways that we can teach collaborative strategies and best practices in teamwork to our students? In what ways should we update our current approaches to teaching teamwork?
- 3) To what extent does a pedagogy focused on team planning and communicating norms help students implement best practices on their teams? Compared to the ways we are currently teaching teamwork in the classroom, how effective are the revised approaches in helping students collaborate across linguistic differences?

### **Research Goals and Dissertation Structure**

In this dissertation, I will reevaluate some of the current approaches to teaching teamwork and provide alternative pedagogies that more readily address students' current needs in the classroom. The goal in doing so is to not only to better assist students in collaborating on classroom projects, but to also better prepare them for the types of team interactions they might encounter in the workplace. My dissertation will provide students with concrete strategies for navigating diverse team dynamics, particularly linguistic differences; these strategies will come in the form of protocols as well as heuristics that students can carry with them into their collaborations.

More specifically, in Chapter 2, I investigate the pedagogical challenge of teaching teamwork to students with different proficiencies in the English language. I unpack some of the obstacles that students face, including rewriting a peer's work without their consent, lack of participation opportunities, and resentment over task distribution. In order to help instructors better serve their students, I turned to professionals who have expertise in co-writing across linguistic proficiency differences. I interviewed 20 professionals from a wide range of industries, including technology, engineering, nonprofit, art, publishing, and business. Using grounded theory (Charmaz & Belgrave, 2002; Glaser & Strauss, 1967), I analyzed the transcripts for patterns, focusing on the challenges that professionals encountered with linguistic proficiency differences and the strategies that they used to avoid or resolve those challenges on their teams.

My interviews with professionals in Chapter 2 shed light on what we already know are best practices in teamwork. Moreover, the interviews revealed the urgency of implementing these best strategies and provide new insights into the kinds of conversations students need to be having on their teams. At the same time, the interviews highlighted gaps between professionals' team processes and what students were doing (or rather not doing) in the classroom.

Specifically, despite the interviews in Chapter 2 and teamwork research supporting the importance of planning, getting students to plan in the classroom has been difficult to do (Allen et al., 2013). As a result, in Chapter 3, I shifted my research direction: Instead of trying to find new teamwork strategies to provide to students collaborating in linguistically diverse teams, I sought to interrogate *how* we are teaching those strategies and *how* students are using those strategies. In the first half of Chapter 3, I investigate why the current team pedagogy is not meeting students' needs. I unpack our existing approaches to teaching teamwork (Wolfe, 2010) and uncover significant gaps in student buy-in. Specifically, I look at how the “traditional” method of teaching is falling short of meeting students' needs; students are often taught planning strategies in a lecture-like format in class, given little time to practice the strategies, and then expected to apply them in their teams later on. The challenge is that under a “traditional” model of teaching students tend to exhibit low buy-in and do not perceive the importance of planning in the first place. Students tend to assume that their team will have little to no conflict and therefore do not see a need to take precious time out of their project to plan ahead.

In the second half of Chapter 3, I revise the existing “traditional” approach into a “flipped” model that stresses the importance of team planning and aims to increase student buy-in. In a flipped approach, students learn about the team concepts on their own and then meet with their teams to apply and practice the strategies. The flipped approach includes more opportunities for reflection, time on task, and hands-on collaborative activities that often reveal underlying tensions, assumptions, and differences in project expectations. One of the main components of the flipped approach is a set of scenarios that illustrate bad and good planning. Based on students' real-life experiences, the unproductive planning scenario illustrates how seemingly harmless and lax approaches to planning can destroy team cohesion and create



significant stress for a team. Then, using professionals' team experiences from Chapter 2, I present students with an "alternative universe" scenario where the fictional team uses planning strategies to scaffold the project and their team's interactions. The scenarios juxtapose how different planning attitudes can significantly impact the course of teamwork and help students identify the destructive planning approaches they might be taking in their team projects. In addition, students are asked to individually draft a task schedule prior to meeting with their teams and sharing their different ideas. Students compare the different task schedules and explicitly see how different expectations about the project can potentially lead the team into very different directions. By engaging in the task schedule activity, students can see the importance of having planning conversations ahead of time so as to avoid potential unproductive conflict later on.

The flipped approach in Chapter 3 significantly improved students' task schedules. Students saw the importance of having a project timeline and budgeting time for review and revision. However, the pedagogical revision in Chapter 3 did not lead to an improvement in the team charters that students created. Students continued to struggle with some of the difficult conversations around value-based conflict, expectations, and goals for the project. Students took a universalist perspective on teamwork and assumed that their team members had the same approach and values that they did. Therefore, the goal of Chapter 4 is to introduce a pedagogy that better attends to differences in teams. I apply the flipped pedagogical model to team charters to provide students with more opportunities for reflection, time on task, and application in the classroom. Specifically, students read scenarios depicting common value-based conflicts that teams experience. Then, students reflect and report on their individual values and preferences. When they come together with their teammates, they compare their individual values and expectations. Unlike previous iterations of the team charter pedagogy, the approach

in Chapter 4 uses scenarios to teach students how to compromise and attend to differences in empathetic ways. Students are given sample discourse strategies and provided with opportunities to practice compromise in low-stakes and nonface-threatening scenarios prior to being asked to compromise on their team projects. Analyses of students' team charters suggest a significant improvement in how they are making space for difference within their teams, attending to the nuances of teamwork, and planning for feedback and revision.

Chapter 5 concludes this dissertation with an examination of the limitations, significance of this research, implications for classroom and workplace teamwork, and a discussion of how future research can continue to extend teamwork pedagogies. The studies in this dissertation give very powerful insight into some of the challenges facing students and instructors of teamwork today as well as into some of the solutions that can be used to tackle those challenges. The research in this dissertation both supports the ongoing efforts of teamwork scholars and reassures teachers of teamwork of the significance of their pedagogy. The strategies that we are teaching are indeed important for successful teamwork. However, my research also provides an overhaul of how we are teaching teamwork, reexamining how some of our existing approaches are doing a disservice to our students', especially those who are marginalized. Recent research has paid more attention to diverse teams and the ways that power, inequity, and biases can be hidden under the guise of neutral and objective procedures (Jones et al., 2016). Moreover, in light of our current social landscape, research has called for more attention to social justice and intercultural competence in technical and professional communication pedagogy (Bivens et al., 2020; Jones, 2016; Swartz et al., 2020; Yu, 2012). My dissertation research aims to contribute to these ongoing conversations, provide explicit pedagogies that attend to diversity on student teams, and help students effectively navigate the terrains of diverse teamwork.



## CHAPTER 2: INVESTIGATING PROFESSIONALS' TEAMWORK STRATEGIES WHEN COLLABORATING ACROSS LINGUISTIC PROFICIENCY DIFFERENCES

This chapter was originally published in *the Journal of Business and Technical Communication* in April 2020.

### **Introduction**

When students co-write a text, their goal is to engage in “meaningful interaction and shared decision making and responsibility between group members in the writing of a shared document” (Dale, 1997, p. 12). Because of the globalized nature of the workplace, one valuable context for such a collaboration is when writers who have different levels of proficiency in the English language co-write a text. Many professional communication courses engage students in these types of collaborative activities with the goal that students will offer feedback to one another and potentially produce a text that represents a negotiation of writing approaches, genres, and linguistic features (Wolfe, 2010; Maylath et al., 2013; Herrington, 2010; Canagarajah, 2006).

While co-writing across different levels of English proficiency (EP) has valuable benefits for students, certain challenges can prevent them from meaningfully engaging with their peers. Namely, co-writing with peers who have different EPs can create unproductive conflict during the feedback process of producing a text. The aim of this study, therefore, is pedagogical: to explore the different strategies that professionals use when co-writing across EP differences and thinking about how teachers might use those strategies when preparing student writers to negotiate feedback and deliverables in productive and collaborative ways.

## Research Background for the Study

The terms native English speaker (NES) and non-native English speaker (NNES) have been much debated in the literature, particularly the extent to which they are put in opposition to each other in a static dichotomy (Pérez-Llantada, Plo, & Ferguson, 2011; Lillis & Curry, 2010). Researchers have argued against these categorizations calling for more nuanced understandings of language proficiency that acknowledge the fluidity of language practice (Koerber & Graham, 2017). In the following study, I attend to these important considerations by discussing language ability in terms of *perceptions of proficiency*. Specifically, I stray away from objective language criteria—such as tests of proficiency—and instead embrace the ways that co-writers’ perceptions of each other’s linguistic abilities, or proficiency, influence their collaboration and feedback. co-writers’ perceptions of their fellow co-writers’ proficiency can be influenced by factors such as their name, accent, education level and location, job title and status within an organization, and years of experience with a language, as well as the presence (or lack) of grammatical mistakes within a text, to list a few.

At the same time, the labels NES and NNES do influence how participants view themselves and their peers; those identifiers factor into the larger equation of how they perceive proficiency. In some cases, the labels can be suggestive of the contexts in which the English language was learned. In other cases, they can represent affiliations with a particular language group. Writers might also use these labels to suggest their own familiarity with a language without drawing attention to specific linguistic markers of proficiency. The complexity of these labels can be seen in the varied ways in which the participants in this study use them. Some participants used NES and NNES to suggest higher proficiency (HP) and lower proficiency (LP), respectively. But in some instances, NNES writers described helping both NES and NNES

writers improve their writing, demonstrating that NES writers did not always have HP and that NNES writers did not always have LP. NNES participants also perceived their own proficiency as evolving and, in some cases, referred to themselves as nonnative speakers of English with native speaking proficiency. All of these situations illustrate the multifaceted nature of proficiency and its relativity in interactions.

The importance of taking a perception-focused approach to proficiency is that writers' confidence in their own and their peers' abilities is often influenced by assumptions based on their perceptions of EP. Specifically, people's perceptions of another person's linguistic ability often influence their assumptions about that person's intellectual competency (Trahar, 2007), and when students collaborate on teams, those who exhibit a LP in English might be misperceived as potential threats to the success of students who have a HP (Le Roux, 2001). These misperceptions might cause writers who perceive themselves as having a LP to have less confidence in their own abilities or to view feedback from HP peers as more authoritative, constraining the dialogue and engagement between the two collaborators (Allen & Katayama, 2016; Allen & Mills, 2016; MacIntyre, Noels, & Clément, 2002). Alternatively, writers who perceive themselves as having a HP might have less confidence in their LP peers' abilities to perform writing tasks according to what they believe is the appropriate "standard" (Harrison & Peacock, 2010).

In a study on an international classroom in the United Kingdom, Harrison and Peacock (2010) explored how perceptions of EP negatively affected the collaboration between NES and NNES student writers. The researchers found that NES writers perceived their NNES peers as having a LP and therefore did not have confidence in the NNES writers' abilities to perform a writing task. The NES students explained that texts written by their NNES peers were "not to

their [NESs'] sort of standard" and expressed concern over how that would affect the groups' grades (p. 889). Instead of using the situation as an opportunity to discuss linguistic differences and expectations for the text, the NES students avoided giving feedback to their NNEs peers and rewrote the text that was "so bad":

Student 1: This is gonna make us sound really bad. Sven was in our group and I wrote his section for him because...we were like, 'this doesn't make sense, this doesn't fit in with the rest of the report' and I dictated it.

Student 2: I ended up writing it, I think.

Student 1: It was like, so bad, but we were getting really stressed...But we spoke about it without him and said, 'we're not letting Sven write this', 'cos...

Student 2: Well, no, 'cos he couldn't, because it was our marks.

Although the students did not indicate what their precise textual concerns were, this example shows that the NES students made assumptions about Sven's ability to accomplish the writing task based on their perceptions of his linguistic competency. When we look at the NES students' reflections on the situation, we can see that they struggled with the decision to rewrite their peer's text. The NES students reflected on the problematic nature of their actions and used face-saving disclaimers, such as "This is gonna make us sound really bad," and justifications, such as "we were getting really stressed." But their anxiety over how Sven's text could have threatened their grades and success trumped their desire to maintain collaboration throughout the project.

The feedback avoidance exhibited by the NES students in Harrison and Peacock's (2010) study reveals a troubling and unproductive approach that is echoed in other research as well.

Specifically, when NES students avoid giving feedback and communicating with NNES peers, the latter can often respond in a reciprocally unproductive manner by withdrawing from group discussions and decision making (Aritz & Walker, 2009; Gluszek & Dovidio, 2010; Poznahovska, 2016). For example, in a pilot study conducted with 37 students at my institution, a NNES student described a situation in which her NES peers decided to exclude her from editing the group project. She found the decision “a little off-putting...because [she] had worked on a lot of other projects like this before” and believed herself to be “pretty good at those kinds of tasks” (Poznahovska, 2016, p. 15). Despite not agreeing with this decision, the student acquiesced to their choice, without bringing her concerns to her peers’ attention. She explained that on one hand she did not want to “make it a big deal,” but on the other hand, she also “didn’t know what to do about that” (p. 18). When students do not know how to address issues around language expectations, they risk creating unproductive team dynamics that can suppress conversation and deliberation and potentially lead to their resenting both the project and the collaborative process as a whole (De Dreu & Weingart, 2003).

These studies suggest students’ overall dissatisfaction and anxiety about working with peers who are linguistically different and their unawareness of how to address these situations in a collaborative way. Such anxieties over feedback are not unique to students who co-write. Factors such as deadlines (Ding & Ding, 2008; Yu, 2012) and cross-cultural differences (Bokor, 2011; Kupka et al, 2009) can decrease students’ confidence and put unproductive pressure on them to balance collaboration with the demands of an assignment. Research on teamwork has already made great strides in addressing obstacles related to feedback during collaborations, providing students with valuable practices such as forming task schedules and team charters in order to structure feedback and manage divergent expectations (Wolfe, 2010; Yu, 2012) as well



as encouraging students to actively deliberate participation and performance standards (Earley & Gibson, 2002; Goby, 2007; Starke-Meyerring, 2005; Wolfe & Alexander, 2005).

While research on group anxiety and team planning has provided students with strategies for scaffolding feedback and deliberation, much of the research has overlooked the role that EP differences play within a co-writing context. Specifically, when EP differences arise on a team, anxieties concerning efficacy, performance, and time management can often be exacerbated, making this context especially interesting to study. In the following example from an interview for this study, one professional (NES) reflected on the anxieties and dilemmas she faced when deciding to offer feedback to a NNES peer during a graduate school team project:

I don't know that I have the skills to teach a nonnative English speaker how to improve their writing. Nor was I sure that that would've been great if I had done that...was that my role as a student? And would he even want me to do that? Or would he be offended and be annoyed that I was trying to do it? (Participant 15, NES)

The participant's comment suggests her anxiety about providing feedback without having adequate experience and ethos.

Research has previously touched this resistance to feedback, finding that in situations in which feedback is perceived as unsolicited "teaching," students are less likely to offer commentary to one another (Wolfe & Alexander, 2005). Students in Wolfe and Alexander's study noted that teaching collaborators takes too much time and that it is intrusive and not collaborative; therefore, team projects should not be spaces for that kind of instructive work. Such a perception of feedback limits what students can do in the face of EP differences, often leaving them with counterproductive options, such as avoiding communication with peers and

usurping texts they perceive to be troublesome. We can see this side effect with Participant 15 (NES), who ultimately rewrote her peer's text with her other NES teammates, taking an approach similar to that of the students in Harrison and Peacock's study.

Scholars interested in the role that language plays in writing have been more consistently investigating how writers navigate EP within different academic contexts (Allen & Katayama, 2016; Allen & Mills, 2016; Koerber & Graham, 2017; Storch, 2005). Unfortunately, other than Koerber and Graham's (2017) research on proficiency in scholarly writing, much of this research has been out of the purview of professional communication. Furthermore, while existing research has been helpful in raising questions about how EP affects managing the writing process, to my knowledge, it has not given students concrete strategies for how to address perceived proficiency differences within their teams. The goal of this study, therefore, is to explore possible strategies that students can use to help them manage the challenges related to co-writing across EPs.

Towards that end, I interviewed professionals who have experienced co-writing across different EPs in order to investigate their collaborative practices. Turning to professional collaborators for advice about how to help college students is useful for two main reasons: First, professional communication scholars have frequently examined and found insightful the rhetorical practices used by professionals (Koerber & Graham, 2017; Lunsford & Ede, 2011) and their rhetorical practices have often provided foundations for pedagogical research and practices that have benefited students within the classroom (Blakeslee, 2001; Quick, 2012). Second, by turning to professionals for advice, we can offer students solace in knowing that professionals, too, encounter similar challenges when co-writing across EP differences but that they have approaches for managing those obstacles. To better understand professionals' collaborative

practices and begin thinking about pedagogical implementations, this study explores the following research questions:

1. What strategies do professionals use when they co-write across EP differences?
2. In what ways might professionals' experiences inform how writing instructors teach collaborative writing to students?

Based on the data collected in this study, I suggest three strategies that students can use in the classroom: calibrate genre and reader expectations, establish protocols for reviewing texts, and frame feedback as a learning opportunity.

These strategies might look familiar to scholars and teachers of teamwork and professional writing. Although this exploratory study does not reinvent the wheel, it does shed light on the significance of using already established strategies in the context of co-writing across EP differences. And its findings provide insight into pedagogical approaches that writing instructors can use to help students mitigate their anxieties and feel more empowered to engage with diverse peers.

## **Methods**

Using my university's alumni directory, I recruited 20 professionals (12 female, 8 male) via e-mail from technical industries, the arts, nonprofit organizations, and higher education. These participants were filtered according to experience with co-writing documents across different EPs and then compensated with a \$20 Amazon gift card. All participants in the study reported having experienced co-writing across different EPs within the past year, with 90% of them having had at least 3 years of experience.<sup>1</sup>

Although this study looks at perceptions of proficiency differences, both the participants and I use the terms NES and NNES in instances throughout the interviews. In those instances, the terms do not quantify the level of proficiency but rather serve as background information about the participants and signal the context in which they learned the English language. Readers should be aware that my recruiting e-mail used the term “native English speaker,” which might have prompted participants to think in terms of the NES/NNES dichotomy. But I began the interviews by speaking about proficiency, asking participants to reflect on their experiences with writing with “people of different linguistic proficiencies”; I did not begin using the terms “native English speaker” and “non-native English speaker” until after the participants mentioned them first in the interviews. Almost all the participants identified themselves as either NES or NNES, with only one participant—Participant 16—perceiving himself to be both. He explained that his native language was not English, but that he now has native EP after years of study and working in the United States. Throughout the remainder of this study I refer to him as NNES to NES.

My data collection consisted of 20 experience-based interviews. I used a semi-structured, open-ended approach for these interviews, which started by asking participants to recall and describe a recent collaborative situation in their lives:

I'd like you to remember a recent example or recent situation where you had to co-write a document with someone who had a different language proficiency.

And once you have one, I'd like you to walk me through the situation in as much detail as possible.

After I established the topic, participants directed the conversation, elaborating on the specifics of their examples.

The 20 interviews generated 16 transcripts and four detailed sets of notes that I took during the interview. To analyze the interview data, I used grounded theory (Charmaz & Belgrave, 2002; Glaser & Strauss, 1967), identifying patterns and salient responses through careful, iterative study and comparison of the codes within the transcripts. To facilitate the grounded theory analysis within this study, I used the software MaxQDA to create, assign, and organize codes within the data. To initially sort the data, I used descriptive starter codes (Miles, Huberman & Saldaña, 2014). Then I used open coding (Corbin & Strauss, 2008) to identify more specific situations, attitudes, and behaviors within participants' interview responses, recoding the data based on the open-coding system. Finally, using axial coding (Corbin & Strauss, 2008), I looked for codes that appeared together frequently, identifying trends, patterns, connections, and relationships between the open codes. I then clustered the open codes, labeled the clusters with a broader axial code, and gave these axial codes a specific definition. Once again, I recoded the entire data set with the additional axial codes to both check the viability of the codes and identify any inconsistencies within the coding.

In the following section, I discuss my findings according to the most prominent themes that emerged from the axial coding of the data.

## **Findings**

The participants in this study stressed the importance of planning for co-writing with peers with different EPs. Specifically, these professionals' plans comprised not only temporal dimensions such as timelines but also analytical dimensions such as genre analysis and the negotiation of feedback norms. Their experiences suggest three specific strategies that co-writers can use to plan for productive collaboration: calibrate genre and reader expectations,

establish protocols for reviewing texts and frame feedback as a learning opportunity. During interviews, the professionals described employing the strategies to different degrees and often in combination with one another.

### ***Calibrate Genre and Reader Expectations with Peers of a Different EP***

All 20 participants explained that either they or their peers came across situations in which their co-writers did not meet expectations for deliverables. Often this situation stemmed from co-writers' lack of exposure to and awareness of the genres, norms, and expectations that the organization valued. As Participant 20 (NES) explained, expert writers took for granted the steps they went through to learn expectations and practices in their current professional environments, so when novice writers were asked to perform and meet expectations that had not been defined, they often missed the mark on the deliverable:

But they've [novice writers] never seen one of that quality....They didn't realize that they were way underperforming....And like if you haven't seen really well written things and now you're asked to do it, and you, you're getting compared to that level, it's a really high...bar to all of a sudden jump to....Now all of a sudden you're required to just come to the table with that end result.

In such situations, Participant 20 (NES) explained, it was “unrealistic” to expect writers to perform and deliver when the genre and reader expectations were not clearly articulated.

Out of 20 participants, 17 actively worked to calibrate genre and reader expectations throughout the course of their projects. In doing so, they were able to establish consensus between co-writers as to the goals, genre expectations, and style of a given text and help those

who were unfamiliar with meeting those expectations. Specifically, when calibrating expectations with their peers, writers shared institutional policies and models, and project guidelines from supervisors and clients. By using such criteria that came from authoritative sources outside of the team—such as the institution, supervisors, or clients—writers avoided giving feedback that ran the risk of coming across as a personal interpretation.

One of the approaches that participants used to communicate genre norms was to reference company guidelines and institutional policies. In her work as a communications specialist, Participant 5 (NES) explained that she would avoid drawing attention to her co-writer's "colorful language" that emerged from her "Spanish" background. Instead, she would focus her feedback on institutional standards for language, formality, and style:

"These are the stylistic guidelines that we have, and this didn't meet the guidelines for whatever reason." It's easier for me to focus on black and white issues we have written down to follow the process versus bring[ing] your personal situation into it.

As Participant 5 (NES) explained, instead of focusing on individual stylistic differences, "I try to keep that in mind that just because it's not necessarily the way I would write it doesn't mean it's wrong." She found it more productive to provide feedback that she could map onto concrete institutional criteria and guidelines.

According to team-conflict scholars, conflict caused by personal preferences tends to be the most unproductive conflict on a team (De Dreu & Weingart, 2003; Rentsch & Zelno, 2005). But conflict concerning tasks can be fruitful and generative for group members as they learn from each other about deliverables and different approaches for their project (De Dreu & Weingart, 2003; Rentsch & Zelno, 2005; Wolfe, 2010). Participant 5 (NES) explained that she

was cautious about critiquing her LP peer for her “Spanish” style in order to avoid conflicts created by a “difference of opinion.” Instead, Participant 5 (NES) centered her feedback on the company’s institutional policies, thereby generating discussions about deliverables and creating a more collaborative atmosphere with her teammate of a different EP.

In addition to referencing company guidelines, participants considered the needs of authoritative audiences’ when writing and revising. Recognizing the high stakes associated with how supervisors and managers perceived the text, participants took steps to try to meet expectations and requirements ahead of time. In some cases, participants would conduct audience analyses to predict how a client or supervisor would respond to a text. These participants were then able to ground their feedback to co-writers in audience expectations rather than in personal preferences:

[T]here's a serious group of people who's going to review [the text] ...I have to adhere to the standards of the legal and compliance group rather than just my personal preferences for the writing. (Participant 5, NES)

I'll list the reasons why I think this words which is written, why it is better to present it to the clients. (Participant 11, NNE)

[I'll say,] “Hey, this is good but I could never present this to the management team...because you know they're coming from this perspective.” (Participant 20, NES)

Thus, by making the effort to reflect the perspectives of stakeholders in their feedback, the participants were able to provide a direction for their peers’ writing and reduce face threats



because the suggestions were grounded in the needs of the audience rather than those of individual team members.

During feedback, participants also used models to visually represent company genres and expectations for texts. Participant 20 (NES) mentioned that in his collaborations with writers from all over the world, writing issues could stem from a lack of exposure or “training” in a particular text. Because “a lot of different cultures [train] and teach differently,” he explained, writing expectations and genres could vary between countries and organizations. He summed up his rationale for using models like this:

And so sometimes it has nothing to do with whether they’re capable of it. It has to do with what they’re used to seeing. And so, if they’ve never seen a really good quality report of how it should be broken out and it’s format and template, it’s very unlikely that they’ll create that from the get-go.

Participant 20 (NES) also explained that in his experience as a manager, he not only gave writers feedback and opportunities to rewrite a text, but he also used “examples” and “template[s]” to help them gain exposure to unfamiliar genres and improve their writing process:

So we try to [have] a combination of giving them a second chance, giving them feedback but also giving them examples like, “This is a well-done one. Read that. Look even if it’s not completely—it’s not a duplicate, right? It’s just similar” ...so we try to show them...“Hey this is a good example. Use this as a template. Use this as an example of what we’re looking for.”

As Participant 20 (NES) stressed, a model is not a “duplicate,” it does not dictate to writers what to do or how to do it. Rather, models serve as visual representations of writing goals, as putting

feedback in the context of desired deliverables. The goal of using models, then, was to both help writers identify the problems they have in their own writing (Participant 1, NNEs) and provide an approved document that could help writers become familiar with company expectations.

### ***Establish Protocols for Reviewing Texts***

Participants experienced problems caused by poor timing and lack of feedback protocols. Thirteen participants described situations in which they and their group did not have a clear idea of when and how to give feedback. Unclear timelines, steps, and norms for providing feedback often led to conflicts that impeded constructive review and revision. One result of not planning out feedback and protocols was that co-writers tended to rush through the review process and not have enough time to revise and learn from mistakes. Participant 12 (NES) described a situation in which he and his peers waited until the last minute to look at a co-writer's draft:

There were plenty of times where he's asked for our review and for our help with parts of the white paper....Personally me, I haven't looked at the white paper until this meeting we had the other night. And...it's been in drafts for months, right? So there had been plenty of times for us to look at it and give him feedback. And there was basically, was no feedback until this one night where we all came together and were just tearing away at it.

Then, when the team finally came together to review the text, Participant 12 (NES) explained that the reviewers were “basically giving too much feedback and making direct edits of something [the writer's] been working really hard on.” Instead of deliberating about the content

and next steps for the text, the reviewers resorted to making corrections and revisions for the writer:

Us coming in and critiquing [his text] and then directly making edits and moving things around was frustrating for [the writer]. And we had lots of time before to probably notify him about any critiques and tell him what things could be improved. But, the fact that we were all there just cutting things and tearing away at the white paper—that definitely caused some conflict.

The group did not discuss priorities for feedback, nor did they discuss preferences or best practices for how feedback should have been delivered. If the goal of co-writing is to engage with and learn from other writers, Participant 12's (NES) situation shows how poor timing can undermine that goal.

Although co-writing across EP differences can offer many opportunities to share perspectives and learn from co-writers, participants explained that deadline-driven environments can stifle learning and encourage an unproductive “get it done mentality” (Participant 4, NES). But deadlines are a necessary and unavoidable aspect of the workplace; therefore, in order to account for deadlines and still create spaces for learning, 14 out of 20 participants set up protocols for when and how feedback should be provided. In particular, the participants explained that establishing timelines for writing, reviewing, and revising with their peers was particularly useful for scaffolding productive collaboration while adhering to deadlines:

[We held] the first meeting to talk about the project and a timeline and a schedule and the approval process for the policy....That gave [co-writers] the information they need to understand how the process was going to work in the writing.

(Participant 9, NES)

I work very purposefully to set up timelines for somebody else...I can review [the document] and then also provide more constructive feedback in a way that can actually teach them. (Participant 4, NES)

I would like a person who is less proficient to understand that getting the English correct is really a big undertaking and to allocate the time to do a good job and to work with the editor to go through multiple reviews. (Participant 2, NES)

Participants' experiences illustrate three significant benefits of discussing timelines for co-writing across EP differences. First, by scheduling multiple feedback points throughout a project, these professionals were able to check in with peers and address any concerns—both proficiency and nonproficiency related. As Participant 14 (NNES) explained, when collaborators come from different linguistic backgrounds, the group needs to allocate time for potential issues to be identified and addressed. In addition, participants explained that scheduling review points prevented co-writers from rushing to give feedback at the very end of the project when high stakes could amplify stress and generate tension between co-writers. Second, professionals indicated that by planning for feedback, they were also able to accommodate revision time for the writer to “respond to issues” (Participant 14, NNES). And third, deliberating about timelines provided opportunities for participants to identify and discuss other parts of the project and plan for resolving potential challenges (Participant 9, NES).

Besides discussing timing for feedback, participants also deliberated and agreed on how to give feedback during review points. Specifically, they commented on the importance of having a review protocol in places that would provide writers with criteria for what to focus their feedback on. For example, Participant 12 (NES) and his team decided on a protocol that ignored grammatical errors until co-writers wrote and agreed on the content. Similarly, Participant 20

(NES) explained that at his company, multiple writers reviewed a text based on their expertise. Writers with different EPs were all able to contribute to a text; however, the team made sure to decide on a protocol for how content versus grammar would be reviewed and revised. This protocol was agreed on and tracked on a spreadsheet that documented decisions, roles, and progress concerning the text.

Research on team writing suggests that when writers have an opportunity to discuss and agree on writing goals, deliverables, and constraints ahead of time, they and their team are more prepared to manage challenges that could arise later (Wolfe, 2010). In Participant 19's (NNES) experience, having a "20 minutes conversation" at the beginning of the project allowed him and his co-writers to agree on the review and revision process for the text. Any decisions that were made regarding the review process were actively documented, such as who writes the drafts, who reviews the texts, how feedback should be given, what feedback should focus on, where members can find feedback, and how comments should be addressed, a protocol similar to that described by Participant 20 (NES). By setting up a review process ahead of time, co-writers could get "an earlier warning about [peers'] writing" and address any discrepancies that might come up before unconstructive conflict ensues (Participant 18, NNES).

Participants' data suggest that establishing a review protocol that discusses how to deliver feedback sets expectations for feedback, thereby reducing the potential for unproductive conflict later on. Participant 11 (NNES) and his team seldom faced conflicts that were face threatening or unproductive, mainly because they all expected feedback to be provided and had a concrete protocol in place for delivering that feedback:

Usually what we're doing is just open up a Google Doc where...you can co-write stuff online and then everyone adds edits to it...We read each other's

documentation and put comments on top, on the side of it, as you do via Google Doc basically. And then you do some changes accordingly, and then you resolve the issue.

When co-writers did not agree on the process for delivering feedback, Participant 9 (NES) explained, “then you get all kinds of stuff, and it just makes the process longer.” For example, feedback might be inconsistent, unclear, face threatening, or difficult to find. When issues arose around how feedback was delivered, collaborators risked delaying the review process and the project as a whole. To avoid that, Participant 9 (NES) commented, it was important to agree on “what your expected outcome is” for feedback:

Like saying, “We want you to use track changes.” ...“We want to use the comments [feature],” saying these are the types of comments that are helpful, these types that aren't helpful and why.

Participant 9 (NES) explained that she tried to standardize the review process with her co-writers by discussing the types of comments that would be useful for the group and agreeing on the best strategies for delivering that feedback. Having a standardized delivery method allowed Participant 9 (NES) and her co-writers to compare feedback in order to see “what the general consensus was from everyone on that particular document” and identify “contradictory comments.”

Meanwhile, for Participant 2 (NES), having a review protocol also reduced the possibility of peers assuming that their co-writers had a LP because of their accent or cultural background. In other words, textual issues were not always related to proficiency; in some cases, problems in a text were caused by other external pressures or conflicts. To avoid the possibility of a face-

threatening situation, Participant 2 (NES) explained, she and her team instituted a “peer editing protocol” that involved a second reviewer:

[I would say,] “Yeah there are actually some issues here.” And they may not be because of proficiency in the language; they may be because of the quantity of information and the deadline pressure. So we often try to have a peer editing protocol where someone besides the information developer also has to take a second look at it.

Participant 2’s (NES) experience, then, illustrates not only the value of a review protocol when managing high workload and deadlines but also the importance of layering and sharing feedback responsibility within a text. In writing across EP differences, a review protocol that calls on multiple reviewers can help avoid making faulty assumptions about peers’ competencies and writing abilities.

### ***Frame Feedback as a Learning Opportunity***

The third salient issue that participants experienced was trying to give feedback in a way that was not face threatening to the recipient. *Face*, or “the public self-image” that collaborators want to claim for themselves, is bound up in the ways that feedback is given and perceived (Brown & Levinson, 1987, p. 62). If feedback is either too critical, undermines the writer’s expertise, or embarrasses the writer, it risks creating a face-threatening situation for both the writer and the reviewer, in which conflicts might arise and collaborators might become defensive and closed off. Fourteen participants described situations in which they wished to provide feedback but were hesitant to do so because they feared overstepping hierarchical boundaries,

coming across as “correcting” a colleague, or damaging a colleague’s self-efficacy (Participant 16, NNEs to NES; Participant 4, NES).

Participant 20 (NES) explained that when writers received critiques on their text, they often responded in one of three ways: They perceived the feedback as a “major offense” and refused to write in the future, they lost confidence in their writing abilities and refrained from taking risks in the future, or they accepted the feedback willingly and used it to improve their writing. Although Participant 20 (NES) attributed feedback avoidance to the recipients themselves—they were not open to improvement, so they were “not with us anymore”—his experience showed that the type of feedback also played a role in writers’ responses. Feedback that challenges a writer’s expertise and character (e.g., when reviewers say they “didn’t like it” or doubt a writer’s competence) can create a face-threatening situation. This type of feedback stifles improvement and progress because it targets a writer’s personal qualities rather than concrete textual issues.

Participants also brought up the role that power dynamics play during feedback. *Power*, or “the vertical disparity between the participants in a hierarchical structure,” is intricately negotiated both between subordinates and superiors and between peers (Scollon, Scollon & Jones, 2011, p. 52). Scollon, Scollon and Jones explained this intricate negotiation of face in terms of marked or unmarked interactions. When feedback maintains the usual relationship and power dynamics, the interaction goes unmarked. In other words, the status quo is maintained between participants. When feedback becomes a challenge to power and relationship dynamics, the interaction becomes marked, or noticed. Status quo is no longer maintained, and participants may lose face in front of each. Participant 20’s (NES) concerns about offending co-writers illustrate how power is bound up in the act of giving feedback. The challenge in these writing



situations, therefore, is finding a way to present feedback that encourages co-writers to improve their writing rather than creates a marked situation between participants that leads to personal conflict.

To reduce the possibility of feedback damaging a writer's self-efficacy, 13 participants stressed the importance of maintaining a writer's decision-making power over a text and presenting feedback as a learning opportunity. Participants explained that they would present feedback as suggestions and make sure that the writer was involved in the decision to change or omit parts of a text. For example, despite perceiving her co-writer as having a LP, Participant 7 (NES) was careful to not challenge her peer's expertise by rewriting the text for him or even by giving unsolicited feedback. She instead created a space for dialogue and an opportunity for learning by offering to provide feedback and revisions:

So in the case where I had, you know, peers—if I felt like there was—if they had written a section that I felt was unclear, then I would maybe just talk with them about it, to say, “Would you like me to help you revise that work?” or “Can I make some editing suggestions?” Because I feel that the bottom line is that...even the poorest English speaker still has a very solid grasp of whatever the technical concepts are, and whether you're a writer or an editor, it's critically important to not interfere with that, right?

Participants collaborated with a range of writers, such as supervisors, peers, and subordinates; however, regardless of their co-writers' hierarchical status, participants used similar approaches toward working together to improve texts. Participants would try to either “reconnect with that person after there have been significant changes”

(Participant 5, NES), or they would “leave comments on the side” (Participant 12, NES) that were suggestive:

Instead of direct edits, we would rephrase our critiques and we would say things like, “Well, this section, I think you might want to use this word instead. And here’s a sentence that might work. And I think you might need to be more clear in these parts.” So they were more constructive criticisms that were made as suggestions. So we weren’t editing the paper anymore. (Participant 12, NES)

Similarly, Participant 8 (NNES) explained that his co-writer called him to offer recommendations and discuss his writing in order to maintain Participant 8’s (NNES) contribution to the text:

These are the recommendations that I have for your document. And I want to make sure that I preserve the spirit of what you wanted to write, so I’m calling you to do this.

The collaborator’s approach to providing feedback, then, was to contact Participant 8 (NNES) in order to emphasize that he wanted to “preserve the spirit” of Participant 8’s ideas. Participant 8 (NNES) explained that he recognized the issues in his own text and knew that he needed to improve his writing. At the same time, he appreciated that his peer took the time to offer feedback and then gave him the opportunity to revise the text: “He showed me [how to do] a better document for my project and also helped me to grow as a person. So I think it was great.” In this situation, the co-writers worked together to improve the document; the collaborator offered feedback, and Participant 8 (NNES) ultimately retained ownership of his ideas by revising the text. The goals became less about fixing a text or a writer’s language than about collaborating with one another to improve the project as a whole.

## **Discussion**

The purpose of this study is primarily pedagogical—to identify team strategies that students can use when co-writing across EP differences. Previous research has called for more exploration into collaborations across proficiency differences; however, little work has been done in this area. In conducting this research, I identified three specific strategies that professionals used that can benefit students when they co-write across EP differences: calibrate genre and reader expectations, establish protocols for reviewing texts, and frame feedback as a learning opportunity. By using the three strategies, professionals created avenues for feedback and discussion, thereby scaffolding productive conflict and collaboration with peers who have different EPs.

The findings suggest that calibrating genre and reader expectations is important throughout a project. By reviewing institutional policies, reader perspectives, and models, writers can set expectations for deliverables and provide each other with frameworks for proceeding on a text. These expectations are often recalibrated as the project proceeds and goals shift—part of the success of calibration is also recalibration. That is, calibration is an iterative process; as writers progress on a project, different expectations might surface (Wolfe, 2010). Peers, therefore, need to check in with each other throughout the process. If they rely on a single calibration at the beginning of a project, they risk divergences that delay progress later on.

Establishing protocols for reviewing texts offers several benefits to co-writers, especially when there is the potential of face-threatening situations during feedback. Having an explicit protocol for review and revision processes means that co-writers know their role within a text but also can expect to receive feedback from other contributors. When review protocols are outlined

and agreed upon, feedback becomes an expected part of the co-writing culture and is less face threatening because the team focuses on following protocols rather than critiquing individual writers. Because the writers have established that feedback and revision are part of the writing process, they anticipate being critiqued and are less likely to feel that it is a personal offense to their expertise or abilities. As Wolfe (2010) explained, “scheduling revision and feedback into the task schedule creates a team culture in which constructive feedback is simply part of what gets the project done and is not a negative reflection of anybody’s work” (p. 60).

The professionals in this study stressed that in order to reap the benefits of collaborating across EPs, co-writers needed to encourage a broader culture of ongoing learning within the workplace. Specifically, the interview findings suggest that when professionals and their peers framed feedback as a learning opportunity that is part of the co-writing process, they were more receptive to the feedback and engaged in dialogue about their writing. We see this echoed in research on college writing that suggests that students who cling to the writing habits and attitudes about their writing abilities that they had in high school tended to experience a more difficult time adapting to the new academic environment. Meanwhile, students who willingly accepted a “novice status” opened themselves up to new learning opportunities, experimentation, feedback, and guidance that helped them improve as writers throughout their education (Sommers & Saltz, 2004). Such research and my findings, then, suggest that students should embrace a mind-set of career-long learning; in doing so, the professionals I interviewed perceived themselves as more adaptable to different writing environments, genre expectations, and linguistic standards.

Taking a grounded theory approach to the interview allows us to get a firsthand interpretation of professionals’ experiences when co-writing across EP differences.

Professionals reflected on their collaborative practices, differentiating between what they perceived to be productive versus unproductive responses. Furthermore, by using grounded theory in this study, I could track professionals' decisions and behaviors across a variety of disciplines, experience levels, cultural backgrounds, workplace environments, and gender, finding that these strategies are useful in a variety of contexts and collaborative situations. In taking this approach, then, we might also consider how language proficiency factors into the larger category of difference between team members and the role such differences play in fostering productive conflict. If professionals are able to negotiate EP in productive ways, then perhaps other differences can also be negotiated and deliberated in ways that foster productive collaboration.

This research also suggests an alternative framework for how planning should be taught in the classroom and the role that planning plays during co-writing. On one hand, the study reaffirms the importance of planning as it relates to setting deadlines, scheduling meetings, and making time for feedback and revision. On the other hand, this study asks teachers and students to further their perception of planning beyond its temporal forms and to consider its significance as an analytical process. Even though these professionals explained that time management was important for the success of their teams, much of the planning that they discussed emphasized conversations around genre and expectations—expectations for deliverables, feedback processes, and communication between team members, as well as audience expectations. Such analytic and dialogic perceptions of planning thus focus on using genre analysis and team deliberations to identify differences in proficiency, genre awareness, and feedback styles and then plan how to manage them in the future.

In many ways, this research extends the impact of genre analysis beyond writing collaboration at large. In addition to thinking of genre analysis as a scaffolding tool, we might consider the role it plays in planning both for a text and for future relationships between collaborators. In deliberating project deliverables and feedback expectations, co-writers engage in productive conflict. When writers establish a set of explicit norms, co-writers create a plan for how texts will be written, reviewed, and revised, thereby minimizing surprises and unproductive conflict that might occur later.

Although this research initially began as a search for new strategies that applied to collaborations across EP differences, the findings point to the importance of planning regardless of team composition. Teamwork researchers have long argued that collaboration does not happen without intervention; it needs to be planned. But students often complain that planning takes too long and is a waste of precious time during a project. To reframe students' perception of planning and increase their acceptance of genre analysis, this research provides valuable evidence of professionals using and benefitting from planning within real-world collaborations. By describing the experiences of the professional collaborators in this research, then, I hope to convince students that, regardless of team composition, the process of planning scaffolds productive experiences while accounting for and managing unproductive ones. And I hope that through this planning process writing instructors can help students anticipate and mitigate some of the anxieties they might feel about collaboration.

### **Suggestions for Classroom Implementation**

As instructors, we might begin thinking about how these strategies could manifest themselves in the classroom and the ways that we can translate these practices for students' use.

To help teachers prepare students for collaborative writing situations, the following recommendations outline some possible approaches for using this research in the classroom:

***Use professionals' experiences as evidence of the importance of planning***

One way that these strategies can be taught is by showing students quotations from my interviews with the professional collaborators. These professionals discussed the different challenges they encountered during workplace collaborations and explained how they used planning strategies to facilitate productive co-writing and prevent unproductive conflicts. Their real-world experiences illustrate the types of situations that students can expect to encounter once they reach the workplace.

***Use team charters to facilitate planning***

Another way that these strategies can be taught is through direct application by way of a team charter—a contract that outlines the norms and expectations for a project and the team members. A team charter also serves as an opportunity for collaborators to identify and resolve any differences before the project begins (Wolfe, 2010). When used in the classroom, the team charter acts as a space for productive conflict and deliberation as students bring in different perspectives and agree on the best approaches. A team charter, then, provides a document around which planning can occur, specifically the type of planning that requires deliberating project goals and expectations, discussing feedback processes and priorities, and articulating approaches for resolving conflicts in a polite and productive way. Also, the team charter allows instructors to more directly address proficiency, framing it not as a problem that must be dealt with but rather as a resource and writing factor that the team needs to consider. Teams can draw on the strategies that professionals use to plan how proficiency differences will be managed and apply these differences in meaningful ways. The potential benefit of these strategies is their

application to a wide variety of teams, including but not limited to teams made up of writers with linguistic, cultural, experiential, and disciplinary differences.

### **Limitations and Future Research**

Although this research offers rich insight on the planning strategies used within collaborative writing, researchers need to further investigate how and if professionals use these strategies in practice. The interview methods I used in this study offered rich interpretive data by relying on participants' reflections and memories of their experiences. But such an approach for gathering data falls short of illustrating the dialogic aspects of how participants negotiate texts with their co-writers. Because of the reflective nature of interviews, this approach does not let us see how the strategies are enacted in the moment with other collaborators or how other collaborators react to the use of these strategies. To better understand the contexts in which these strategies are practiced and the implications of these contexts, more research needs to be conducted on the in-situ practices of co-writing across EP differences.

More research is also needed on the classroom use of these strategies. Before we can argue for the effectiveness of these strategies within the classroom, we need to better understand how to best translate these workplace practices into the classroom. The transition from the workplace to the classroom is not seamless; the differences in stakes, goals, level of expertise, and collaborative experience vary between professionals and students. Therefore, if students are to reap the benefits of these strategies and use them to engage in productive conflict, more research is needed on how to increase students' use of the strategies on how students respond to and use these strategies in their own collaborations, and on the extent to which these strategies manage the unproductive challenges that students typically experience.



## Notes

This chapter was originally published in the Journal of Business and Technical Communication.

Please see below for the citation of the article.

Poznahovska Feuer, M. (2020). Scaffolding Feedback Between Cowriters With Different Levels of English-Language Proficiency. *Journal of Business and Technical Communication*, 34(2), 188–213. <https://doi.org/10.1177/1050651919892306>



## CHAPTER 3: TEACHING STUDENTS TEAM PLANNING STRATEGIES: A FORMATIVE CURRICULUM EVALUATION

### Introduction

In the previous chapter of my dissertation, I examined the lack of planning on student teams and sought some alternatives to how we are teaching teamwork. Specifically, I turned to experts for some insight on teamwork—namely, practitioners in the workplace. In my interviews with practitioners, I interrogated situations that were also fraught with potential conflicts—situations where team members with different English proficiencies (EPs) collaborated on writing a text. In situations where members with different EPs are present, teams can often encounter negative assumptions about competency and expertise associated with lower proficiencies. These assumptions can lead to detrimental responses during the collaborative process (see Chapter 1 for more details). My research pointed to three main approaches that practitioners use to mitigate conflict: (1) Practitioners calibrate genre and reader expectations, (2) practitioners establish protocols and criteria for reviewing texts, and (3) practitioners frame feedback as learning opportunities (Poznahovska Feuer, 2020).

My hope was that if I could find strategies that helped practitioners work around negative assumptions and detrimental responses, these strategies could possibly translate into other contexts where team members with diverse backgrounds are co-writing. What I ended up finding was that practitioners were not doing anything that was groundbreakingly novel. Ultimately, practitioners were *planning* their team process ahead of time and continuously revisited and revised their plans throughout a project timeline. Unlike students who tended to rush to “just get it [planning] done,” practitioners spent time discussing values, expectations,

familiarity with different genres and writing processes, and goals for a project (Poznahovska Feuer, 2020). My research suggested that the issues students were experiencing were not due to a lack of good team strategies, but rather from a gap in how we are teaching these strategies in the classroom.

In the current chapter, I seek to bridge the gap between the workplace and the classroom by developing and evaluating an alternative approach to teaching team planning. Specifically, I focus on the *Team Communication* workshop that has been offered by Carnegie Mellon University's writing center (former Global Communication Center) for several years. The workshop has been presented in classrooms across the university where students are required to co-write complex documents as a team. Grounded in research on collaboration, the workshop teaches students about the importance of planning when co-writing on teams, focusing on key strategies, such as task schedules and team charters (Wolfe, 2009). Research has shown that these strategies are integral to the success of a team, especially when team members bring different backgrounds, experiences, and expectations to a project (Wolfe, 2009).

Despite research and instructors alike touting the value of team planning strategies, students have been slow to buy into and use these approaches in their teams. Instead of planning for their projects, students adopt detrimental "divide and conquer" workflows (Wolfe, 2005, p. T4F-22), encounter slacking on their teams (Oakley et al., 2007), and experience frustration and resentment throughout the process (Poznahovska, 2016). Furthermore, because of poor team planning, students may not catch problems until it is too late (Wolfe & Powell, 2009), which can further exacerbate the frustration that students tend to feel during team projects. The above research on student teams suggests that teamwork pedagogy is in need of revision. Specifically, we need to find ways of increasing student buy-in into team planning, encourage better

communication between team members, and help students better scaffold the collaborative writing process.

The goal of this chapter is therefore twofold: 1) to reexamine how we teach teamwork in the classroom and expose some of the gaps in the current team pedagogy and 2) offer some novel approaches for getting student buy-in into team planning strategies by way of a formative curricular evaluation. In order to meet my goals, I split this chapter into two studies. Study 1 illustrates the gaps within the current approach to teaching teamwork. I analyze both survey data as well as students' team planning documents. I, then, report on the main findings and pedagogical problems that are present in the data. Study 2 describes a revised pedagogical approach, a "flipped" modular workshop, that addresses the problems identified in Study 1. Specifically, I describe how the flipped approach addresses the main pedagogical challenges within the original *Team Communication* workshop. In Study 2, I pilot the flipped workshop and evaluate the impact of the revised workshop on student planning and teamwork. Using survey data as well as analyses of teams' planning documents, I describe initial results of the revised approach. I conclude the formative curricular evaluation with a discussion of the novel challenges that I encountered with the pedagogical intervention and plans for improving teamwork pedagogy in the future.

### **Study 1: Deficit Study: Challenges with the Original *Team Communication* Workshop**

The original *Team Communication* workshop was created by the former director of our university's writing center (former Global Communication Center) (WC), Dr. Joanna Wolfe. She and I ran the original iteration of the workshop through our WC. The original workshop draws on research-based best practices in the field, teaching students five key strategies for

effective teamwork: task schedules, layered workflow, team charters, meeting minutes and agendas, and project manager. Task schedules are timelines that teams create early on in a project and in some cases update as the project progresses (Wolfe, 2009). Well-planned task schedules incorporate layered workflows where multiple team members contribute to different parts of a project based on their expertise and goals. Well-planned task schedules also prioritize earlier deadlines and strategic review points so a team can offer feedback sooner, can have time to revise and can discuss important milestones or obstacles that they have encountered (Wolfe, 2009).

We can see these planning approaches reflected in successful teams in the workplace. In my previous chapter, I interviewed practitioners who reflected on their most recent experiences working on diverse teams and found that all of the respondents relied on plans to guide them throughout their projects<sup>1</sup> (Poznahovska Feuer, 2020). That same study examined how teams managed language proficiency differences between team members and found that the most prominent strategy was early planning—planning of project tasks, roles and deadlines, and early discussions of genre and project expectations (Poznahovska Feuer, 2020). While the research in my previous chapter only examines a small sample of practitioners (n=20), it suggests the importance of planning when managing and negotiating differences on a team. Other studies on conflict management and planning find that groups who establish clear criteria and expectations for decision-making perform better than groups who do not have clear expectations (Behfar et al., 2008). When groups are on the same page about project expectations and team norms, they

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<sup>1</sup> The practitioners came from a wide range of industries and disciplines. The study also examined the perspective of only one team member from a team since it was dependent on the self-selection of participants for the study. The other team members were not interviewed as part of the study in Chapter 2; therefore, it is a one-sided view of the team dynamic.

are more likely to experience team cohesion and higher performance (Evans & Dion, 2012), which can reduce the potential for unproductive emotional and relational conflict (Jehn & Mannix, 2001).

While the original WC workshop focused on best practices in effective team communication, students still seemed to struggle in their teams. Despite the workshop being requested in courses across the university and instructors actively seeking out team communication help for their students, students were not as apt to use the strategies the workshop had instructed. Preliminary conversations with faculty and observations of students suggested that student buy-in was lacking. Students did not seem to be sufficiently convinced of the importance of the strategies to use them in their own teams.

In order to investigate why this was the case, I seek to reevaluate the existing pedagogy of the original *Team Communication* workshop and ask the following research questions in Study 1:

1. How are students interacting with the team strategies in their current pedagogical format?  
How useful do students perceive the strategies to be?
2. What challenges are students facing when using the team strategies that may be impeding their uptake during team projects?

In the following sections, I describe the procedures of the original *Team Communication* workshop, design of the study, and preliminary results.

### ***Workshop Procedures***

The goal of the *Team Communication* workshop is to introduce students to best practices in team communication and encourage them to *plan* their collaborations. The workshop takes place in students' classrooms and runs for 80 minutes. During the workshop, the presenter distributes a packet with the following: a) sample team documents for students to follow, including a task schedule, a team charter and meeting minutes, and b) key points for students to remember about each strategy (see APPENDIX A: HANDOUT PROVIDED TO STUDENTS AS PART OF THE ORIGINAL WORKSHOP).

The workshop elicits student buy-in into the strategies by first showing video scenarios with teams encountering common team problems (see APPENDIX B: TRANSCRIPTS OF TEAM VIDEO SCENARIOS FROM THE ORIGINAL WORKSHOP). The scenarios are based on Wolfe's (2005) research on problematic student teams. In the first video, students make poor use of their in-person meeting by working on micro-level details, like where to place commas in the text and how best to phrase specific sentences. The team also experiences a dominating team member who pushes his perspective onto the other members and dismisses any other suggestions. In the second video scenario (see APPENDIX B: TRANSCRIPTS OF TEAM VIDEO SCENARIOS FROM THE ORIGINAL WORKSHOP), the team poorly planned the submission of important team deliverables. When one of the members offered feedback on the project survey, another team member explained that he already submitted it. The team poorly planned their in-person meeting, came to the meeting with different expectations for the agenda and purpose of the meeting, and did not elicit participation from all team members (some of whom stayed quiet during the entire team discussion).

After discussing the common team problems identified in the videos, the presenter outlines the five key strategies as solutions: task schedules, layered workflow, team charters,



meeting minutes and agendas, and project manager. Each strategy is narrated as a possible solution to different team pain points and problems. For example, when presenting the task schedule (see Figure 1), the presenter reminds students of the issues the teams in the scenarios encountered and then explains how a task schedule can help prevent those problems. The sample task schedule in Figure 1 breaks down tasks, roles and deadlines, and layers tasks whereby each student incrementally builds on what their peers have already done (Wolfe, 2010). Meanwhile, the layered workflow is visually represented by the different colors (Figure 1); multiple team members have an opportunity to contribute to or comment on different parts of the project. Such an approach avoids the often detrimental “divide and conquer” workflow and instead assures that all team members are actively involved throughout the entire project. All team members have a chance to read, comment and add to the team document.

<i><b>Deadline</b></i>	<i><b>Who</b></i>	<i><b>Task</b></i>
3/02	Everyone	Initial group meeting
3/04	Everyone	Group meeting
3/04	Stephen	Email schedule and notes from group meeting.
3/13	Tim	Complete client interviews; Email interview notes to the group.
3/14	Everyone	Group meeting at 3:00 to discuss interviews.
3/14	Stephen	Email notes from group meeting.
3/21	Charlotte	Email rough draft of requirements document minus intro and conclusion
3/23	Tim	Email comments on requirements document
3/29	Stephen	Email revised draft of requirements with intro and conclusion added.
3/31	Tim	Email draft of cover letter addressed to client.
4/03	Charlotte	Email revised and polished draft of all materials to group for last-minute comments
4/04 AM	Stephen	Email editing suggestions to Charlotte
4/04 PM	Charlotte	Turn in final draft to professor by 3:00 PM

*Figure 1: Excerpt from a Sample Layered Task Schedule in the Original Workshop*

Similarly, the presenter illustrates how a team charter can help prevent problems with expectations on a team. Common team charter categories include team versus personal goals, individual commitment to the project, communication and participation expectations, and strengths and weaknesses each team member brings to the project (see sample charter in Figure 2). In discussing the sample charter, students can begin to identify what they value on a team and can start thinking about the team charter they might create with their own teams.

<p style="text-align: center;"><b>Sample Team Charter</b></p> <p><b>Broad Team Goals:</b></p> <ol style="list-style-type: none"><li>1. Clearly communicate the "bottom line" meaning of our results throughout the report.</li><li>2. Impress the instructor with the amount of effort we have put into collecting and analyzing our data.</li></ol> <p><b>Measurable Team Goals:</b></p> <ol style="list-style-type: none"><li>1. Meet all 6 of the evaluation criteria listed on the assignment sheet.</li><li>2. Meet or beat all deadlines.</li><li>3. Obtain data from at least 15 users.</li><li>4. Follow all 8 guidelines for tables and figures listed in instructors' PowerPoint presentation.</li></ol> <p><b>Personal goals:</b></p> <ol style="list-style-type: none"><li>1. Aaron – improve management and teamwork skills</li><li>2. Bryan – improve writing skills (be less wordy)</li><li>3. Yolan – improve writing skills (improve organization and grammar)</li><li>4. Mandy—improve PowerPoint and presentation skills</li></ol> <p><b>Individual Commitment:</b></p> <ul style="list-style-type: none"><li>• Aaron, Yolan and Mandy are all willing to put in 100% effort.</li><li>• Bryan would like to put in 100% effort but is unsure if his job will allow him to commit that much time. He is willing to accept a slightly lower grade if it turns out he cannot keep up.</li></ul> <p><b>Other concerns:</b></p> <ul style="list-style-type: none"><li>• Yolan is worried that her grammar skills may need a lot of work.</li><li>• Mandy has only done one PowerPoint presentation before but really wants to improve and will work hard to learn.</li><li>• Aaron has two tests and a project due the week of Oct 15</li><li>• Bryan is just worried about his job interfering.</li></ul> <p><b>Communication Etiquette:</b></p> <p>We will use a Facebook group to post updates, etc. Everyone agreed to check the group at least once per day between 5pm and 10pm and at least twice per day when deadlines are approaching. If a group member is not responding to FB, the project manager will text them with a reminder to check.</p>
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*Figure 2: Excerpt from a Sample Team Charter from the Original Workshop*

Overall, the original workshop is structured around common team problems. Each team planning strategy is then offered as a solution to each of the problems discussed. Students are given some guidance on how to use the strategies and provided with models that illustrate

possible team planning deliverables. While hands-on team interaction and practice with the strategies is fairly limited, the expectation is that students will apply the planning strategies on their own after the workshop.

## **Methods**

### ***Courses***

Students from six (four graduate-level and two undergraduate-level) courses participated in Study 1. Five instructors reached out to my university's WC with interest in the *Team Communication* workshop being presented in their classes, with the researcher also teaching the workshop in her own course<sup>2</sup>. Four courses were STEM-related, including software engineering, chemical engineering, civil and environmental engineering, and engineering and technology innovation; two courses were humanities oriented—philosophy and professional and technical communication.

The student teams worked both synchronously in person as well as asynchronously individually. The most common team dynamic was teams that would work asynchronously individually on different parts of the team project and hold occasional synchronous in-person meetings.

### ***Participants***

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<sup>2</sup> Some instructors had reached out to the WC in the past and were familiar with the strategies that we taught, while other instructors were reaching out to the WC for the first time.

A total of 33 students participated in Study 1 on the original workshop (see Table 1). The participants had mixed prior experience with teamwork. Some had prior teamwork experience in an academic setting where they worked on team projects with classmates. Others had both academic experience as well as professional experience working on teams in the workplace. Students also had varied experience with the team planning strategies. Some had heard of the planning strategies before while others were learning the strategies anew.

The study collected data on students' individual perceptions of how well the strategies worked for their teams. Data was not collected on teams as a whole since the focus of the study was to examine individual students' perceptions of the team strategies and the workshop. Furthermore, the study did not evaluate the quality of the team product, nor did it trace the intra team relationships over the course of the semester. Finally, because of the timing of data collection at the end of the semester, it was difficult to gather responses from each team member from every team. Students may have been reluctant to respond to the survey at the end of the semester due to other obligations.

*Table 1: Breakdown of Study 1 Demographics*

<b>Workshop</b>	<b>Semester</b>	<b>Number of classes</b>	<b>Course levels</b>	<b>Number of students who attended the workshop</b>	<b>Number of students who participated in the survey</b>

Original	Spring 2019	6	4 Grad 2 Undergrad	130	(No data collected on specific student demographics)	33 total
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### *Design of the Study*

Data was collected through a formal quasi-experimental study design. I conducted a 2-part survey (see APPENDIX C: SURVEY FROM SPRING 2019 ORIGINAL WORKSHOP) at the end of spring 2019 after students had already participated in the workshop and were either finished with their projects with their teams or coming close to the end. The goal of the survey was to gauge the following: 1) what workshop strategies students ended up using throughout their team projects and 2) the extent to which they felt the planning strategies made an impact on their project and team cohesion. Part 1 of the survey was distributed by instructors; however, only the researcher had access to the answers. Part 1 took approximately 5-10 minutes to complete and included a mix of 20 items, including 5-response options, short answer, drop-down, and checkbox questions. The survey asked questions in the categories of team planning, usefulness of the task schedule and team charter during their team projects, and overall effectiveness of the workshop. The survey focused primarily on the task schedule and team charter strategies for the following reasons: (a) the presenters spent the most amount of time talking about those strategies and (b) they were often the first plans that teams would create prior to starting work on the project itself. Data on those two planning docs could provide insight into student buy-in and the workshop pedagogy in general. After completing the questionnaire in Part 1, students were then contacted by the researcher to participate in Part 2 and share their task schedules and team charters.

When collecting data (surveys and team documents), I came across a few challenges. Our university's IRB required all students on a team to agree to participate in the study and to share their team's documents. Furthermore, I distributed the survey at the end of the semester—a time during which students are less motivated to respond and are juggling many responsibilities, such as finals and projects. Because of the timeline of survey distribution and a possible lack of student motivation, I was only able to collect a small sample of team documents in Part 2 (three task schedules and two team charters after the original workshop). Nevertheless, the data offers insight into the way some student teams were using the planning strategies after the workshop.

## **Results**

### ***Students' Responses Suggest a Low Buy-In into Planning Strategies***

Only 34% of students responding to the survey in Part 1 reported that they found the task schedule to be useful for their team's planning and only 38% of students reported that they found the team charter to be useful for team planning. Students reported that it took too much time for them to deliberate and then construct planning documents in advance. In other cases, students created the planning documents as part of the workshop, but never ended up using them throughout the project:

“Overall, the task schedule simply wasn't followed” (Participant 6)

“The group charter is very useful at the beginning of the project since the roles of all the teammates have been clearly specified. When progressing the project, since more works

and directions have been updated, we somehow followed less on the charter.” (Participant 3)

“Team charter was mostly created because it was required. If I weren't friends with my teammate, it may have been more useful in terms of setting expectations in terms of the work.” (Participant 15)

The comments above suggest that some students may have perceived the planning documents cumbersome to create.

### ***Team Documents Show Students Creating Gantt Charts Instead of Task Schedules as Their Project Plans***

After collecting team documents in Part 2, two out of the two teams that provided team documents created a Gantt chart instead of a task schedule for their project (see Figure 3 for one of the Gantt charts submitted). Gantt charts were not taught as a planning strategy in the *Team Communication* workshop; students most likely had previous experience with them and may have gravitated towards them instead of the task schedules presented in the *Team* workshop. Furthermore, during the workshop, some students expressed interest in using Gantt charts instead of the task schedule to plan out their projects; however, there is no data supporting whether those students ended up using Gantt charts, task schedules or anything at all for their team planning.

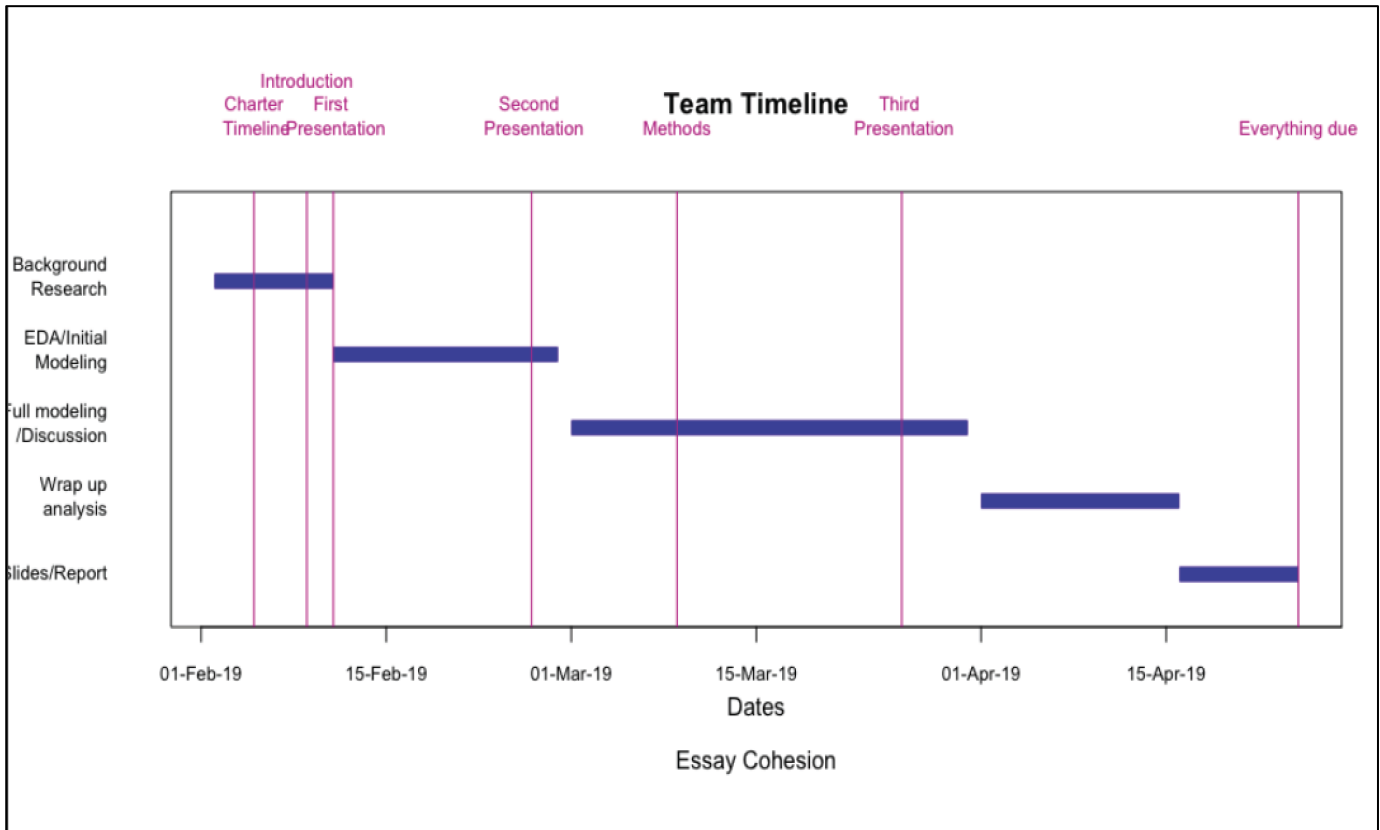


Figure 3: A Gantt chart submitted by a student team after the original version of the workshop

Figure 3 shows a planning document shared by one of the participating teams from Part 2 of the survey. The team organized their project around major deadlines (such as “First Presentation,” “Second Presentation,” etc.) and deliverables that need to be completed by each deadline. While Gantt charts can be potentially useful for illustrating duration of tasks and possible bottlenecks, the chart in Figure 3 does neither. It is not organized around bottlenecks, but by deadlines given by the instructor. And it does not show duration of tasks but marks how much time the team has to complete each deliverable before the next deadline. The Gantt chart the students created does not actually represent the duration of task completion but merely outlines available time.

In addition to poorly outlining time on task, the Gantt chart in Figure 3 does not breakdown the deliverables into their sub-tasks. For example, a “Background Research”



deliverable can consist of several intricate tasks, such as survey distribution, interviews, secondary research, synthesis of research, prototyping, user testing, and more. Because tasks are not outlined, it is difficult to plan out the project and understand how much time should be allocated to each task. These organizational mishaps increase the likelihood that a team would encounter unproductive conflict that could have been avoided by better planning ahead of time.

Finally, the students' Gantt chart in Figure 3 includes no mention of roles, which also does not sufficiently allow team members to plan for the completion of each task. Poorly created planning materials can lead to miscommunication and unproductive conflict, such as multiple team members mistakenly producing different versions of the same deliverable (Wolfe & Powell, 2009). While in workplace settings team members may be more likely to resolve these uncertainties with meetings or frequent interaction with their team members, in academic settings students may have fewer encounters with their peers and many obligations outside of their immediate team project. Outlining a concrete and specific plan becomes more important for managing work that is often done individually and asynchronously without frequent check-ins and in-person interactions.

### ***Anecdotal Data from Conversations with Instructors Suggest Students May Not Be Sufficiently Tracking Progress***

In addition to collecting survey data, I also gathered additional information from anecdotal conversations with instructors about their students' team processes. While this data was not systematically collected, the anecdotal conversations suggested that instructors wanted their students to do a better job of tracking the progress of their project drafts and deliverables.

Instructors wished the task schedule better represented the iterative process of brainstorming, drafting, reviewing, revising, and polishing a text.

## **Discussion**

### ***The Original Workshop Does Not Sufficiently Scaffold the Planning Process for Students***

The data suggests that neither the task schedules that were taught to students nor the Gantt charts that students created sufficiently represented the nuances of team planning and collaborative work. It can be speculated that students may have found the learning curve for the task schedule to be too high for them to use it quickly and efficiently without practice and prior guidance. The original workshop presented the strategy to students, gave them a sample as a guide and then sent them on their way. Workshop presenters functioned under the assumption that the provided information was sufficient for students to be able to understand and replicate the strategy. However, that may have been a false assumption.

Furthermore, because of the nature of the original workshop, neither the presenters nor the instructors required students to create a task schedule for their teams. Instead, both presenters and instructors hoped that students would implement the strategies on their own after attending the workshop. This, however, was also a false assumption. The results of Study 1 echo those of Chris Lam's (2018) in his data-driven study on team communication in the classroom. Specifically, students may have perceived the task schedule as unnecessary “busy work” (p. 422). Additionally, students may have had little to no incentive to learn how to use the task schedule and therefore may have been more likely to gravitate towards already known and

practiced habits, such as Gantt charts, even if those habits were less productive for their team process.

Many of the issues with Gantt charts have been explored in both management research as well as technical and professional communication research. Research has challenged the misleading certainty and simplicity in Gantt charts, specifically when it comes to outlining plans and durations of tasks (Maylor, 2001; Robles, 2018). Robles (2018) in particular challenges the “scientific certainty” with which Gantt charts claim to predict production, arguing that “[t]he Gantt chart simplifies and streamlines the messiness and uncertainty of project production, and it reduces reality to its leanest visualization” (p. 302). The Gantt charts do not necessarily illustrate the “complexity, ambiguity, uncertainty and change” that frequently occur over the course of a project (Geraldi & Lechter, 2012, p. 578). Expectations and underlying reasons for specific tasks are not represented nor is there built-in space for modeling, analysis, and feedback (Maylor, 2001). While students tend to gravitate towards the simplicity of Gantt charts, the documents often do not represent the iterative review, revision, knowledge integration, questioning, and analytical processes that are integral parts of collaboration and project management.

Robles (2018) argues that there is a cultural value ascribed to the Gantt chart because it reduces the complex team process into something more digestible, streamlined, and certain. The certainty represented within Gantt charts has a persuasive power that other planning tools may not necessarily have; moreover, Robles (2018) recognizes the tendencies in today’s society to view visual representations, such as Gantt charts, as somehow more reliable and accurate than they are.

Similarly, many of the arguments that professional and technical communication scholars make against Gantt charts can be applied to the task schedule in the *Team Communication*

workshop. The task schedule in the workshop also insufficiently represented the layered workflow that is important to successful teamwork (Wolfe, 2009). Despite attempting to represent the complex and nuanced process that is teamwork, the task schedule fell short of illustrating the brainstorming, writing and feedback processes that are integral to successful collaborative writing.

Instead of encouraging simplicity and certainty in project management and group work, professional and technical communication teachers should be working towards making the messy and uncertain the norm. We should be encouraging our students to engage with the uncomfortable, messy, and often contentious reality that is teamwork. Perhaps then we can convince students of the need to plan for these uncertainties and to use rhetorical strategies for negotiating complex team interactions.

### ***The Original Workshop Fixated on Problematic Team Situations Without Giving Students Examples of Good and Constructive Team Conflicts***

In the original *Team Communication* workshop, the presenters played videos of unproductive teamwork in order to illustrate poor practices and elicit student buy-in. While the videos dramatized the challenges that teams typically face, the results of the data suggests that there may have been a few issues with how the videos were being used to teach team planning. In particular, the videos may not have presented a realistic picture of the nuances and complexities of collaboration. For example, the scenarios did not narrate individual characters' perspectives on the problematic situation, nor did the scenarios expose the assumptions that may have led the team to the problematic situation in the first place (see video transcripts in

## APPENDIX B: TRANSCRIPTS OF TEAM VIDEO SCENARIOS FROM THE ORIGINAL WORKSHOP).

While it may not be clear that the videos and students' lack of planning had any causal relationship, we can speculate that there may be some relationship between the workshop's representation of student teams and students' own understanding of what a team should look like. Namely, the goal of showing the video scenarios was to show students what they should avoid; however, perhaps it was insufficient to stop there. By not showing scenarios of good team planning, students may not have had models of how to put team planning strategies to use.

### **Limitations of Study 1**

A major limitation of Study 1 was a low response rate to the survey at the end of the semester. Because of the timing of survey distribution as well as the IRB requirements for collecting student data, only 25% of students who attended the workshop responded to the survey.

Nevertheless, the purpose of Study 1's research was qualitative and formative. Study 1 is not estimating the frequencies of problems, but rather collecting data on the different types of problems that do exist. While some problems may have been missed because of the low response rate, there is still sufficient data illustrating a direction for how to improve teamwork pedagogy.

### ***Where To Go from Here?***

Ultimately, the results suggest that the current pedagogical approach to teaching teamwork strategies does not adequately engage students in planning prior to them starting their project work. The workshop in its current format takes for granted the importance of planning and the ease with which students will learn the planning strategies. However, survey data and students' team documents suggest that students do not seem prepared to engage in the type of planning discussions that the workshop intends for them to have—discussions over tasks, roles, complexities of collaborative writing, feedback, and revision. As such, this may be causing students to fall back on previously learned habits and practices since the workshop may not be adequately scaffolding team planning or teaching students how to discuss team planning in a productive manner.

While the current workshop approach is grounded in research on teamwork and best practices in team writing, the pedagogy insufficiently prepares students to plan for their team projects. Similar studies have been conducted by other teamwork scholars, which suggest that there is still much work to be done to convince students of the importance of team planning (Lam, 2018). Study 1 therefore suggests two major takeaways: 1) more work needs to be done on improving the pedagogy for teaching team strategies in the classroom and 2) more work needs to be done on getting student buy-in and on encouraging use of the planning strategies during team projects.

## **Study 2: Formative Curricular Evaluation: Developing a “Flipped” Workshop**

In an attempt to address the challenges that students are facing with team planning, I redesigned the original *Team Communication* workshop and conducted a formative curriculum evaluation of its effectiveness in the classroom. Specifically, I redesigned the workshop from a

traditional model of instruction to a “flipped” modular approach, incorporated models of effective planning, and built-in extrinsic motivators to encourage students to practice the learned strategies.

After redesigning the workshop, I undertook Study 2, a formative curriculum evaluation to test the effectiveness of the flipped workshop within the classroom. Specifically, I ask the following research questions:

1. To what extent did students’ use of team planning documents change between the two workshop versions?
2. To what extent did students’ perception of the usefulness of the team planning documents change between the two workshop versions?
3. To what extent did the quality of students’ planning docs change between the two workshop versions?

In the following sections, I describe the pedagogical theories behind the redesign and outline the specific workshop materials and procedures. I also discuss the study design, report the results, and evaluate the results in relation to the research questions posed above.

### **Pedagogical Theory and Workshop Revision**

In order to address students’ resistance to planning, I revised the original *Team Communication* workshop from a traditional model of classroom instruction into a “flipped” modular approach. In a traditional model of classroom design and instruction, students are introduced to concepts, theories, and ideas by way of an in-class lecture and then are given assignments to practice and apply classroom material at home. In a traditional classroom,

students engage in deeper learning and application outside of the classroom once they've learned the concepts in class. The original *Team* workshop was based on the traditional model whereby students are introduced to the team planning strategies by way of direct instruction and lecture in class. Then, they are expected to apply what they learned with their teams at a later date. In some cases, students would receive feedback from their instructors on their use of the strategies. In other cases, the instructors did not evaluate the strategies and relied on students to figure it out on their own. The results of Study 1 indicated that the current approach was not working for students; students often seemed to struggle to apply the strategies with their teams and in some cases reverted to previously learned habits. Study 1 suggests that there needs to be a different pedagogical approach to teaching team strategies in a way that better prepares students for constructive team planning.

This is where the “flipped” approach comes in. In a flipped classroom, students are first introduced to concepts, ideas, and theories *outside of class* by way of independent work. Then, they have an opportunity to practice and apply what they learned in class. Class time, as a result, is reserved for deep learning, problem solving and critical thinking all while receiving support from an instructor and peers. In a flipped model, students can engage in “productive failure,” making the mistakes that are critical for learning while receiving immediate feedback and suggestions from peers and the instructor (Talbert, 2017, n.p.).

The flipped *Team Communication* workshop consists of two modules: an at-home module where students do independent work and an in-class module where students work with their teammates to apply the learned concepts. During the at-home module, students are introduced to core team strategies, such as the task schedule, layered workflow, and strategic review points. The at-home module includes multimodal lessons about teamwork, such as a set



of written scenarios, interactive questions, and a video that teaches students how to construct a task schedule. At the end of the at-home module, students are asked to create a task schedule of their own for their team project; by creating their own task schedules, students begin practicing the planning strategies they learned in the module.

Then, during the in-class module, students come together with their team members to compare their individually constructed task schedules and deliberate the different ideas and directions for the project. Instead of merely telling students that they need to engage in deliberation and problem-solving with their peers, the flipped workshop builds in time in class for students to discuss and decide which plans best suits the team's goals. The end result is a mutually agreed upon task schedule that the team can use throughout their project.

In addition to flipping the workshop, I also expanded the role that scenarios play throughout the workshop. Similarly to the original workshop, the flipped workshop uses scenarios to try to convince students of the significance of the team planning strategies. Like the original workshop, the flipped workshop seeks student buy-in by illustrating what could go wrong if teams do not plan (APPENDIX D: UNPRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP). In addition, the new workshop includes a scenario on effective team communication (APPENDIX E: PRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP). The effective team planning scenario illustrates how planning can shift a team's energy away from managing unproductive conflict to fostering productive conflict around ideas. The characters and behaviors in the effective planning scenario serve as models for what students should be doing with their own teams when collaborating. Research on observation and self-correction suggests that students learn by observing the "targeted behavior" that others exhibit (Rijlaarsdam et al., 2008, p. 59). By way of the effective scenarios, students have an opportunity

to “analyze, compare and evaluate” what others do and then decide which processes to apply in their own work (Rijlaarsdam et al., 2008, p. 59). Furthermore, Giest (2004) suggests that learning through observation can also provide students with some guidance for negotiating processes that are “too subtle, too varied, too contextually determined to be formulated in common rules or instructions” (p. 171). During teamwork, students can frequently encounter situations that require negotiation but that can be very difficult to tackle without guidance. Learning through observation can potentially empower students with some strategies that they can then use in their own team interactions.

My previous research on student teams became fodder for the scenarios used in the flipped workshop. The poor planning scenario is based on a pilot study of real-life students’ experiences at Carnegie Mellon University (Poznahovska, 2019) as well as research on common problems on student teams (Harrison & Peacock, 2010; Chris Lam, 2016; Poznahovska Feuer, 2020; Wolfe & Alexander, 2005). One of the conversations that students found to be sensitive and tended to avoid was about language proficiency differences and errors in writing. Students did not want to assume that their peers’ language proficiency was problematic (Poznahovska Feuer, 2020) nor did they want to be left out of the group work because of their lower proficiency. Carnegie Mellon University has a large international student population and students frequently work with peers who come from different language backgrounds. Because encounters with peers of a different English proficiency was a situation that many students in the workshop were familiar with, I integrated it into the scenarios. Specifically, I illustrated how avoiding critical conversations about feedback, revision and genre can exacerbate problems later on in a project and how having these conversations early can help to build a plan of action and mutual trust among the team members.

Meanwhile, I drew on my research on practitioners' teamwork experiences for the types of targeted behaviors that I wanted students to observe and emulate. To briefly recap: Practitioners discussed the need for built-in feedback and revision time, attribution of roles and tasks based on team members' strengths and weaknesses, and discussion of genre expectations and familiarity before starting the project. Furthermore, practitioners also engaged in positive planning behaviors, such as discussing tasks, roles, and deadlines, deciding on norms for feedback and revision, and documenting their decisions so that team members and those outside of the team could reference important information. These behaviors were integrated into the scenarios alongside the best practices discussed in teamwork research.

While a flipped classroom approach and learning through observation can be very beneficial when teaching team strategies, research also suggests that students need to be motivated to reproduce the taught behavior (Rijlaarsdam et al., 2008). If there is no expectation to replicate the observed behavior (either by fellow team members or by an instructor), students can be less motivated to implement what they learned. Research in psychology discusses the difference between intrinsic and extrinsic motivation, noting that we cannot expect students to be intrinsically motivated to apply what they learn in the classroom (Johnson et al., 2016). I encountered this challenge with motivation with the original workshop where some students were less likely to practice and incorporate newly learned team strategies and instead fell back on already known and familiar habits. In order to account for this lack of intrinsic motivation, Raedts et al. (2007) explain that students need to be given an expectation that the imitation of the behavior will result in either a "reward or reinforcement," such as through a grade or peer recognition (p. 220). The flipped workshop motivates students by requiring that they submit an individually drafted task schedule at the end of the at-home component and also create a task

schedule together with their team during the in-class module. Using extrinsic motivation can potentially begin to address students' reluctance to use the planning strategies with their peers.

### **Workshop Procedures and Materials**

The flipped workshop is split up into two modules: an at-home module where students do independent work and an in-class module where students complete activities with their peers.

#### ***At-Home Module***

**Present an Unproductive Planning Scenario and a Productive Planning Scenario.** In an attempt to get students' attention about the need to plan early, I used two scenarios of a student team: an unproductive planning scenario in which the team rushed to start the project without planning (see excerpt in Figure 4 and APPENDIX D: UNPRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP for complete scenario) and a productive planning scenario where the team planned ahead of time (see excerpt in Figure 5 and APPENDIX E: PRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP for complete scenario). The use of scenarios is not new to team pedagogy; the original version of the workshop in Study 1 illustrated common student team problems using video scenarios. However, the original workshop focused primarily on the problematic team situations. The revised flipped workshop, meanwhile, offers students a scenario with common team problems as well as an effective planning scenario where the team uses planning strategies to foster productive conflict on their team.

The unproductive scenario (see Figure 4) illustrates how the typical approaches that students take during teamwork can lead to problems throughout their collaboration. Specifically, the characters in the scenario:

1. Do not discuss or agree upon the genre expectations, relevant content, or roles before they started writing their individual parts.
2. Do not look at either the prompt or the sample text to figure out the necessary components of their project. When the project is pieced together closer toward the deadline, the group members realize that the different parts do not “fit.”
3. Review the project components too close to the deadline. As a result, the group does not have time to engage in important constructive conflict around feedback and revisions and experiences stressful pressure to meet the requirements too close to the end.

The challenges in the unproductive scenario are often very familiar to students at Carnegie Mellon University where there is a large international student body population. Like the original *Team Communication* workshop, the flipped workshop aims to get students’ attention about the need to plan by placing them into these familiar situations where unresolved assumptions—like those around language proficiency—can create significant challenges and derail productive conflict.

Rajit, Lauren and Michael were really excited to get started on a project for their engineering class. The following is their conversation during their first meeting:

**Michael:** "Okay, so we need to submit a proposal for this project in two weeks. Why don't I work on the intro? Rajit, you write the solution. And Lauren, you can do the conclusion. How does that sound?"

**Lauren:** "Sounds good to me."

**Rajit [a little anxious]:** "That works. But, I might need some feedback on my draft. Sometimes, I can make grammatical mistakes."

**Lauren:** "That's fine. Just email it to us before the deadline and we'll edit it."

A day before the proposal deadline, Rajit sends an email to his teammates asking them to review his part. The following day, the group gets together to finalize the proposal. The following conversation ensues:

**Lauren:** "Hey Rajit, can you look over the final proposal, make sure everything's good? We only have an hour before we need to email it to the professor."

**Rajit:** "Sure!...[reads over his part of the document]...Hey guys, so I'm looking at the proposal here and, umm...did you completely rewrite my section?"

**Lauren:** "Yeah...you said you wanted us to edit it."

*Figure 4: Excerpt from the unproductive planning scenario in the flipped workshop*

The effective planning scenario (see Figure 5) illustrates an alternative reality where students are engaging in planning and discussing assumptions upfront. Specifically, the characters in the effective planning scenario:

1. Discuss expectations for important parts of the project early on and in doing so have a clear direction for project deliverables, feedback, and revisions.
2. Are able to use precious meeting time throughout the project to discuss ideas and solutions rather than managing unexpected unproductive conflict.
3. Save time and avoid stress by planning at the beginning of their project.

The effective planning scenario describes the characters negotiating language differences and framing their conversations around group norms and expectations, rather than around individual deficiencies. Furthermore, the scenario illustrates how the team does not approach problems

with punitive responses; instead, the goal is to communicate with one another and work together to figure out a plan and shared norms—norms that everyone follows regardless of their strengths or weaknesses.

Rajit, Lauren and Michael are working together in their engineering class. Before beginning their individual work, the team members met to discuss what the project should look like and how the team would handle feedback and revision. The following was their conversation:

**Michael:** “Okay, so we need to submit a proposal for this project in two weeks. Why don’t I work on the intro? Rajit, you write the solution. And Lauren, you can do the conclusion. How does that sound?”

**Rajit:** “That works! When should I email you my final draft?”

**Lauren:** “Hold on. Let’s look at the sample that the professor uploaded to make sure we’ve got everything.”

**[All look at the sample together.]**

**Rajit:** “Good call, Lauren. It looks like we will need to submit preliminary research with the proposal.”

**Michael:** “Yeah, this is a little more complicated than we thought. We’ll need to do a lot of data collection and user testing before drafting the solution.”

**Rajit:** “Why don’t I collect some of the preliminary research? Michael and Lauren, can you do the user testing?”

**Michael and Lauren:** “Yeah, that sounds good.”

**Lauren to Michael:** “We’ll probably need to talk about how we’re splitting everything up for the user testing.”

*Figure 5: Excerpt from the effective planning scenario in the flipped workshop*

**Give Students Time to Reflect on the Scenarios.** After reading each of the scenarios, students in the workshop are asked to reflect on what they learned about the fictional team. The questions prompt students to identify the different approaches the fictional team took in each scenario and then evaluate the effectiveness of those approaches. For instance, the module asks, “What emotions do you think Rajit is feeling and why?”, “List three factors (e.g., team shortcomings or failures) that are contributing to this unproductive conflict,” “What did the team in Scenario #2 do to enable productive conflict?” and “What steps did they [the characters] take that helped them avoid the negative conflict in Scenario #1?” Students are also asked to think

critically about how the different approaches impacted the team dynamic between the two scenarios. By asking students to critically analyze and evaluate the behaviors and approaches in the scenarios, we motivate students to move beyond “blind imitation” and instead to make informed decisions about how different behaviors may impact their team process (Bandura, 1997).

The scenarios provide a model by which students can see how the strategies are enacted within a student team and can have an idea of the course of action they might take with their own teams. Students in the workshop also have a chance to engage with the scenarios on their own time and learn the strategies on their own terms, something the original workshop videos did not allow due to the time constraints of presenting in-class. Finally, introducing the strategies to students ahead of time potentially minimizes the learning curve; by the time students come together with their team members during class, they will have learned some of the best practices, seen them put into action via the scenarios, and practiced them on their own by creating their own plans within a task schedule. Once students come together with their team members, the hope is that they are better prepared to have productive planning conversations with their peers that do not hinge on students having to both learn and apply the strategies simultaneously.

**Revise the Task Schedule and How It Is Taught.** The flipped workshop addresses the gaps in the original task schedule (see Figure 1) by giving students more time to interact with and learn about the strategy on their own time. Specifically, the revised task schedule (see Figure 6) emphasizes the following key planning skills:

1. A visual representation of a layered workflow. Colorful project chunks are visually spread out across the different team members. Students can see how a draft goes through



multiple rounds of review and revision and how multiple team members contribute to its production.

2. Meetings placed strategically before deadlines and before starting the next phase of a project. Meeting agendas and goals are explicitly laid out in the revised task schedule to teach students how to plan for focused meetings.
3. A built-in quality assessment (QA) or version control tracker. The revised task schedule marks the level of completion that a draft is in and tracks the progress in a QA column. The task schedule provides a framework for the iterative processes of brainstorming, modeling, writing, and revising.
4. Feedback is provided early and often. The revised task schedule includes multiple rounds of feedback and different types of feedback depending on the stage a draft is in.

TASK SCHEDULE FOR PROJECT 1: PROPOSAL									
Meeting & Agenda	Date	Time (GMT)	Michael	Lauren	Rajit	Task QA	Complexity (1-5)	Time Estimate (Hrs)	Time Actual (Hrs)
INPUT: (1) Read prompt and sample proposal. OUTPUT: (1) Prioritize and agree on deliverables & tasks. (2) Draft final version of task schedule; assign roles. (3) Develop team charter.	Wed, Aug 28	12:00					4	1.50	
	Thu, Aug 29	12:00		Work with Rajit on background research. Send report to group.	Work with Lauren on background research. Send report to group.	P-START	2	7.00	
	Fri, Aug 30	12:00	Draft problem section based on Lauren & Rajit's research. (STONE)			P-STONE	3	6.00	
	Sat, Aug 31	12:00		Review problem draft. Offer feedback.		P-REVIEW	1	2.00	
	Sat, Aug 31	22:00	Revise problem draft based on Lauren's feedback. (BRONZE)			P-BRONZE	2		
	Sun, Sep 1	12:00			Review problem draft. Offer feedback.	P-REVIEW	1	2.00	
	Sun, Sep 1	22:00	Revise problem draft based on Rajit's feedback. (SILVER)			P-SILVER	2	4.00	
	Mon, Sep 2	12:00		Write up intro for proposal. Submit to group for review. (STONE)		I-STONE	2	3.00	
	Tue, Sep 3	12:00	1) Send anonymous feedback to project manager; address issues/concerns during meeting. 2) Offer feedback on Intro.	1) Send anonymous feedback to project manager; address issues/concerns during meeting.	1) Send anonymous feedback to project manager; address issues/concerns during meeting. 2) Offer feedback on Intro.	I-REVIEW	1	2.00	
	Tue, Sep 3	22:00		Revise intro based on feedback. Submit to group for 2nd round of review. (BRONZE)		I-BRONZE	2	2.00	
INPUT: (1) Bring feedback on problem section & intro. (2) Bring preliminary ideas for user testing. (3) Fill out anonymous	Wed, Sep 4	12:00				P-REVIEW I-REVIEW U-PLAN	4	2.00	
	Wed, Sep 4	22:00		Make changes to intro draft based on group feedback. (SILVER)		I-SILVER	2	3.00	
	Thu, Sep 5	12:00	Finalize problem draft. (GOLD)			P-GOLD	3	3.00	
	Fri, Sep 6	12:00	Start user testing. Report any issues to rest of the group.	Start user testing. Report any issues to rest of the group.		U-START	4	12.00	
	Sat, Sep 7	12:00			Draft solution processes. (STONE)	S-STONE	4	6.00	
	Sun, Sep 8	12:00	Review solution draft. Post feedback into Drive.			S-REVIEW	1	2.00	

Figure 6: Sample Task Schedule from the Flipped Workshop

In order to better scaffold the planning process for students, the at-home module teaches students about creating a task schedule through a series of mini lessons. The first “mini lesson” (see APPENDIX F: GENRE MINI LESSON FROM FLIPPED WORKSHOP) explains how exactly the task schedule addresses common team pitfalls and the steps students can take to create a task schedule. Students are briefly taught how to conduct a genre analysis of their assignment prompt and of any sample texts provided by their instructor. The next “mini lesson” instructs students on how to manage their time. Students are taught to schedule strategic deadlines and meetings, specifically by paying attention to time allocated for review, discussion,

and revision. Finally, the lessons conclude with a video that provides a step-by-step process for creating one's own task schedule.

The focus on review points and strategic meetings emphasizes that planning is a process that doesn't stop after creating the initial task schedule. Plans will continue to evolve and develop as students learn more information about their peers and about the project. Allotting time in the task schedule to accommodate those changes can greatly reduce tension and stress for the team, making the collaborative process more enjoyable overall.

**Give Students an Opportunity to Apply What They Learned by Drafting a Task Schedule for Their Own Team Projects.** Instead of asking students to come up with ideas on the spot in front of their peers and potentially falling into groupthink, the flipped workshop asks students to prepare a plan in advance to then share with their group. In the last part of the at-home module, students are asked to apply what they learned about planning strategies and task schedules to their own team projects. Students are instructed to draft a task schedule for their group projects and to follow the best practices outlined in the “alternative universe” scenario, the mini lessons, and the video. Students are instructed to bring this task schedule to class during the in-class workshop and be ready to share their ideas with their team.

Preparing a document ahead of time accommodates different types of group participators and allows each student to share an already prepared perspective through their individual task schedules. When students come together with their peers during the face-to-face portion, they share their ideas and then deliberate the best approach for the project. In sharing different task schedules, students can more directly see discrepancies in expectations and different understandings of the project goals. By learning about their peers' divergent ideas, students can

more readily see the importance of having these discussions ahead of time and plan for a mutually agreed upon team process.

### ***In-Class Module***

**Give Students Time in Class to Share Task Schedule Drafts and Create a Mutually-Agreed-Upon Schedule with Their Teams.** The beginning of the in-class module is an overview of the best practices around task schedules and team planning. Then, students engage in a more interactive activity with their peers, sharing their individual task schedule ideas and discussing the best plan for their project. Much of the burden of coming up with ideas is alleviated because students have had time to unpack the project and prepare a preliminary plan in advance. During the in-class discussions, students are exposed to each peer's understanding of and approach to the project. They get to see the different ways that their peers are conceptualizing the task at hand and learn what each peer brings to the table. Throughout this sharing, students learn about their peers' assumptions in regard to the project—be it the genre, when feedback should occur, or what the different components of the project should be. Finally, students have an opportunity to come up with an agreed upon direction for the project and draft a task schedule together as a team.

**Teach Students About Team Charters.** Similar to the original workshop, the flipped workshop also introduces students to team charters. Team charters, or team contracts, ask teams to explicitly outline individual goals and expertise, team norms and expectations for the project. The presenters provide students with a sample team charter (see Figure 7 and APPENDIX G: SAMPLE TEAM CHARTER FROM THE FLIPPED WORKSHOP) to examine and evaluate. The researcher asks students to reflect on what they like about the sample team charter and

things they would change about it for their own teams. The goal is to encourage students to identify their priorities for the project and think about what they value during teamwork.

<b>INDIVIDUAL GOALS AND STRENGTHS</b>				
<b>Name</b>	<b>Strengths</b>	<b>Styles</b>	<b>Goals for Project</b>	<b>Potential obstacles</b>
Aarav	Coding, Organizational skills, Leadership	Deadline oriented, socially sensitive, confronts conflict	Improve in CAD; Have a smooth group process	n/a
Ken	Presentations, Physics, Listening to others	People oriented (get along), hates conflict	Do minimum work to get a B on the project	Will be gone 10/15-10/19
Yolan	CAD, statistics, coding	Shy, internal processor, get it right	Improve presentation skills if possible	Weak at writing/grammar

**TEAM NORMS**  
 This team values each other's time and is dedicated to having high quality work with minimal stress or unproductive conflict. We agree to respect each other by showing up to meetings on time and completing work on schedule. We further agree to listen to each other respectfully and try to learn from one another.

**COMMUNICATION NORMS**

- We will create a Messenger group for all team communication
- We agree to respond to messages within 12 hours of when they were sent. If 12 hours is not enough

*Figure 7: Excerpt of a Sample Team Charter from the Flipped Workshop*

**Give Students an Opportunity to Create a Team Charter with Their Teams.** After the class discusses the sample team charter, the last thing that students do is create a team charter with their teams. Students discuss team goals, individual goals, strengths, and weaknesses that individual team members bring to the project, potential obstacles and scheduling conflicts, communication norms, and procedures for managing unproductive conflicts should they come up later on.

Students are provided with a team charter template that includes guiding questions (see Figure 8 and APPENDIX H: TEMPLATE OF TEAM CHARTER FROM FLIPPED

WORKSHOP) about team values and expectations. Students are given time during the in-class module to deliberate the different questions and begin drafting the team charter.

Team Charter Template				
Research has shown that new project teams can prevent problems and work better together by discussing some key issues and expectations up front. To maximize benefits, take notes about conclusions your team reaches in each area and “sign off” to indicate your shared understanding about how the team will operate. Note, this charter be should be used, revisited and revised throughout the collaboration process.				
As a team, complete this template by discussing the instructions/questions in red text and inserting your own content. See the Sample Team Charter below for examples of content to include. After you have completed each section, delete any remaining red text				
<b>INDIVIDUAL GOALS AND STRENGTHS</b>				
Complete this section for each team member. It will serve as a quick reminder of what each person brings to the project and their goals.				
Name	Strengths	Styles	Goals for Project	Potential obstacles
<b>TEAM NORMS</b>				
Discuss each member’s values and expectations for how the team will work together and how members’ interactions will demonstrate these.				
<b>COMMUNICATION NORMS</b>				
<ul style="list-style-type: none"><li>How will we communicate outside of meetings? (ex: Slack, email, Messenger, other)</li><li>What are the expectations for responding? How long should others expect to wait to hear back from you?</li><li>Where will we keep shared team documents? (ex: Box, Google Drive, Slack, other)</li></ul>				

Figure 8: Excerpt of a Team Charter Template from the Original Workshop

The in-class module lasts approximately 1 hour and 20 minutes. Students do not necessarily have enough time in-class to create a completed task schedule and team charter. However, the in-class module gives students time to discuss the different planning approaches

and begin drafting the documents. Furthermore, both the instructor and the presenter are available during class time to answer questions and provide guidance to students on how to best plan their projects and collaborations. In some cases, instructors required students to complete the task schedule and team charter and submit them as course assignments. In other cases, the instructors left it up to the teams to complete the documents on their own time without requiring submission.

## **Methods**

### ***Courses***

For the flipped workshops, instructors approached the writing center with interest to present the team communication strategies in their courses. The courses largely consisted of STEM courses with a mix of undergraduate and graduate students. Courses included engineering, robotics, design and human computer interaction, statistics, information systems, philosophy, and professional and technical writing.

The student teams worked both synchronously in person as well as asynchronously individually. The most common team dynamic was teams that would work asynchronously individually on parts of the team project and hold occasional synchronous in-person meetings.

### ***Participants***

A total of 44 students participated in the flipped workshop (see Table 2). Similar to students in Study 1, the participants in Study 2 had mixed prior experience with teamwork. Some had experience in both an academic setting where they worked on team projects with classmates. Others had both academic experience as well as professional experience working on

teams in the workplace. Students also had varied experience with the team planning strategies. Some had heard of the planning strategies before while others were learning the strategies anew.

*Table 2: Breakdown of Flipped Workshop Demographics*

Workshop	Semester	Number of classes	Course levels	Number of students who attended the workshop	Number of students who participated in the survey	
Flipped	Fall 2019	11	6 Grad 5 Undergrad	259	14 Grad, 29 Undergrad, 1 Unknown	44 total

### ***Design of Study 2***

Data was collected through a formal quasi-experimental study design. I conducted a 2-part survey (see APPENDIX I: SURVEY FROM THE FLIPPED WORKSHOP) at the end of fall 2019 after students had already participated in the flipped workshop and made progress on their projects with their teams. The goal of the survey was to gauge the following: 1) what workshop strategies students ended up using throughout their team projects and 2) the extent to which they felt the planning strategies made an impact on their project and team cohesion. Part 1 of the survey was distributed by instructors; however, only the researcher had access to the answers. The first part took approximately 5-10 minutes to complete and included a mix of 22 items, including 5-response options, short answer, drop-down, and checkbox questions. The



survey asked questions in the categories of team planning, usefulness of the task schedule and team charter during their team projects, and overall effectiveness of the workshop. After completing the first part of the two-part survey, students were contacted by the researcher to participate in the second part and share their task schedules and team charters.

Similar to Study 1, I came across a few challenges when collecting data. Our university's IRB required all students on a team to agree to participate in the study and to all agree to share their team documents. Furthermore, I distributed the survey at the end of the semester—a time during which students are less motivated to respond and are juggling many responsibilities, such as finals and projects. Because of the timeline of survey distribution and a possible lack of student motivation, I was only able to collect a small sample of team documents (6 task schedules and 6 team charters after the flipped workshop). Nevertheless, the data serves as preliminary evidence of how some students were using the planning strategies after the flipped workshop.

## **Results**

### ***Flipped Workshop May Have Increased Student Uptake of Planning Documents***

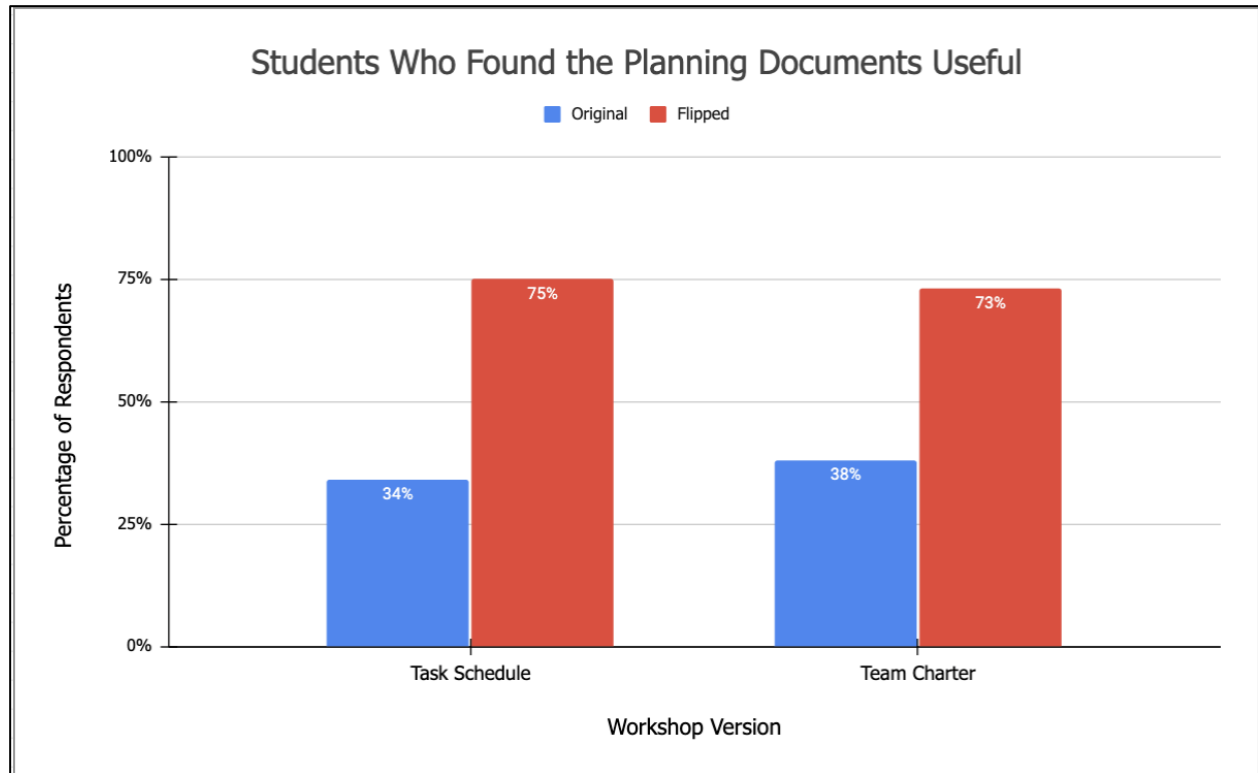
Survey results suggest an increased use of planning documents among students after attending the flipped workshop. Students' survey responses show an increase in the use of task schedules from 36% of students (12 out of 33) after the original workshop<sup>3</sup> to 75% of students (33 out of 44) after the flipped workshop<sup>4</sup>. Meanwhile, reports of using team charters also

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<sup>3</sup> Students were asked the following survey question after the original workshop: "What did you use from the Team Communication workshop in your own collaboration? (Or, if you weren't present for the workshop, select what you and your team used in your collaboration.) (check all that apply)"

<sup>4</sup> Students were asked the following survey question after the revised workshop: "What team strategies did you use with your team throughout your project? (Select all that apply)"

increased from 39% of students (13 out of 33) after the original workshop<sup>5</sup> to 66% of students (29 out of 44) after the flipped workshop<sup>6</sup>. See Figure 9 below for more information.



*Figure 9: Change in students' perception of the utility of the planning documents from the original workshop to the flipped workshop*

### ***Students Reported That the Team Documents Were Helpful for Their Collaborations***

30% of students in the flipped workshop survey commented that they used the task schedule to create a plan for their project and to track deadlines and progress<sup>7</sup>:

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<sup>5</sup> See footnote above.

<sup>6</sup> See footnote above.

<sup>7</sup> The survey question asked students "What team strategies did you use with your team throughout your project? (Select all that apply)" and included a drop-down menu of the different strategies that were

*The task schedule was very good for helping identify deadlines and planning work accordingly. (Participant 14)*

*...Allowed us to delegate tasks and plan ahead, made the process of executing tasks easier... (Participant 34)*

*Useful for planning out tasks and making sure everything will be completed on time. (Participant 21)*

*Gave us a detailed schedule to follow so we stayed on track and were able to complete things on time. (Participant 8)*

Students also reported that the task schedule helped them unpack expectations for their assignment and make sense of difficult-to-understand projects:

*Often the assignments were vague so it was difficult to make a schedule, but the scheduling we did helped organize who did what and when thing [sic] needed to be finished. (Participant 25)*

Students from the flipped workshop found the task schedule useful for planning and tracking their progress.

Meanwhile, 20% of students reported that the team charter helped their team lay out expectations and improve accountability throughout the project:

*It was very useful for holding everyone accountable to their work and standards of quality work. (Participant 43)*

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covered in the workshop. Students were asked to select all that they used. The results are a percentage of total students in who

*[I]t's great to get an understanding of each team member's expectations and needs, it sets the tone for the project and the writing process for it helps you get to know your team members. (Participant 27)*

*"...Helped us establish a baseline understanding of what we all wanted out of the project, provided a good baseline to start working together..." (Participant 34)*

Students' comments suggest that the team charters may have been helpful in planning out strategies for resolving unproductive conflict. Students explained that they were able to discuss rules and protocols for addressing possible challenges, such as slacking or poor-quality work. They used team charters to plan solutions for how they might address those issues should they come up.

### ***Students' Task Schedules Improved in Quality and Level of Detail***

After the flipped workshop, six teams submitted task schedules. Because the sample is so small, it is not generalizable; however, the submitted task schedules show students taking a different approach to planning timelines than what was previously seen with the original workshop. Specifically, Figure 10 and Figure 11 show task schedules created by student teams that included an extensive level of detail, particularly as pertains to the specific tasks, deliverables, and expectations for the project. Students' roles and responsibilities were clearly outlined, as was the layered workflow that allowed for feedback and revision of individual

students' work. Meetings were also strategically scheduled, often after review points to allow students to discuss and plan for revision.

Meeting & Agenda	Date	Time (EDT)				Task QA	Complexity (1-5)	Time Estimate (Hrs)	Time Actual (Hrs)
INPUT: (1) Read assignment prompt and sample conceptual design reports (if available). OUTPUT: (1) Prioritize tasks and agree on deliverables. (2) Draft final version of task schedule, assign roles.	Tue, Sep 24	19:00					2	2	
	Wed, Sep 25	14:00	Work on initial background research	Work on initial background research	Work on initial background research		2	3	
	Thu, Sep 26	15:00	Work on system description, laying out overall structure of project.				3	2	
	Fri, Sep 27	16:30	Finish system description, overall project structure.	Work on system sketch.	Work on operation concepts, how to lay out operation scenarios.		3	4	
	Sat, Sep 28	14:00		Finish system sketch.	Finish operation concepts.		2	2	
INPUT: (1) Bring system description, system sketch, basic concepts of operation. OUTPUT: (1) Plan for operating scenarios, sequence diagrams, subsystem plans, hardware components, software architecture.	Sun, Sep 29	16:00					4	3	
	Mon, Sep 30	13:30	Work on subsystem plans				4	3	
	Tue, Oct 1	19:00		Work on sequence diagrams	Finish operating scenarios		3	2	
	Wed, Oct 2	14:00	Finish software architecture	Work on subsystem plans with	Work on subsystem plans with		3	2	
	Thu, Oct 3	15:00		Finish subsystem plans			2	1	
INPUT: (1) Bring operating scenarios, subsystem plans, hardware component list, software architecture. OUTPUT: Plan for software deployment, validation of design against requirements, prototyping planning.	Fri, Oct 4	16:30					3	2	
	Sat, Oct 5	14:00	Work on plan for software deployment				1	1	
	Sun, Oct 6	16:00		Begin work on validation of designs			2	2	
	Mon, Oct 7	13:30	Finish Software Deployment plan				1	1	
	Tue, Oct 8	19:00	Work with on Prototype planning	Continue work on design validation	Work with on prototype planning		3	3	
	Wed, Oct 9	14:00	Begin review/feedback of system sketch, operation concepts and scenarios	Finish design validation			3	2	
	Thu, Oct 10	15:00			Finish prototype planning		2	2	
INPUT: (1) Completed initial draft of report, design concept. OUTPUT: (1) Plan for revising draft report, restructuring and changes before deadline.	Fri, Oct 11	16:30					2	2	
	Sat, Oct 12	14:00	Review operation concepts, operating scenarios, subsystem plans, prototype planning.	Review/feedback for software related work	Review's work on design validation, system sketch, sequence diagrams		3	4	
	Sun, Oct 13	16:00	Give feedback to justin on operating scenarios, operating concepts, subsystem plans, prototype planning.	Finish review of software related tasks, give feedback to	Finish review of design validation, system sketch, sequence diagrams, give feedback to		2	2	
	Mon, Oct 14	13:30	Revise based upon feedback	Revise based upon feedback	Revise based upon feedback		3	3	
	Tue, Oct 15	19:00	Final review before submission	Final review before submission	Final review before submission		2	2	
	Wed, Oct 16	14:00	Compile final report, send to instructor and submit on Canvas.				1	1	
DUE DATE:	Thu, Oct 17	15:00	(calculate @end)	(calculate @end)	(calculate @end)				(calculate @end)
Total Time									

Figure 10: Task schedule created by a student team after the Flipped Workshop

TASK SCHEDULE FOR Concept Design assignment									
Meeting & Agenda	Date	Time (GMT)					Task QA	Complexity (1-5)	Time Estimate (Hrs)
INPUT: (1) Read rubric and requirements. OUTPUT: (1) Discuss about first 6 aspects. (2) assign roles.	Sun, Sep 29	10:00					1st half-START	3	3
	Mon, Sep 30	12:00	Write System Description(STONE)	Write Concept of Operation(STONE)			1st half-STONE	1	2
	Tue, Oct 1	22:00			Review System Description. Offer feedback.	Review Concept of Operation. Offer feedback.	1st half-REVIEW	2	2
	Wed, Oct 2	12:00			Write Subsystem Descriptions(BRONZE)	Write Physical Sketch(BRONZE)	1st half-BRONZE	1	2
	Thu, Oct 3	22:00	Review Subsystem Descriptions. Offer feedback.	Review Physical Sketch. Offer feedback.			1st half-REVIEW	2	2
	Fri, Oct 4	12:00	Write Architecture Diagrams(SILVER)	Write Trade Studies(SILVER)			1st half-SILVER	1	2
	Sat, Oct 5	22:00			Review Architecture Diagram. Offer feedback.	Review Trade Studies. Offer feedback.	1st half-REVIEW	2	2
INPUT: (1) Bring feedback on first 6 sections OUTPUT: (1) Discuss about next 5 aspects. (3) assign roles. (4) Integrate the previous 6 aspects	Sun, Oct 6	10:00					1st half-GOLD/2nd half-START	3	3
	Mon, Oct 7	12:00	Write Deployment Plan(STONE)	Write Level of Detail(STONE)			2nd half-STONE	1	2
	Tue, Oct 8	22:00			Review Deployment Plan. Offer feedback.	Review Level of Detail. Offer feedback.	2nd half-REVIEW	2	2
	Wed, Oct 9	12:00			Write Design Relative to Requirements(BRONZE)	Write Engineering Practices(BRONZE)	2nd half-BRONZE	1	2
	Thu, Oct 10	12:00	Review Design Relative to Requirements	Review Engineering Practices. Offer feedback.			2nd half-REVIEW	2	2
	Fri, Oct 11	12:00	Write Reliability/ Organization(BRONZE)				2nd half-SILVER	1	2
	Sat, Oct 12	12:00			Review Reliability/ Organization. Offer feedback.		2nd half-REVIEW	2	2
INPUT: (1) Bring feedback on second 5 sections OUTPUT: (1) Integrate the first draft for final conceptual design	Sun, Oct 13	10:00					2nd half-GOLD/C-STONE	2	3
	Mon, Oct 14	12:00	Review Final Draft	Review Final Draft			C-BRONZE	1	2
	Tue, Oct 15	12:00			Review Final Draft	Review Final Draft	C-SILVER	2	2
INPUT: (1) Read the final draft OUTPUT: (1) Finalize draft	Wed, Oct 16	21:00					C-GOLD	3	3
DUE DATE:	Thu, Oct 17	12:00					Submit to canvas		

Figure 11: Task schedule created by a student team after the Flipped Workshop

### Students Tended Not to Update Planning Documents Throughout Their Projects

While the majority of teams who responded to the flipped workshop survey used task schedules throughout their projects, many teams still treated the task schedules as a static document and did not revise it throughout the project. Students found the task schedule cumbersome to update and perceived the process of updating too time and energy consuming. Despite the increase in planning, students still expressed anxiety over their planning process. Students explained that they struggled to figure everything out at the beginning when they did not necessarily have all of the important information for their projects. Meanwhile, other students found themselves on the opposite end of the spectrum of thinking that they had everything all planned out and therefore did not need to recalibrate later on. One of the

respondents was in my professional and technical writing course and explained that the deadlines were already provided by the instructor at the beginning of the project; therefore, the student felt that they did not need to make any additional plans. However, while the major deadlines were indeed provided, each milestone still required a lot of planning in order to be completed. This was something that the student may have overlooked or not accounted for.

### ***The Flipped Workshop Did Not Improve the Quality of Team Charters***

On one hand, students perceived the team charter to be useful in building accountability and laying out expectations. On the other hand, students also found the team charter difficult to enforce when issues did come up. One student explained:

*Members were held accountable for their work; however, sometimes the messaging was uncomfortable when sent to team members and still interpreted in a negative way despite the Team Charter. (Participant 35)*

Despite some positive responses in the survey about the usefulness of the team charter, the flipped workshop did not significantly improve students' confidence in using the charter. While 73% of students created a team charter after the flipped workshop (up from 38% after the original), students still reported struggling with implementing their charter plans when problems did come up.

Furthermore, there was no significant difference in quality of team charters between the two versions of the workshop. There was little improvement in the level of detail, perspective sharing and calibration of team norms, goals, strengths and weaknesses of team members, and

steps for resolving potential conflicts. This data is still preliminary as only six teams shared their team charters as part of the flipped workshop survey.

### **Discussion and Limitations of The Formative Curricular Evaluation**

The results of Study 2 suggest that there are possible improvements in how students are planning their projects. Despite the participants being a possibly self-selecting group that may have been more eager to participate, the results do suggest a shift in how students are thinking about the role of planning during team projects. While I did not observe students and cannot say for sure what strategies they used and how they used them, student survey responses suggest an eagerness to use the planning strategies to deliberate roles, goals, plans and expectations. Meanwhile, students' planning documents (despite the small sample) are much more nuanced, layered, and expansive, suggesting they might be unpacking projects more than they had been in the past.

### ***Scenarios and Models Can Increase Student Buy-In into Planning Strategies***

Planning is an essential tool on student teams. Not only are planning documents important for scaffolding future constructive conflict, but the planning conversations that happen around those documents are themselves also moments of constructive conflict. The data collected after the flipped workshop suggests that students planned more and found the planning strategies useful for their projects.

Students from the flipped workshop reported that their team's task schedules were useful in tracking different parts of the project and getting everyone on the same page regarding



expectations. These reports suggest the following: 1) that students could be engaging in constructive conflicts over project expectations during the planning stages and 2) students could be more aware of how the planning documents impact the team's processes and cohesion down the road.

Nevertheless, the rise in task schedule use and improvement in quality might be due to the fact that students were given a model to use when constructing their task schedules and that they were required to produce a task schedule. The model served as a guide for the different components that needed to be accounted for in a task schedule: roles, tasks, and deadlines; layered workflow; strategic meetings and review points; and a meticulous breakdown of the project expectations. Requiring students to produce a team charter at the end of the flipped workshop may have provided students with extrinsic motivation to plan. Furthermore, the *scenarios* may have increased student buy-in into the planning phases by modeling how teams function when they have a well-thought-out plan in place. The scenarios provided students with discourse to both use and avoid during the planning stages. This may have also increased student confidence when discussing plans for the project and given students a framework for the types of constructive conflict they should be aspiring towards.

### ***A Flipped Approach Gives Students Time to Interrogate and Discuss Genre Expectations Early On***

Successful planning consists not only of timelines and breakdown of tasks, but also of a discussion of genre expectations and revisions for a project. Genre expectations help establish a clear direction and goal for a project. Students on a team may not all have compatible genre

expectations; when this discrepancy is not identified and discussed early on, it can create issues with quality and deliverables later on in a project.

The flipped workshop emphasizes the importance of genre conversations early on. Specifically, genre analysis is a type of planning exercise that helps students get on the same page about the project expectations. The results suggest that students were aware of the importance of mutually agreeing upon project expectations and could have perceived the task schedule as a place where these expectations could be discussed and outlined. This suggests that teachers can build conversations about genre into task schedules. Rhetorical tools, such as audience analysis, model texts, feedback, and revision, can give students a variety of options for discussing genre expectations and planning out the writing process within their projects.

Furthermore, the modular approach of the flipped workshop gives students time to learn and practice planning strategies before applying them with their team. Both of the scenarios and the sample task schedule model how to have planning conversations on a team. By giving students an opportunity to prepare some preliminary individual plans, the flipped workshop may be doing a better job of scaffolding the planning conversations that should be happening once teams come together in the classroom.

### **Limitations of the Flipped Workshop**

One of the biggest limitations of the formative curriculum evaluation was the collection of survey data and team documents. First, the purpose of the surveys was primarily exploratory and as such there was a lack of consistency in the questions that were asked across the two semesters. In the future, the surveys should be revised to conform to the research-based best

practice guidelines (Dilman, Smyth & Christian, 2014; Babbie, 2021). Additionally, the timing of the data collection made it difficult to gather a larger sample of responses and team documents. Unfortunately, at my university, many of the team projects that are conducted in classes take place at the end of a semester and, as a result, the study needed to accommodate the schedules created by instructors.

Student responses about task schedules suggest that there is still room to improve the task schedule and how we teach the planning document. Students might have a very static view of planning—as something that happens only at the beginning and cannot be changed later on. Such a static view can detrimentally affect how a team adapts to problems, changes, and feedback throughout a project.

For future iterations of the workshop, it will be important to explain to students that task schedules are not static texts but rather fluid documents. Furthermore, it will be important to illustrate how students can use other team documents to keep track of changes. For example, meeting minutes are one way that plans can be updated and adapted to changing circumstances. Team members can update and revise plans during meetings and use minutes as documentation of those changes without having to consistently update the task schedule. The goal is not to overwhelm students with planning tasks but rather show how these strategies work together to maintain team cohesion and keep everyone in sync throughout the project.

More research also needs to be done on team charters to determine whether the flipped workshop affects the quality of the documents and if we need to improve how we are teaching team charters in the classroom. The flipped workshop attempted to address students' resistance to team charters by framing them as documents that scaffold constructive conflict and team norms. However, while students recognized the importance of team charters for establishing

accountability, they still experienced difficulty implementing the problem-solving procedures outlined in their charters. In addition, while the scenarios may have provided students with some discourse for broaching sensitive topics, such as language proficiency, students still reported not feeling comfortable having these conversations. These results suggest that the *Team Communication* workshop needs to use students' feedback as well as the existing research on having difficult conversations on a team (Gadgil et al, 2018; Jehn & Mannix, 2001) to improve how it is teaching team charters and how it is preparing students to negotiate difference on a team.

## **Conclusion**

The formative curriculum evaluation in this chapter suggests that team planning can be potentially improved when teachers scaffold students' planning conversations with a flipped classroom approach and when teachers use scenarios to model productive planning strategies. If teachers better scaffold the team planning process in the classroom, they can potentially increase student buy-in and the use of team planning documents.

The research in this chapter follows Ann Brown's (1992) model for developing innovative pedagogy. Brown (1992) breaks down her model in the following ways: identifying problems and strategies, implementing and conducting a formative evaluation of the strategy, conducting a larger scale evaluation of the strategy and the improvements for students, and research on teaching other instructors how to implement the strategy with good results. Keeping this model in mind, the next stages of this research would include a large-scale evaluation of students using the team planning approaches laid out in the flipped workshop and of the impact of those approaches on students' collaborations. More research needs to be done on how the

flipped workshop affects students' uptake in planning, satisfaction with their projects, and quality of their team planning documents. The end result of this research would culminate in evidence-based and portable training materials for instructors to use when teaching team planning strategies in their own classrooms.

While there is much potential for the use of these strategies in the classroom, teachers should also keep in mind that procedures alone do not make for a cohesive team, nor can procedures alone help students reap the benefits of teamwork. Students need to learn how to unpack their own and their peers' assumptions, be receptive to diverse perspectives, and figure out compromises that would work for both team and individual goals. These behaviors are not easily proceduralized. Procedures can help alleviate problems that teams typically encounter, but they cannot sufficiently stand in for the tougher conversations that need to happen on teams. In fact, sometimes procedures can mask bigger underlying problems because it seems as though the procedure seemed to "fix" them. We need to provide a safe space where students can practice having difficult conversations about diversity, experiences, values, and goals. Future research needs to further explore how we can better do this in the classroom.



## CHAPTER 4: SCAFFOLDING DIFFICULT CONVERSATIONS: A PILOT OF A FLIPPED TEAM CHARTER PEDAGOGY

### **Introduction**

In my previous dissertation chapter, I evaluated a flipped approach to teaching task schedules in the classroom. The flipped pedagogy had very good reception from students and showed an improvement in how they were planning their projects. While I implemented the flipped approach on task schedules, I left the team charter pedagogy more or less intact. Team charters, or sometimes called team contracts, are documents that outline goals, expectations, values, strengths and weaknesses, potential obstacles, and norms that the team should keep in mind throughout their collaboration. The goal of a team charter is to unpack assumptions and expectations so that possible divergences in goals and needs can be identified and resolved at the onset of a project. According to Wolfe (2010), a team charter helps a team identify possible pain points and plan for them; should a team come across a problem later on in the project, they will have a plan for how to resolve it and get back to work in an efficient manner.

Research on team planning has been consistently in support of using team charters, finding them to be an important part of building team culture, managing conflict, and securing team cohesion. Studies have suggested that team charters can help build trust, especially when there are differences among team members (Aaron et al., 2014; Byrd & Luthy, 2010). Team charters can also help establish norms and a team culture that creates predictability and guides interactions (Wolfe, 2010). Team charters can be especially useful for helping teams unpack assumptions about time, feedback, commitment, and goals—all of which, if left undiscussed, can lead to common value-based conflicts. Although Jehn & Mannix (2001) do not explicitly

mention charters, they talk about the importance of agreed-upon norms and shared assumptions in establishing trust on a team. On diverse teams, establishing shared norms and assumptions becomes especially critical in helping members understand each other's needs, goals, and expectations and overcoming barriers of trust (Govindarajan & Gupta, 2001). In doing so, the goal is that teams can establish psychological safety (Mathieu et al., 2000) or a safe space to take interpersonal risk without a fear of repercussion (Edmondson & Lei, 2014).

While team charters seem to offer a simple pedagogy for helping teams establish shared norms, there is a risk that team charters can mask inequities and power dynamics behind the seemingly simple procedures they provide. Specifically, effective teams are not without conflict; instead, effective teams learn how to manage the unproductive interpersonal conflicts and instead foster the productive conflicts around ideas (insert conflict literature here). The challenge is that the research is mixed on how best to promote productive conflicts while keeping interpersonal conflicts at bay. On one hand, there is consensus in the research that shared group norms that are established ahead of time help to reduce interpersonal conflict (Govindarajan & Gupta, 2001; Wolfe, 2010; Lam, 2015). On the other hand, too much consensus can lead to groupthink and counteract the benefits that diverse team members bring to the table (Janis, 1982; Goby, 2007). Team members who are most comfortable with sharing ideas and who have the least to lose in doing so can sometimes dictate the norms for the team. For example, (Wolfe & Powell, 2016) found that minority groups, such as women, black, Hispanic, and Native American members, often experienced dominating team members, exclusion from participation, and limited learning when their teams did not adequately plan for collaboration. Similarly, members who are perceived as having an accent (Gluszek & Dovidio, 2010; Kim et al., 2019; Lev-Ari & Keysar,



2010; Russo et al., 2017) or a lower proficiency in English are also often excluded from work due to biases about competency and writing ability (Poznahovska, 2016, unpublished).

There have been many calls in the technical and professional communication field to interrogate the ways that we teach seemingly “objective” and neutral procedures (Jones et al., 2016, p. 212), one of which is the team charter. For the most part, the pedagogy of team charters has been largely unchanged ever since Joanna Wolfe came out with her seminal *Team Writing* book in 2010. In *Team Writing*, Wolfe (2010) provides samples of team charters, templates for guiding team conversations, and explanations for students as to why the team charter is useful. The book stresses the importance of coming up with plans for conflict resolution when team members are level-headed, and their judgment is not clouded by the emotions of conflicts. If team members can come up with a plan ahead of time, they may be more likely to execute a solution in a calm and rational manner should the problem arise in the future.

When I initially created the flipped workshop, I did not revise the team charter approach since much of the research has been consistently in support of team charter use in the classroom. Furthermore, the workshops received positive feedback from students and instructors alike; instructors especially continued requesting the workshop in their courses explaining how important the lessons were for their students. However, after implementing the flipped approach with task schedules, I began to question if there may be alternative ways of teaching team charters as well. While previous research has discussed the benefits of team charters, no study has compared different types of charters or different instructional methods for teaching them in the classroom.

The goal of this chapter is to interrogate if there may be alternative methods to team charter pedagogy, especially ones that attend more to diversity on teams. Specifically, in order

to address the gaps in the team charter pedagogy, I sought to create a flipped, modular team charter activity that would help students identify and unpack their own assumptions and give teams the chance to compare and deliberate their individual values before constructing a shared team charter. The flipped approach is based on the idea that students are introduced to concepts and strategies at home and then they implement and practice those strategies in class where they can receive more pointed guidance from instructors and feedback from peers (Talbert, 2017).

Specifically, the flipped team charter approach implemented four main changes to the way that team charters were taught: (1) Increased time on task, (2) increased reflection on individual goals, values, and assumptions, (3) more opportunities to practice compromise and empathetic collaboration in non-face threatening ways, and (4) more thorough discussions of team differences and agreement on key team decisions.

In order to evaluate the effectiveness of the flipped team charter approach, I piloted the activity during the course of two semesters and compared the resulting team charters to those collected from teams who had not participated in the flipped workshop. I seek to answer the following research question in this comparative pedagogical study:

1. To what extent did the flipped team charter activity change how students were discussing and documenting their team values, goals, and expectations?
2. To what extent did the flipped team charter activity impact students' attention to diversity on their teams?

In what follows, I outline the pedagogical design behind the flipped team charter activity as well as the methods for evaluating the flipped activity's impact on students' teamwork. I also report on the results of the evaluation and provide some future direction for pedagogical implementation and research.

## Pedagogical Design

I developed the team charter activity based on the flipped workshop design piloted in Chapter 3, which focused on introducing students to team planning strategies at home and then giving students time in class to interact with their peers over the planning strategies. Give research on flipped classroom design [here](#).

The team charter activity is embedded into a larger workshop on *Team Communication*, which consists of three modules. Module 1, the “Personal Assumptions Module,” introduces students to the benefits of team planning by way of a scenario and then asks students to unpack their own expectations, values, and goals for their own team projects. Specifically, students are asked questions in the following categories: team and personal goals, feedback and revisions, values around timeliness, and commitment levels. Each team member’s answers are recorded and aggregated for later classroom use. In Module 2, the “Task Schedule Module,” students are introduced to the task schedule strategy and given time at home to create a draft they will share with their team members. Both the Personal Assumptions Module and the Task Schedule Module are completed at home. In Module 3, the “Merging Expectations Module,” students come together as a team in class to share their ideas and integrate them into a mutually created team charter. In addition, students have an opportunity to practice compromise in a low-stakes situation and then they engage in perspective sharing, perspective taking and compromise for their own teams.

The revised modules improved the previous *Team Communication* workshop in the following ways: increased time on task, increased reflection, opportunity to practice responding to problems using empathetic language in non-face threatening situations, and increased reflection on individual differences and practice merging differences with non-face threatening

language. Below, I discuss each revision in detail and provide accompanying examples from the team charter activity.

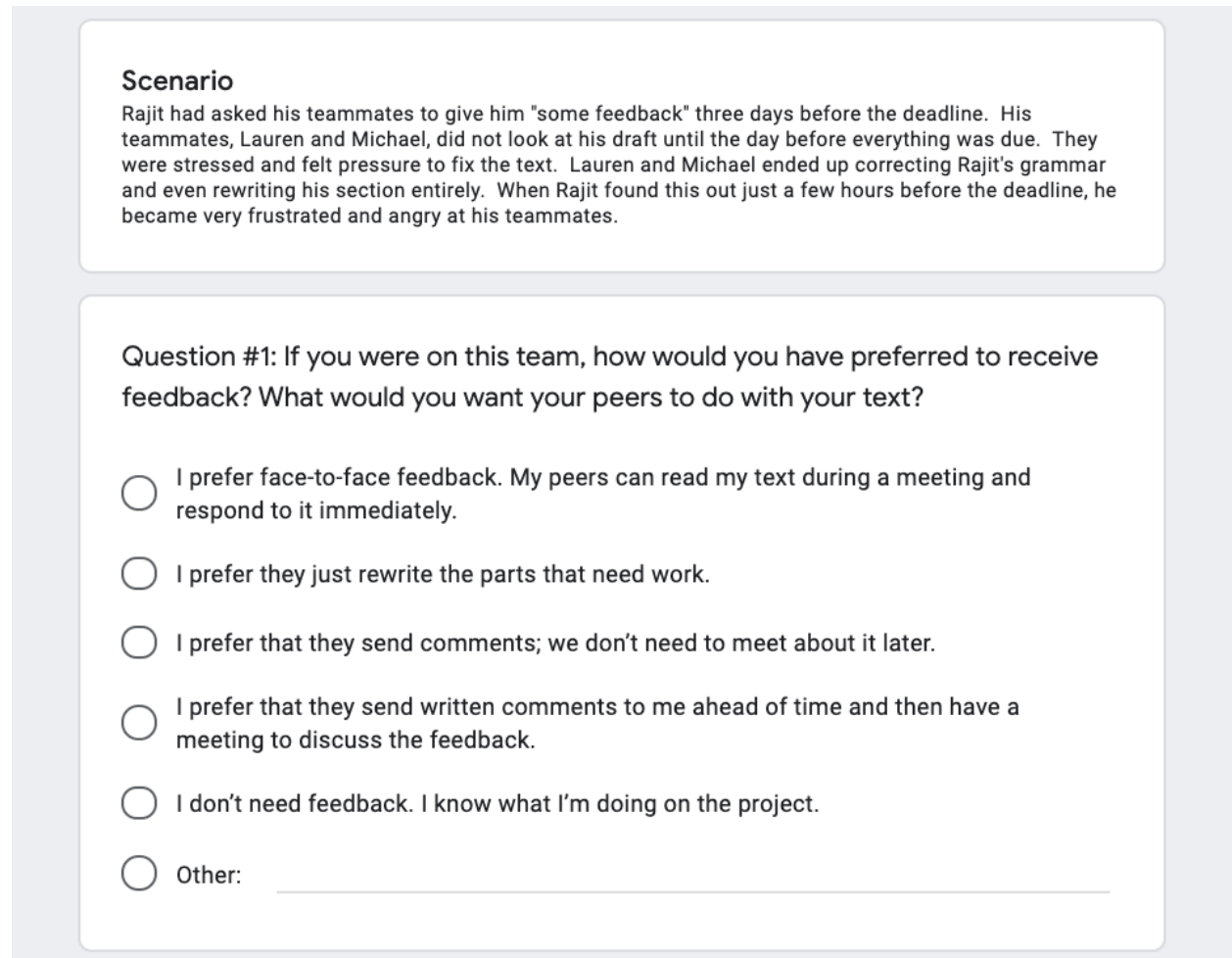
### ***Increased time on task***

In previous workshop iterations, students were introduced to the team charter in class and were typically given 10 to 15 minutes to discuss ideas with their peers. Some teams may have started the team charter together in class; however, most did not complete the activity during the workshop. The flipped version of the workshop built in more time for students to spend on the different components of the team charter. Specifically, the time on task increased from 15 minutes to about 100 minutes while still only requiring only one class period to be spent on the activity. Students spent about 60 minutes unpacking their expectations during the at home Module 1 and becoming familiar with the sample documents on their own time. When teams came together as a class to complete Module 3, most spent between 40 to 60 minutes (out of an 80-minute class period) discussing their values, expectations, and goals for the team charter.

### ***Increased reflection on individual goals, values, and assumptions***

Students were asked to spend time unpacking their own assumptions prior to discussing any shared values with their team. To facilitate this unpacking, students were given scenarios within four key team categories: team and personal goals, feedback and revision, values around timeliness, and commitment levels. The scenarios illustrated a fictional student team that was grappling with unexpected challenges across those four categories (see scenario on feedback in

Figure 12). Students at home were then asked to reflect on what they would do in those situations (see Figure 12). Their answers were recorded for their and their team's reference.



**Scenario**

Rajit had asked his teammates to give him "some feedback" three days before the deadline. His teammates, Lauren and Michael, did not look at his draft until the day before everything was due. They were stressed and felt pressure to fix the text. Lauren and Michael ended up correcting Rajit's grammar and even rewriting his section entirely. When Rajit found this out just a few hours before the deadline, he became very frustrated and angry at his teammates.

**Question #1: If you were on this team, how would you have preferred to receive feedback? What would you want your peers to do with your text?**

- ☐ I prefer face-to-face feedback. My peers can read my text during a meeting and respond to it immediately.
- ☐ I prefer they just rewrite the parts that need work.
- ☐ I prefer that they send comments; we don't need to meet about it later.
- ☐ I prefer that they send written comments to me ahead of time and then have a meeting to discuss the feedback.
- ☐ I don't need feedback. I know what I'm doing on the project.
- ☐ Other: \_\_\_\_\_

*Figure 12: Scenario depicting discrepancies in feedback preferences from Module 1*

In addition, students were asked questions about their actual team projects and what they hoped to achieve over the course of working with their teams. Questions once again focused on

the four main team aspects and prompted students to think about their collaboration in more concrete terms rather than as an abstraction of teamwork (see examples in Figure 13). Students' answers to these questions were also documented to be later shared with their team members.

Refer to the assignment description for your team project. As you read it, think about the team goals as well as your own personal goals for the project.

Question #2: What do you want YOUR TEAM to achieve by the end of the project?

Your answer \_\_\_\_\_

Question #3: What do YOU hope to accomplish/what specific skills do you want to learn by the end of the project? Some specific outcomes might include: learning a new skill, gaining more practice and proficiency in a method, having a chance to network with certain people, producing a deliverable you've never created before, etc...

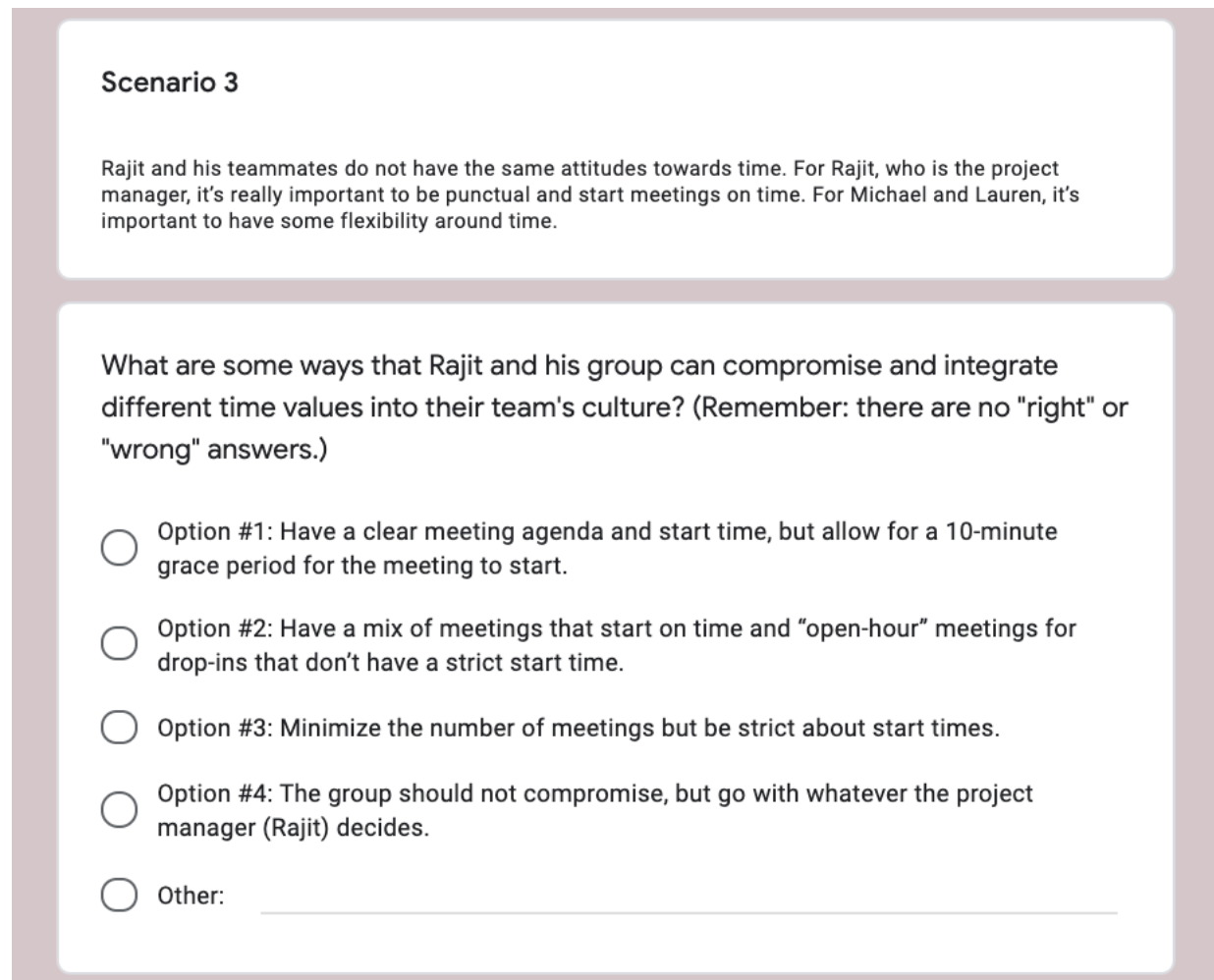
Your answer \_\_\_\_\_

*Figure 13: Questions prompting students to think about their project goals*

### ***Provided opportunities to practice compromise in non-face threatening ways***

After students complete their self-evaluations of their own assumptions and expectations, the goal is to share those expectations with the rest of the team and to find compromises where

appropriate. However, before teams can compromise with their own team members, the workshop provided students with an opportunity to learn *how* to compromise and to practice in a low-stakes situation. Specifically, students were yet again prompted with scenarios about the fictional team and asked to help the fictional team find a compromise on divergent values and expectations (see Figure 14). The fictional scenarios provided students with a space to deliberate and share different ideas in a non-face threatening way; the students could more freely share perspectives since the answers did not impact their own projects but instead had a low-stakes impact on their collaboration.



**Scenario 3**

Rajit and his teammates do not have the same attitudes towards time. For Rajit, who is the project manager, it's really important to be punctual and start meetings on time. For Michael and Lauren, it's important to have some flexibility around time.

What are some ways that Rajit and his group can compromise and integrate different time values into their team's culture? (Remember: there are no "right" or "wrong" answers.)

- ☐ Option #1: Have a clear meeting agenda and start time, but allow for a 10-minute grace period for the meeting to start.
- ☐ Option #2: Have a mix of meetings that start on time and "open-hour" meetings for drop-ins that don't have a strict start time.
- ☐ Option #3: Minimize the number of meetings but be strict about start times.
- ☐ Option #4: The group should not compromise, but go with whatever the project manager (Rajit) decides.
- ☐ Other: \_\_\_\_\_

*Figure 14: Scenario prompting students to practice compromising*

Furthermore, the scenarios provided students with an opportunity to practice compromise together as a team. Because the teams ultimately needed to document their answers and try to come to a mutually agreeable decision, the scenarios gave students a space to practice the vital team skill potentially without fear of repercussion, embarrassment, or anxiety over how it will affect their other team members.

Finally, the scenarios gave students models for empathetic collaboration. The reflection questions provided students with sample answers that included language empathetic towards team members. Students were given discourse strategies that they could then use later when they needed to compromise with their actual teams over important goals, values, and decisions.

***Encourage more thorough discussion of team differences and agreement on key team decisions***

After spending some time practicing compromise over the scenarios, the student teams compare, discuss, and reflect on their answers from the at-home modules. Using the empathetic, non-face threatening discourse strategies provided to them in previous parts of the workshop, students are asked to come to an agreement on how they will proceed along the four key team categories (see Figure 15). In order to receive class credit, students are required to document their discussions and decisions in the form provided for Module 3, the “Merging Expectations Module.”



**Feedback & Revision**

Compare and discuss your answers to Question #1 under the "Feedback & Revision" section of Module #1: If you were on this team, how would you have preferred to receive feedback? What would you want your peers to do with your text?

Your answer

Compare and discuss Question #2: Think about your preferences for the type of feedback you like to receive. If you were on this team, what would you want your peers to focus their feedback on?

Your answer

*Figure 15: Questions asking students to compare and discuss their values, goals, and expectations from the “Unpacking Personal Assumptions” module*

## Methods

All methods of data collection in this teaching case were approved by Carnegie Mellon University’s Institutional Review Board. A combination of team charter analyses and survey data gives insight into how student teams used the charters for their projects. The team charter analyses provide evidence of each teams’ planning process, while the survey data illustrates individual student’s perceptions of the impact the planning tool had on their teamwork.

The purpose of this pedagogical study is exploratory and descriptive in nature—to get a broad overview of the types of problems that seem to arise when students use the team charters

and then to test how a revised approach impacts team planning. Despite instructors' best efforts to use team charters to facilitate difficult conversations about goals, conflict resolution, expectations, and experience, there seems to be a gap in how we are teaching team charters and how students are using them. It is therefore imperative to understand the underlying challenges that students are experiencing when using team charters and to test an intervention that could better suit students' needs.

### ***Team Charter Data Collection***

A total of sixty-two (62) team charters were collected for analysis for the purpose of this study. Twenty-nine (29) charters were collected from five classes that had participated in the original design of the workshop (from here on out referred to as the "Pre" category). The courses in the Pre category included business communication, professional and technical communication, and engineering. Thirty-three (33) charters were collected from five classes that had participated in the flipped team charter design (from here on out referred to as the "Post" category). The courses in the Post category included philosophy, business communication, organization communication, professional and technical communication, and statistics classes.

The composition of teams ranged from dyads to 7 members on a team. Teams worked both synchronously in person as well as asynchronously individually. Most commonly, teams tended to work asynchronously on their individual components and would hold synchronous meetings. The teams who participated in the flipped workshop worked entirely over virtual platforms due to the circumstances of the pandemic. However, the biggest shift experienced by teams in this study was that typical in-person meetings were held over video conferencing.

Team charters in the pre category were collected directly from instructors after students submitted them as part of their team projects. Team charters in the post category were collected as part of the flipped workshop modules with students' consent. All collected data was anonymized and identifying markers removed.

### ***Team Charter Data Analysis***

To analyze the team charter data, I used a grounded theory approach (Charmaz & Belgrave, 2002; Glaser & Strauss, 1967), identifying patterns and trends through a careful study of the data. To facilitate my analysis, I used the software MaxQDA to create, assign, and organize codes within the data. I assigned codes based on the specific attitudes, approaches and discourse strategies students were using within their team charters. I used descriptive starter codes (Miles, Huberman & Saldaña, 2014) and open coding (Corbin & Strauss, 2008) to identify more specific situations, attitudes, and behaviors within participants' interview responses, recoding the data based on the open-coding system. I, then, looked for codes that appeared together frequently, identifying trends, patterns, connections, and relationships between the open codes (Corbin & Strauss, 2008). The open codes were then organized into clusters, labeled, and provided with specific definitions. The entire data set was then recoded with axial codes to check the validity and identify any inconsistencies within the coding.<sup>8</sup> Table 3 below outlines the codes used and provides explanations for what they mean.

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<sup>8</sup> Next steps for this study include getting interrater reliability in order to further assess the validity of the codes and my assessment of the team charters.

*Table 3: Description of the Codes Used to Analyze the Team Charters in the Data Set*

<b>Code</b>	<b>Definition</b>	<b>Keywords</b>	<b>Example</b>
Rigid Rule	Team Charter includes language that assumes routine procedures and predictable outcomes (Rose, 1980). Language is often imperative and definitive. Commands are often provided.	“must”, “will”	“Team members should not submit poor quality work as it is as the expense of the whole group. If they do, then they must redo their work so that is sufficient for the project standards and have it reviewed by other members as well.” (Pre 15)
Describes problematic situations	Team charter discusses different team challenges as problems that the team must deal with. Team often takes a negative view on challenges.	“If a team member misses a deadline...”, “If a team member does not respond...”, “If you aren’t at the meetings...”	“If a team member unknowingly makes a mistake and submits poor quality work, then the team should discuss with each other how they’re going to proceed with editing and double-checking moving forward.” (Pre 9)
Describes different team contexts and opportunities	Team charter discusses different team challenges as opportunities or alternative contexts. Team tends to take a more positive view on challenges.	“In regards to upcoming meetings...”, “it depends on the type of feedback...”, “if tasks are completed before the stated deadlines...”	“In regards to upcoming meetings, we would like to review the work prior to the start of the meeting so that we do not waste time during the meeting.” (Post 26)  “Written feedback beforehand saves time during actual meetings and provides more flexibility but we also concur that having meetings to discuss these feedback in a more thorough manner would be helpful in terms of actual implementation of revisions.” (Post 9)
Discuss the team’s preferences	Team charters include preferences for what they would like their team to do	“We both want”, “we	“In agreement. We both want to receive highlights, underlines and

	rather than demanding that their team do it.	would like”, “we prefer”	comments next to the text on what needs to change.” (Post 7)
Hedging	Students use language that expresses uncertainty, lack of commitment to a position	"might," "could," "maybe", "should"	<p>“If it is something major, we think that meeting over Zoom would be the best option.” (Post 32)</p> <p>“Should things get very bad, we may have to resort to asking an instructor to intervene, but hopefully such things will not happen.” (Pre 13)</p>
Punitive language	Language in team charters that positions team members as at fault, responsible for mistakes and/or punishes team members who err. Students’ work is also described in derogatory terms, such as “shoddy” (Pre 5). Often a common response is to exclude or report a student who makes mistakes.	“responsible for mistakes”, “failure to”, “fault”, “warning”	<p>“If the missed deadline is the fault of the project manager, then either of the remaining group members may perform the aforementioned actions of the project manager in resolving the issue.” (Pre 1)</p> <p>“Missed Deadlines - ‘One’ strike warning, then reassign responsibilities” (Pre 5)</p>
Consensus language	Students describe a decision using agreement terms. A decision is prescribed to all team members using agreement language. Students also describe how their	“we all agreed”, “our team agrees”, “we all want”	<p>“If we experience productive, idea-based conflict that is not resolved after 45 minutes of respectful discussion of the points, we agree to vote (straight majority) on the solution and proceed with the results as if they were binding.” (Pre 14)</p>

	team will come to an agreement.		“We both agree that we want to learn all the aspects/parts of writing a case proposal as well as learn communication skills and improve our interpersonal qualities.” (Post 9)
Include team members' points of view	Team charters outline different individual team members' perspectives on a topic.	<p>“I think...my peer thinks...”,</p> <p>“One of us thought...while the other member believes...”,</p> <p>“Teammate 1:... Teammate 2:...”</p>	<p>“Teammate 1: 2:20</p> <p>Teammate 2: Other, it depends when they let you know.” (Post 10)</p> <p>“U said he'd email a few days earlier to remind them, where I would send one email 24 hours beforehand. This is good because it gives our team enough reminders for the meeting.” (Post 13)</p>
Try to compromise on divergent views	TCs show students trying to negotiate and compromise on different points of view. Sometimes it culminates in consensus, other times can culminate in an acceptance of divergent views.	<p>"I think he has a good point",</p> <p>"Our compromise is to",</p> <p>“Combination of responses...”</p>	“Combination of responses: we would prefer they keep us in the loop through text updates regarding why they're late (e.g. chatting with professor, in lab, etc.), but once they arrive we prefer they keep it break so we don't fall further behind or disrupt the flow of the meeting.” (Post 1)
Provide explanation	<p>Students provide additional explanations or elaborations on why they made certain decisions or why certain plans are better than others.</p> <p>Students also provide explanations for how their actions/decisions</p>	<p>“so that”,</p> <p>“because”, “in order to”, “we can use this for”, “which can”, “this will allow”</p>	<p>“...we agreed to schedule a quick in-person meeting following deadlines / poor work submissions, so that we can discuss what went wrong as a group in a productive way. This will allow us to resolve problems without hurting each other's feelings or the productivity rate of our group overall.” (Pre 11)</p> <p>“It would be better to email you peers 1 or 2 days prior to the meeting so they have time to go</p>

	will impact the project or team.		over the drafts and give feedback.” (Post 2)
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The different sections of the team charters were labeled according to the codes in the table above. I used double coding in my analysis; one section could be labeled with more than one code, such as with “Try to compromise on divergent views” and “Provide explanation.” My unit of analysis, however, was the team charter. For example, if “Rigid rule” appeared three times in a charter, it was only counted as one instance in that charter for the purpose of this study. I, then, compiled a percentage of charters that had an instance of each code for both the Pre and Post categories.

### ***Survey Data Collection and Analysis***

In addition, sixteen (16) students participated in a post-workshop survey (see APPENDIX J: FALL 2020 SURVEY OF STUDENT SATISFACTION AFTER FLIPPED TEAM CHARTER WORKSHOP) that asked students how the team planning documents impacted their teamwork. The purpose of the surveys was to gather additional data on students’ individual experiences and their perceptions of how well the strategy worked for their teams. The surveys asked questions in the categories of usefulness of the team charter during their team projects, strengths and weaknesses of the team’s planning, comfort with discussing feedback and ideas, and other questions related to general team processes. While the sample size is small, it provides additional data on how the flipped approach impacts the team dynamic.

## **Results**

The results from the team charter analyses show numerous changes in how students are planning value-based team conflicts, norms, and goals. Table 4 illustrates the differences in how students are conceptualizing teamwork and the changes in discourse strategies used across the team charters. Results of the team charter analysis show three major differences between the pre charters and the post charters:

- (1) Team charters in the pre category take a more absolutist and universalist view of teamwork while charters in the post category take a more nuanced approach to collaboration.
- (2) Charters in the pre category tend to punish team members for poor quality work and view mistakes as personal transgressions, while the post charters create an environment of psychological safety to encourage collaboration, discussion, and improvement.
- (3) Charters in the pre category prioritize consensus above all without any attention to possible divergences in ideas or goals, while the post charters attend to differences in perspectives and work towards accommodating compromises.

These differences between the pre and post team charters are more thoroughly elaborated in the sections below.

*Table 4: How Students Conceptualize Teamwork between the Pre and Post Categories*

	Pre %	Post %
<b>Absolutist vs. Nuanced</b>		
Rigid Rule	83	58
Describes problematic situations	83	9
Describes different team contexts and opportunities	24	45
Discuss the team's preferences	7	42



Hedging	38	64
<b>Punishing vs. Psychologically Safe</b>		
Punitive language	69	15
Describes problematic situations	83	9
Describes different team contexts and opportunities	24	45
<b>Consensus vs. Compromise</b>		
Consensus language	62	64
Include team members' points of view	3	36
Try to compromise on divergent views	3	39
Provide Explanation	17	48
N = Documents	N=29	N=33

### ***Absolutist versus Nuanced View of Teamwork***

*Table 5: Differences in how team members conceptualize teamwork*

<b>Pre: Teams take a universalist &amp; absolutist view of teamwork</b>	<b>Post: Teams take a nuanced approach to teamwork</b>
<p>Behaviour Expectations</p> <p>1. Warranty of Honesty- Each member agrees to be honest with the other team members.</p> <p>2. Covenant of Good Faith and Fair Dealing - Each team member agrees to treat the other team members with the respect, kindness, and sincerity that they themselves expect to be treated with. (Pre 8)</p>	<p>For grammar and syntax, we prefer direct revisions. For other tasks, we prefer commenting/suggesting edits on the side. The team also prefers messaging prior to the meeting about changes so that it is clear and convenient. In regards to upcoming meetings, we would like to review the work prior to the start of the meeting so that we do not waste time during the meeting. (Post 26)</p>
<p>Code of Conduct</p> <p>Treat everyone in the group respectfully</p> <p>Be honest about the position you are coming from.</p>	<p>Towards the start of the assignment, we both agree on the value of sharing thorough feedback and discussing our contributions in-depth as well as sharing points of improvement. But the idea is time subjective,</p>

<p>Assume everyone is being reasonable and trying to do their best</p> <p>Want to learn how other people operate; your way of operating isn't always or necessarily the best way</p> <p>If there is a conflict, first directly address it with them</p> <p>Listen to other people, take turns in conversations, and share the speaking time (Pre 6)</p>	<p>so if we don't have time to do that, it would probably be best to stick to the briefer forms of feedback and quick revisions. (Post 9)</p>
<p>If a team member knowingly submits incomplete or poor quality work, they should Message the team with a plan for updating their work and an apology for inconveniencing others. They will also be required to bring Fuku to the next team meeting. (Pre 25)</p>	<p>If it is something major, we think that meeting over Zoom would be the best option. If it's updates and scheduling for meetings and minor clarifications we prefer to contact each other on our WhatsApp group. (Post 32)</p>

The team charters illustrate students moving away from a universalist and absolutist view of teamwork to a more nuanced approach that attends to values and difference. Specifically, team charters shifted away from using rigid rules (83%) and problematic framing (83%) in the pre category to a more context-focused approach (45%) in the post category. Moreover, students included more discussions of team's preferences (42%) and hedged (64%) on their different decisions in the post category.

The team charters in "Pre" category include more imperative language, such as "should" and "must," that expects all team members to act a certain way and assumes that everyone is on the same page. As the Pre 8 team charter in Table 5 illustrates, there seems to be an assumption that all team members share the same values and that they all have similar conceptions of what

“respect, kindness, and sincerity” mean within the context of the project. It is not enough to ask team members to treat each other the way “that they themselves expect to be treated” since each team member might have different interpretations of what that looks like. For instance, a team member might call out another member’s mistakes in front of the team as a way of being honest; meanwhile the other team member might feel disrespected and belittled by that. Unlike the other examples, the Pre 6 team charter seems to take a more nuanced approach by acknowledging that team members may have different ways of “operating.” However, it, too, does not unpack those differences nor does it make plans for how those differences will be accommodated throughout the project.

One of the most compelling examples of unspoken assumptions is Pre 25’s discussion of what to do when someone “knowingly submits incomplete or poor quality work” (see Table 5). First, there is an unspoken assumption that the writer is aware of their errors and is actively “inconveniencing others” (Pre 25). Second, there is also an assumption that everyone is on the same page about what “poor quality work” entails. The issue here is that one team member might view grammatical errors as emblematic of poor-quality work, while another might perceive structural disorganization as poor quality. Third, the solution that follows assumes a negative view of the writer and their intentions towards the team. The example in Pre 25 illustrates how a team can create an absolutist reality where there is only one way to correctly write; however, that correct way is not unpacked or described for the rest of the team to understand.

The Post team charters seem to recognize that decisions are not final and that the unexpected can happen during a project. Therefore, the charters outline specific situations and then provide specific actions for how they might respond in those situations. For example, the

Post 32 team charter in Table 5 outlines two different conditions for meetings and how they might impact the team's decisions: "If something is major" the team will proceed in one way, "If it's updates and scheduling for meetings and minor clarifications," the team would prefer to act in a different way. Meanwhile, students in Post 9, directly acknowledge biases imbedded in values, such as time. They explain that "the idea of time is subjective" and then provide alternatives for how the team can get around possible obstacles that can result from different perceptions of time. The post charters build in a benefit of the doubt for their members, using hedging terms such as "we would like to review the work prior to the start of the meeting" (Post 26) and "it would probably be best to stick to the briefer forms of feedback and quick revisions" (Post 9). These examples show an awareness of context, attention to team members' preferences in different situations, and willingness to be flexible if need be.

The analyses of the pre and post team charters show a major shift from absolutist understanding of teamwork to a more nuanced approach. There is a transition from telling the team members what to do in the pre charters to showing team members how they can do it in the post charters. In other words, the students in the pre team charters tend to demand abstract behaviors from their team members and assume everyone understands how to perform in the same way. There tends to be focus on shared values without necessarily acknowledging how varied each team member's interpretations could be. The post teams, however, do not assume shared values and therefore take more time to unpack specific situations and responses. The post charters are more open to subjective interpretation and recognize the role that context plays in interpreting and reacting to a situation. Thus, in order to avoid possible conflict, the post team charters outline very specific and explicit terms for teams to follow.

## ***Punishing vs. Psychologically Safe Environments***

*Table 6: Differences in how Pre and Post teams plan for feedback and revision*

<b>Pre: Teams punish people for work that does not meet expectations</b>	<b>Post: Teams create a psychologically safe environment that prioritizes improvement, asking for help and collaboration</b>
<p>"Poor Quality work: In order to take responsibility for the unsatisfactory work, they should indicate that <b>the incomplete/error-ridden work is completely their fault</b> and that it would be unfair for other teammates to take more time to <b>fix their work.</b>" (Pre 9)</p>	<p>In agreement:</p> <ol style="list-style-type: none"> <li>1) Everyone accepts constructive criticism and understands that <b>any comments regarding improvement is not a personal offence.</b></li> <li>2) Both positive and negative feedback is wanted, <b>but should be mainly focused on what can be worked on to make the draft better.</b></li> </ol> <p>...</p> <p>In agreement:</p> <ol style="list-style-type: none"> <li>1) If feedback is confusing, ask the peer who gave the feedback for clarification so that <b>the drafter can make proper revisions in the vision that the peer was thinking.</b></li> <li>2) The drafter makes the changes/revisions and <b>then gets MORE feedback upon the changes in order to see if it matches the peer's vision.</b> (Post 21)</li> </ol>
<p><b>"If a team member is purposefully submitting poor quality work (incomplete, error filled, etc.), they will be asked why they did this.</b> If the submission was rushed due to time, they will get one more day to redo the work at a higher quality. <b>If the submission was out of pure laziness, they</b></p>	<p>Email peers before meeting to have extra time to look at the draft/</p> <p>Provide a very thorough critique of the content, structure, and any other parts of the</p>

<p><b>will get one chance to redo the work after an apology, but if lazy submissions continue to follow through multiple assignments, they will be reported to the instructor.” (Pre 30)</b></p>	<p>text. I want to be able to improve as much as I can.</p> <p>Send written comments to me ahead of time and then have a meeting to discuss the feedback.</p> <p>Listen to group feedback, make changes and then resubmit for the group to review. (Post 3)</p>
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While the use of rigid rules in the Pre category took on a detrimental role for the teams, it should be noted that rules at the end of the day are not necessarily a bad strategy to use in a team charter. In many cases, rules can set parameters for team members on how to behave in different situations and provide protocols during possibly challenging moments. The difference between the way that the Pre and Post team charters use rules, however, is telling about how teams are thinking about norms—the Pre teams use rules to norm people, while the Post teams use rules to norm expectations for accomplishing different tasks, such as feedback and communication. We can see this difference in how the teams discuss feedback and revision between the Pre and Post categories.

The Pre teams norm people by attributing blame to team members for work that does not meet expectations, by using punitive language (69%), and by framing obstacles as problems that need to be dealt with (83%). The Pre teams tend to associate textual errors with an individual team member’s personal attributes, putting blame on the writer for the errors because of a personality trait. For example, problems were considered “completely their fault” (Pre 9) and associated with a team member’s “laziness” (Pre 30) or “being problematic” (Pre 16). Issues that

were identified were considered to be a “threat” (Pre 8) to the team’s cohesion and could be “reported to the instructor” (Pre 30). By framing possible pain points as a fault of a team member that needed to be dealt with, teams potentially created a distrustful environment. In such an environment, team members are less likely to come forward with challenges and to ask for help (Dusenberry & Robinson, 2020; Tjosvold et al., 2004).

The Pre teams not only attribute blame to team members for mistakes, but also seem to assume those team members are actively trying to sabotage the team’s progress and know that they are doing something wrong. For example, as the Pre 30 team in Table 6 writes: “If a team member is purposefully submitting poor quality work (incomplete, error filled, etc.), they will be asked why they did this.” Similarly, Pre 8 assumes that team members are actively trying to “threaten the team’s ability to complete a project.” However, the reality is that mistakes are a cornerstone of team projects and that teams work together so that they can help each other overcome challenges and solve problems. Yet, the Pre teams frame failure as something that will get one punished and ousted, an environment that can promote distrust and deter team members from exploring and experimenting with different approaches.

Assuming that poor quality work is a symptom of a bad person also might make teams less likely to budget time for feedback and revision within a task schedule. Task schedules are planning documents that outline tasks, roles, deadlines, and review points throughout a project. In a well-planned task schedule, the expectation is that mistakes will be made, and that feedback and revision will be routine parts of the team process. However, if teams are functioning under the assumption that poor quality work only occurs if someone is a “bad” team member, they might associate feedback and revision with distrust. In other words, instead of proactively building in extra time for possible setbacks, the Pre teams merely provide warnings to ward off

“bad behavior.” Instead of accepting mistakes as the norm and coming up with a plan for how to provide feedback and revise, the Pre teams use scare tactics to punish team members who act inappropriately.

The Post teams, on the other hand, norm expectations for feedback and revision by attending to the various situations that may arise during a collaboration (45%) and by establishing protocols specific to those situations. The Post teams accept feedback and revision as routine processes during teamwork; the teams focus on improving the documents in collaborative ways instead of singling out writers who make mistakes as “bad actors.” As Table 6 illustrates, instead of trying to “fix” (Pre 9) the work for a writer, the teams encourage collaboration between the writer and the reviser to “match the peer’s vision” (Post 21). While the Post teams also include rules within their charters, the rules provide structure for routine processes of feedback and communication, rather than rules on personal behaviors. Pre 30 and Post 3 team charters illustrate a poignant shift in how the teams used rules: The Pre 30 team assigns blame on the writer for the errors in a document and then provides rules for how to deal with the writer themselves; meanwhile, the Post 3 team provides rules for how each writer can go about seeking feedback and how the team can help improve the text.

The use of hedges also allows team members to build in some flexibility into the way that their collaboration plays out and accommodates the unexpected in their team charters. The Post groups included several hedges, e.g., “if possible,” “but considering,” and “could also work.” Ultimately, using hedges comes across as less rigid, more polite, and more sensitive to different contexts that may arise in often unpredictable team projects. As much as team charters help students chart a more predictable course for their project, the nature of the beast is that the complex and unexpected is often the norm and being able to adapt is often more beneficial than



sticking to the rigid rules. When flexibility is provided in a team's plan, students can feel safe to veer off course without the fear and anxiety of being punished for doing something different.

Ultimately, while the Pre teams emphasize punishment, the Post teams prioritize psychological safety on a team, especially around possible pain points that can cause distrust, fear, anxiety, and embarrassment. Research on psychological safety suggests the importance of team members feeling as though they can share ideas and discuss challenges without repercussions (Edmondson & Lei, 2014; Mathieu & Rapp, 2000). If psychological safety is not established from the onset, teams risk breeding a culture of distrust, fear, punishment, and resentment. We can see prevalence of negative team cultures among teams that include members with diverse proficiencies in English (Poznahovska Feuer, 2020). Research on practitioners also encourages the establishment of psychological safety and use of empathy when working in intercultural settings (Alon & Higgins, 2005; Bradley & Campbell, 2016; Fuller et al., 2012). It, therefore, becomes imperative to attend to psychological safety on teams, using team charters as a space where these kinds of conversations can ensue.

### ***Prioritizing Consensus versus Compromise***

*Table 7: Differences in how Pre and Post teams manage possible divergences in expectations*

<b>Pre: Teams prioritize consensus on abstract conflict resolution strategies</b>	<b>Post: Teams prioritize compromise on different perspectives</b>
<p>Poor Quality Work</p> <p>Our team agrees that we should do everything necessary to avoid submitting less than acceptable work (with success defined in the table above). If a team member knowing or unknowing drafts or</p>	<p>One of us thought that there is no need for another feedback after revising the draft, while the other member believes that it is better to resubmit the changes made to the group again for another feedback. Therefore,</p>

<p>submits poor quality work: We all agree that if we make a mistake or do something wrong, we would like an opportunity to correct it. (Pre 14)</p>	<p>we agreed to give a second feedback if the time allows and depending on the complexity of the feedback. (Post 16)</p>
<p>In the event that we find ourselves in a situation in which we have conflicting ideas, we have agreed to follow one of the two protocols. The first being that we explore options of comprising or integrating both ideas. The other option would be to try both and see which best serves the needs of the project. In the unlikely situation that either of the two options above do not work, our last resort would be emailing Professor P about the situation and then acting upon from there. (Pre 18)</p>	<p>[Defining the term “ASAP” for their team.] There are some who agree that it should be within a few hours, but there is also general agreement that the revisions can be given within the end of the day. We can create flexible hours in order to accommodate different situations for each peer. (Post 21)</p>
<p><b>TEAM NORMS</b></p> <p>This team values efficiency and creating an engaging, meaningful product. In order to successfully achieve this goal and minimize unproductive conflict, we agree to communicate openly and listen carefully to each of the ideas and suggestions of the other members. We additionally agree to abide by the guidelines and standards set by our task schedule and charter. (Pre 24)</p>	<p>...I believe when there is no person wanting to learn a specific area, we should focus more on the overall outcome (the grade). However, if there is a request, we should allow people with learning opportunities.</p> <p>He believes that all people should learn so that it would be fair. I think this option is good as long as people should help each other when others are dealing with difficult materials...</p> <p>I believe that a meeting is necessary if we want to make changes to the content, but we should not put too much time into it, so I chose two. My peer believes that we need feedback, but if the changes are not necessary, we do not need to meet. I think he has a good point. (Post 12)</p>

The results show a shift in how the Pre and Post teams manage differences among their members. The Pre teams tend to either eschew conflict or not anticipate it at all. Furthermore, the Pre teams tend to mask differences by agreeing on universal values (consensus comes to 62% for the Pre teams) and assuming that will be sufficient to get the team through any troubles. There is very little discussion of different points of view (3%) in the Pre category. Meanwhile, the Post teams tend to embrace difference by more outwardly discussing alternative viewpoints (36%) and engaging in compromise that accommodates those different perspectives (39%). The increased use of explanatory language in the Post team charters (from 17% in the Pre to 48% in the Post) is also suggestive of reflection on the different viewpoints as well as reasoning for why certain decisions are made and how those decisions may impact the progress of the team.

The teams in the Pre category tend to? assume they will not make mistakes nor encounter conflict. Table 7 illustrates teams using language, such as “In the event that we find ourselves in a situation in which we have conflicting ideas...” (Pre 18) or “Our team agrees that we should do everything necessary to avoid submitting less than acceptable work (with success defined in the table above)” (Pre 14). In these cases, the teams stress that conflict should be avoided. If we follow the logic of the punitive language used in the analysis above, students in the Pre category tended to view mistakes as indicative of team members’ personalities or of problematic teammates. Therefore, they may be reluctant to discuss the possibility of conflict at the beginning for fear of coming across as distrustful or not having faith in their teammates’ performance. However, avoiding conflict can often create more problems than if the teams plan for the possibility of conflict. One such example of common conflict experienced by student teams is misalignment of genre expectations (Poznahovska Feuer, 2020). If teams assume there will be no conflict, they risk blindly entering a collaboration where individual members have

divergent viewpoints on genre and where those divergences can create more work and frustration for the team.

In Pre 14, students agree that “if we make a mistake, we would like an opportunity to correct it” (see Table 7). However, there is no mention of *how* team members would go about making corrections or what “an opportunity” would look like, i.e., meeting to discuss feedback, time to make revisions, etc. Similarly to what we saw in the absolutist and universalist discussion, students in the Pre category tend to assume that all team members will act a certain way. The charters are constructed in a way that does not leave space for alternative views or approaches. Perhaps this was an attempt at building team cohesion and a unified team culture; however, the effect is that students are expected to have the same beliefs and behaviors. While this may provide some predictability on a team, it can also potentially stifle diversity.

While both pre and post charters stayed consistent on the consensus category (62% in the pre and 64% in the post), the differences lie in how the teams reached that consensus. In the Pre charters, students tend to jump to consensus without outlining how they came to their decisions. Teams tend to superficially agree on abstract terms without unpacking the nuances of how each team member interprets a specific issue or topic. For example, in Pre 24, the team explains that “In order to...minimize unproductive conflict, we agree to communicate openly and listen carefully...” (see Table 7). In this example, there is no clear definition of what unproductive conflict looks like nor is it clear what communicating openly will look like within the confines of the project. In Pre 18, the team describes their protocol for managing conflict: “The first being that we explore options of comprising or integrating both ideas. The other option would be to try both and see which best serves the needs of the project.” Pre 18 seems to value compromise; however, the key is that they are *telling* their team members to compromise should the occasion

arise and assuming that it will be “unlikely” that conflict will occur. What we do not see is students *showing* how to compromise and acting on it in their team charter. Examples like this are rampant in the Pre team charters, where students tend to assume that abstract and at times superficial values will provide enough guidance during moments of conflict. The challenge is that there is no indication that the team members are on the same page about what the values mean and how they should be

Meanwhile, the Post teams embrace the different perspectives between team members and anticipate the possibility of conflict that could arise from different viewpoints. From the pre to the post team charters, there was an increase in discussing team members’ points of view (3% to 36%) and compromising on divergent views (3% to 39%). Teams were more likely to outline different members’ preferences, hesitations, needs, and goals. For example, the students in Post 16 unpack each member’s preferences for feedback so that should an opportunity for revision arise, each member knows how to best provide suggestions to the other.

Despite an increased focus on divergent viewpoints, the Post teams still try to come to an agreement that provides structure for the team. Specifically, the compromises that teams come up with often accommodate different needs. Unlike the charters in the pre category, those in the post category do not take for granted that all team members believe and act in the same way; instead, the post team charters acknowledge existing differences and then create plans that outline possible ways forward. There are no “right” or “wrong” paths, but rather alternative paths that can be taken depending on the team’s needs.

Students not only try to find compromises between divergent views, but they also validate those divergences. In other words, team members acknowledge their peers’ concerns as valid and important. We can see this in Post 12 as shown in Table 7 where the students are

discussing the appropriateness of meetings: “I believe that a meeting is necessary if we want to make changes to the content, but we should not put too much time into it, so I chose two. My peer believes that we need feedback, but if the changes are not necessary, we do not need to meet. *I think he has a good point* [emphasis added].” The peer validates their team member’s ideas even if they do not necessarily agree with him. The excerpt illustrates a key side effect of compromises that validate different perspectives—establishing an environment of psychological safety where team members feel free to be individuals with unique ideas and viewpoints while still feeling like a valued member of the team.

Analyses also show that from the Pre to the Post team charters there was an increase in the use of explanations (17% to 48%) when outlining decisions for the team. The use of explanations in team charters is an indicator of a process of reflection whereby students are not just providing the rules and expectations for behavior but also unpacking why those norms are important and how they will affect the team. It can be surmised that students’ perspective taking may have led to an increase in elaboration. Perspective taking provides multiple options for a team. When a team makes a decision, they are choosing from several possibilities and need to explain their rationale. Students need to be more explicit about why certain decisions benefit the team more over others and be able to recall those reasons should they refer to the team charter at a later date.

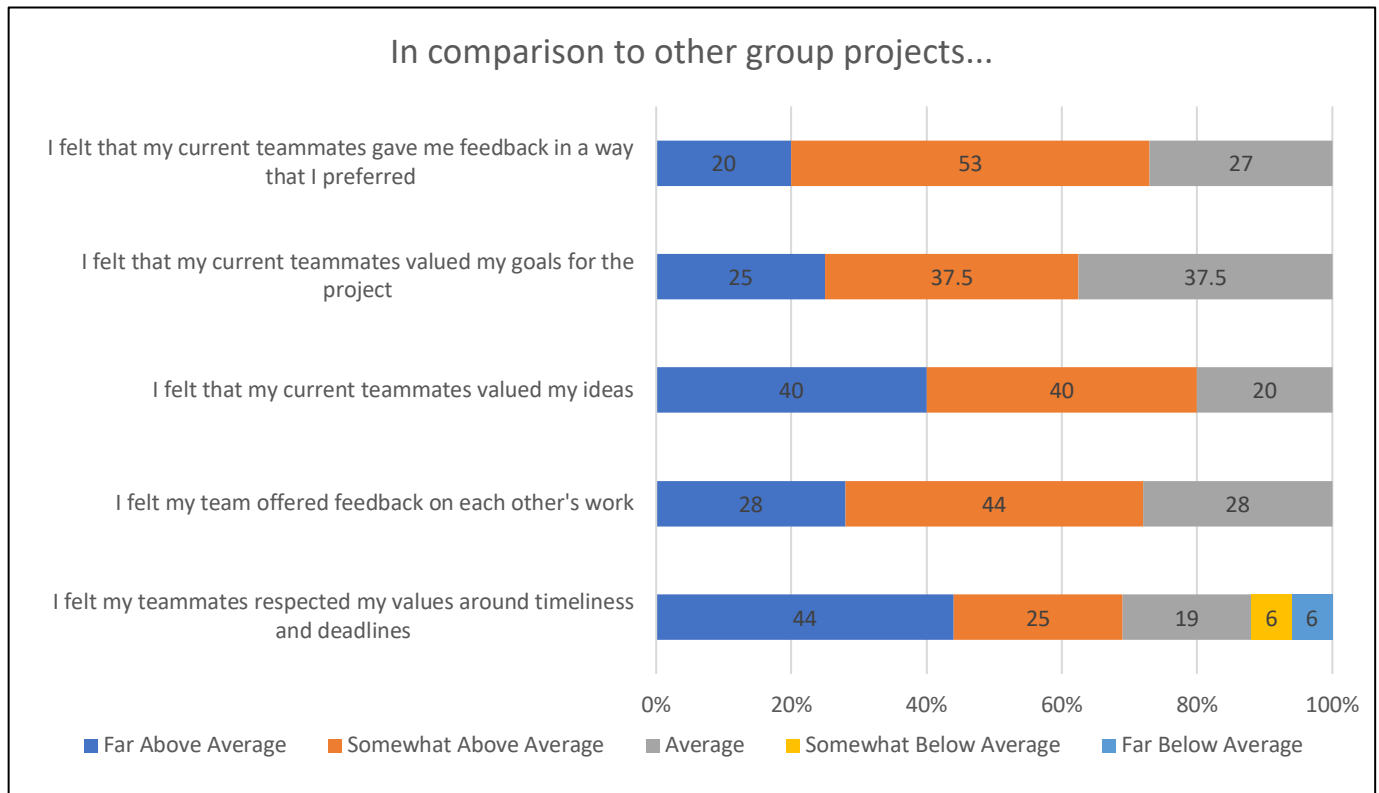
It should also be noted that most of the discussions of points of views and compromises could have been prompted by the team charter activity itself. Students were asked to respond to different scenarios about teamwork and were then asked to deliberate perspectives and document their discussions in the team charter. Students were also prompted with compromise activities, which could have also played a role in the increase of compromising in the Post team charters.

Nevertheless, the increase in these discussions is a positive outcome of the revised activity, suggesting that the modules are indeed encouraging students to be more open about their differences and actively come up with ways of integrating different preferences and ideas.

### ***Survey Data Results***

Upon completing their team projects, students in the post group were invited to participate in a survey rating their satisfaction with their team project compared to similar projects they had been on in the past. While only a small number of students completed the surveys (n=16), the results provide some insight into how the charters might have influenced students' interactions with their peers and the overall effectiveness of flipped team charter activity.

Relative to other group projects that students have been on, students reported an increase in their teams respecting their values, goals, ideas, and preferences for feedback. Figure 16 shows that approximately two-thirds of the Post students completing the survey agreed that their teammates valued their preferences for feedback, goals for the project, and ideas; offered feedback on each other's work; and respected their values around timeliness and deadlines. Although the survey questions were phrased in a way that might have led students to answer positively and should be revised in any future work, the survey results suggest that the charters might have helped the students completing the survey better communicate their individual preferences and feel as though their perspectives were valued on the team.



*Figure 16: Students' perceptions of how the team charter activity impacted their teamwork*

### **Conclusions and Limitations of the Study**

This study evaluated two approaches to teaching the team charter and found that the flipped approach might have been more effective in helping teams that were studied plan and discuss differences among team members. The flipped approach provided more time on task, increased opportunities for reflection, encouraged compromise and empathetic collaboration, and encouraged more thorough discussions of differences. The result of the revised pedagogy was that students took a more nuanced approach to collaboration, paying attention to context and providing specific actions for how to react in different situations. Students also strayed away from punishing team members for wrongdoings and instead created more psychologically safe environments that made feedback and revision the norm. The post teams also attended to the



differences between their team members, validated the diverse perspectives, and aimed at coming up with compromises that attended to the different needs of their team members.

This study extends the research on team charters and team planning by suggesting that a flipped approach to teaching team charters might have helped individual team members become more reflective of their own processes and better plan for their collaborations. Below, I describe key takeaways of this study that address the current gaps and extend the research in teamwork.

### ***The Flipped TC Activity Helped Students Document the Difference within Their Teams***

The flipped approach illustrated that difference can be a resource on a team; however, difference needs to be properly scaffolded so that students can maximize its potential. In other words, it is not enough to place diverse members into a group. Teams need to be given the tools and strategies for how to create psychological safety for diverse perspectives to be shared and valued. The flipped approach increased individual students' awareness of their own values and assumptions and increased teams' likelihood of documenting different perspectives in shared team documents. This approach can be used in a variety of collaborative instances, such as teamwork, peer review, and more.

### ***The Flipped TC Activity Helped Students Come Up with Plans for a Variety of Team Situations***

Rather than approaching problems as black and white situations and prescribing rigid rules, students paid attention to how context can influence the interpretation and the response to a given circumstance. Students tended to perceive common value-based conflicts in a less

destructive way and more as instances where divergences need to be accommodated. In other words, students tended to view conflicts as opportunities to collaboratively renegotiate the team's approach rather than as moments where transgressors needed to be punished.

Furthermore, despite conventional wisdom suggesting that a virtual environment would weaken the effectiveness of pedagogy (C. M. Fuller et al., 2012; R. M. Fuller et al., 2016), the teams in this study seemed to have better documentation and better team planning. The charters were much more thorough and nuanced and documented plans for a variety of important team situations. The biggest change for students working in teams was the shift from meeting in-person to meeting virtually. Students needed to navigate the shift to using Zoom and coordinating all of their exchanges through a virtual platform. Nevertheless, the flipped team charter activity was easily adapted to virtual platforms because the activity was hosted on Google Forms; students could share their screens, look at their peers' answers on one screen, update documents together, and simultaneously participate.

### ***The Flipped TC Activity Takes the Onus off of Instructors To Be Experts in Teamwork***

While teamwork is a key skill for students to learn for academic and workplace success, instructors often lament their lack of expertise and comfort with teaching team skills. For instructors who feel daunted by the prospect of teaching teamwork, team strategies are relegated to be taught by experts who come into the classroom or instructors may leave it up to their students to figure it out through trial and error (Lam & Campbell, 2021; Oakley et al., 2007).

This study can give instructors some hope that they do not need to be experts in teamwork in order to provide guidance to their students on best practices. Specifically, the

flipped charter activity can be easily transported into a variety of classes and team projects. The modules can be assigned all at once or split up into multiple class and/or homework sessions. And the modules provide students with all of the information they need to learn, practice, and apply the strategies on their own with very minimal guidance from the instructor.

Research on teaching teamwork in the classroom shows that there is no significant difference between giving students strategies to learn on their own versus the instructor consistently guiding students on how to use the strategies (Aaron et al., 2014). As long as students are exposed to teamwork best practices and provided with robust materials, they will have some direction for how to plan their collaboration. Teachers can therefore be reassured that they do not need to be the teamwork experts in order to improve their students' collaboration skills.

### ***Limitations of the Study***

There were several limitations associated with this study. First, survey participation was very minimal; therefore, there is insufficient survey data to make strong claims about how individual students perceived the impact of the team charter. Second, this study did not collect data on students in-situ interactions while they were discussing the team charter nor were interactions observed after the completion of the charter to see how students' interactions may have changed throughout the course of the project. While in-situ data would have been important for further triangulating the results between the charter analyses and the survey, it was not possible due to time and space constraints for the researcher to sit in on each team's interactions throughout the two semesters. Future studies could collect this data and further triangulate between team charter analyses, surveys, and team interactions.

The final limitation was the lack of inter-rater reliability for the coding system. While the codes went through multiple iterations of revisions and refinement, there is still potential for bias and misinterpretation of the data. Future studies should incorporate the help of additional raters to validate the codes, data, and results.



## CHAPTER 5: CONCLUSION

In my dissertation, I sought to answer the following research questions:

- 1) How do professionals collaborate across linguistic differences and what strategies do they use with their peers?
- 2) In order to bridge the gap between the workplace and the classroom, what are some ways that we can teach collaborative strategies and best practices in teamwork to our students? In what ways should we update our current approaches to teaching teamwork?
- 3) Compared to the ways we are currently teaching teamwork in the classroom, how effective are the revised approaches in helping students collaborate across linguistic differences?

My dissertation extends the research in teamwork, team writing, and cross-cultural communication. Specifically, my research reevaluates the current pedagogies in team writing and showcases how some of the approaches we are using are indeed beneficial for students while others need to be revised. In addition, my research extends the field of teamwork and team writing by offering alternative perspectives on some of the approaches we have been using for decades, such as the task schedule and team charter. Furthermore, my research takes into account students' current needs when working in diverse teams and provides transportable pedagogies that can be adapted into a variety of classes, projects, and contexts.

In Chapter 1, I reevaluate the ways that the field of professional and technical writing teaches teamwork in the classroom. The current pedagogical approach leads students to eschew the important processes and difficult conversations that are necessary for the cohesion of a team. Students tend to take a “just get it done” approach to team planning so that they can start

working on the project as soon as possible (Poznahovska Feuer, 2020). This “just get it done” approach often eschews communication and planning, often leading to biases related to task and role distribution, inequities in participation, poor communication, and misunderstandings down the road. When students face diversity, such as linguistic differences, on their teams, the inequities and poor planning are often exacerbated. These gaps in student buy-in suggest that we are in need of a pedagogical rehaul.

In Chapter 2, I explored possible strategies that professionals use when they are collaborating with diverse peers, specifically when they are co-writing with peers whom they perceive to have a different proficiency in English. I interviewed practitioners who had experience working in those types of teams and found that they used three key strategies in their collaborations: (1) calibrate genre and reader expectations, (2) establish protocols for reviewing texts, and (3) frame feedback as a learning opportunity. While these strategies reflect what professional and technical communication scholars already know about best practices in teamwork, the interviews provide vivid and concrete examples for how these strategies manifest in the real world. Moreover, the interview results bridge the gap between the classroom and the workplace, affirming the use and the importance of these strategies in the real-world. The interviews illustrate the nuances and context of *how* teams plan in the midst of linguistic diversity. Professionals provide real-world examples and quotes of how they use these strategies in their teams. These examples can be used to convince students of the importance of team planning.

Lastly, the interview results shed light on a commonly faced challenge in teamwork pedagogy—students’ lack of planning—and offer a potential way forward for teaching planning in the classroom. When students are faced with linguistic proficiency differences, they tend to

fixate on the grammar and prescribe any team problems to linguistic issues (Harrison & Peacock, 2010). In an attempt to get past those team challenges, students tend to take a “just get it done” approach and planning falls by the wayside. Meanwhile, professionals invest time and effort upfront to plan for their projects, especially when there are perceived differences in linguistic proficiency. Professionals create timelines, set up support systems, plan out their feedback and revision schedules and expectations, and make updates to their plans throughout the project. What the interviews offer us is another channel for teaching team planning and illustrating how planning plays a role in team cohesion, satisfaction, and productive feedback and revision. The next chapters respond to students’ anxieties about linguistic differences by using it as a “hook” to convince students of the importance of team planning in linguistically diverse team situations.

In Chapter 3, I applied what I learned from the professionals’ interviews to revise the pedagogy commonly used to teach teamwork in the classroom. Specifically, I embarked on overhauling our university’s *Team Communication* workshop, a 60 to 70-minute WAC (writing across the curriculum) workshop offered in discipline-specific courses. The *Team Communication* workshop was adapted from the first few chapters of Wolfe’s (2010) *Team Writing: A Guide to Working in Groups* book, a resource that has seen much use and success in the classroom. While Wolfe’s (2010) book offers planning strategies integral to team cohesion and project quality, it does not provide any guidance on how to navigate linguistic differences on a team. Furthermore, it is often taught by way of a traditional model, where students learn the concepts and strategies in class and are then expected to implement what they learn on their own outside of class.

In Chapter 3, I revised the *Team Communication* workshop from a traditional approach into a flipped model, where students were given a chance to reflect on and individually interact



with the strategies on their own terms. Students spent time unpacking their goals for the project and creating a task schedule based on their individual expectations of the project. Then, students spend class time comparing their team members' different expectations, discussing optimal plans based on their peers' ideas, and creating a shared task schedule that would guide the project. A pilot study of the flipped model showed a significant increase in student uptake of key team strategies. Students self-reported an increased use of task schedules from 36% in the traditional model to 75% in the flipped model; students self-reported an increased use of team charters from 38% in the traditional model to 73% in the flipped model.

The results of Chapter 3 showed that the flipped model improved students' buy-in into discussing project goals and creating timelines for a project. However, students still struggled with team charters. Specifically, students reported on the "awkwardness" of having conversations about conflict and tended to avoid confronting different values and goals. To recap, team charters are an important tool for helping teams unpack goals, values, expectations, assumptions, commitments, and needs for a project. Charters are vital for identifying possible differences on the team and finding ways of either accommodating or managing the differences throughout the project.

In order to address students' challenges with the team charter strategy, in Chapter 4, I created a flipped approach to teaching the strategy. I gave students more time to reflect on and unpack their individual assumptions about teamwork. Then, students compared their team members' different values and assumptions in class; I gave teams more class time to practice compromising on and/or accommodating differences within their team. To evaluate the efficacy of the revised, flipped model, the study in Chapter 4 compared final team charters produced by teams participating in the flipped approach against team charters produced by teams that

participated in a traditional method of learning<sup>9</sup>. After comparing the team charters between the two groups, I found that the flipped method showed much success: Students paid more attention to the differences between team members, took a more nuanced and context-aware approach when discussing possible conflicts, made more specific plans for feedback and revisions, and created a psychologically safe environment for their teams. Chapter 4 revealed that proper scaffolding can be a powerful pedagogical tool in helping students overcome the “awkwardness” and discomfort of discussing different values, goals, and needs.

Instructors and students alike can use the research in this dissertation to improve classroom teamwork. Specifically, instructors can adapt the different strategies and activities into their own lessons and courses. The activities and strategies described in this dissertation are meant to be transportable into a variety of classroom settings and do not rely on instructor’s expertise in teamwork. Furthermore, the hope is that the research in this dissertation can help students not only improve their classroom collaborations, but also prepare them for the team interactions they will have in the workplace.<sup>10</sup>

While this dissertation offers useful teamwork pedagogies, there is still much that remains to be done. First, the samples in the dissertation studies were relatively small and the studies themselves were provisional in nature. The results, therefore, may not be generalizable to all professional and technical communication classrooms. Future research also needs to

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<sup>9</sup> In a traditional method of teaching team charters, students were taught the team charter strategy in class and given a sample and template to help guide their conversations with their teams. In a flipped method of teaching team charters, students were first asked to unpack their assumptions and values at home and then come to class ready to share and deliberate their answers their peers.

<sup>10</sup> To access the modules for your classroom, please use the following hyperlink:  
<https://docs.google.com/document/d/1EVXMa2L8YFZphkr5hcXo1I7oTmDN3RCYt6uWViQP-TU0/edit>

evaluate the impact of the above teamwork pedagogies. Specifically, future research should investigate how the revised pedagogies impact project and team satisfaction among students who had previously reported frustration and resentment when working in linguistically diverse teams. In addition, future research should investigate if the revised pedagogies create more equitable distribution of roles and tasks among linguistically diverse students or if there is an improvement from the inequities students had previously experienced in linguistically diverse teams. One of the limitations of my dissertation research was not studying in-situ interactions of student teams. In an attempt to understand how the revised team pedagogies impact team relationships, future research should observe students' discourse and investigate changes in compromise, negotiation, decision-making, and planning language. Finally, two main goals of teamwork pedagogies are to improve students' classroom teamwork experiences and to prepare students for collaboration in the workplace. In order to continue bridging the gap between the classroom and the workplace, more research needs to be done on the longitudinal effects of teamwork pedagogies. Researchers should investigate which strategies students carry over into their next teams and what classroom-taught strategies help them navigate workplace teams.

Ultimately, despite the limitations of the enclosed studies, this dissertation provides a model for how to conduct classroom research (Brown, 1992; Palincsar & Brown, 1986). The studies in this dissertation arose out of a problem and a need that was initially identified in a professional and technical communication classroom. When the existing scholarship did not provide sufficient resolutions to the problems my students were facing, I examined how experts were solving their team problems in the workplace. The methods used by experts were then adapted back into the classroom, piloted, and iteratively improved as I received more data and student feedback. Following Palincsar & Brown's (1986) models of pedagogical research, the

next step would be to continue developing and improving the pedagogies and expanding them into different classroom contexts. I would like to end this dissertation by providing my reader with the [modules \[hyperlink included\]](#) so that they may be used to help your students in their teamwork endeavors. I would like to invite my reader to be a part of my journey of improving these pedagogical materials and helping students become better collaborators.



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## APPENDIX A: HANDOUT PROVIDED TO STUDENTS AS PART OF THE ORIGINAL WORKSHOP

### Team Communication

#### Five strategies to keep your team and project on task

1. Layer tasks, building the project incrementally
2. Develop and maintain a layered task schedule
3. Document meetings
4. Develop a team charter
5. Have a project manager to keep things on track

#### What is a task layered schedule and why is one key to effective collaboration?

A task schedule is a **highly visible** and **frequently updated** list of **who** should do **what** by **when**. This schedule is developed at the beginning of the project and continually updated as the team encounters new challenges or changing criteria.

A **layered task schedule** builds the project in small steps or layers, with multiple people contributing at review points throughout the project.

Below is an example of a layered task schedule with review points built in.

<i><b>Deadline</b></i>	<i><b>Who</b></i>	<i><b>Task</b></i>
9/04	Bryan	Write topic proposal and bring to group meeting.
9/04	Everyone	Review and discuss topic proposal at in-class meeting.
9/06	Bryan	Turn in revised topic proposal to instructor.
9/09	Chuyen	Draft methods and results for pressure tests
9/09	Everyone	Discuss Chuyen's draft
9/12	Amy	Implement changes to methods and results Add intro and conclusion
9/12	Everyone	Discuss Amy's draft
9/15	Bryan	Implement changes to draft Add abstract
9/15	Chuyen	Write appendices
9/16	Amy	Compile and edit entire draft and submit to instructor

Review  
points

A layered task schedule helps teams by

- Getting insight from multiple people **early** in the project
- Holding team members **accountable**
- Preventing last minute rushes to complete the project
- Forcing the team to confront different understandings of the project early
- Allowing team members to develop new skills with the knowledge others will "have their back"



## **Sample Team Charter**

### **Broad Team Goals:**

1. Clearly communicate the "bottom line" meaning of our results throughout the report.
2. Impress the instructor with the amount of effort we have put into collecting and analyzing our data.

### **Measurable Team Goals:**

1. Meet all 6 of the evaluation criteria listed on the assignment sheet.
2. Meet or beat all deadlines.
3. Obtain data from at least 15 users.
4. Follow all 8 guidelines for tables and figures listed in instructors' PowerPoint presentation.

### **Personal goals:**

1. Aaron – improve management and teamwork skills
2. Bryan – improve writing skills (be less wordy)
3. Yolan – improve writing skills (improve organization and grammar)
4. Mandy—improve PowerPoint and presentation skills

### **Individual Commitment:**

- Aaron, Yolan and Mandy are all willing to put in 100% effort.
- Bryan would like to put in 100% effort but is unsure if his job will allow him to commit that much time. He is willing to accept a slightly lower grade if it turns out he cannot keep up.

### **Other concerns:**

- Yolan is worried that her grammar skills may need a lot of work.
- Mandy has only done one PowerPoint presentation before but really wants to improve and will work hard to learn.
- Aaron has two tests and a project due the week of Oct 15
- Bryan is just worried about his job interfering.

### **Communication Etiquette:**

We will use a Facebook group to post updates, etc. Everyone agreed to check the group at least once per day between 5pm and 10pm and at least twice per day when deadlines are approaching. If a group member is not responding to FB, the project manager will text them with a reminder to check.

**Missed Deadlines:** If a team member is going to miss a deadline, s/he should let the rest of the team know as soon as possible and provide an estimate of when the work will be turned in. This makes it easier on everyone else. If someone misses a deadline...

1. The project manager will send a "gentle reminder" text and email (for documentation purposes), requesting the work within 24 hrs.

2. If that team member does not respond within 24 hours, the project manager will email the instructor to notify him about the problem
3. If there is some extenuating circumstance (ex: personal emergency), the project manager will contact the rest of the team for input on how to proceed.
4. If a missed deadline has a major impact on the group, that person's contribution will be marked down.

**Conflict Resolution:**

If we experience conflict that is not resolved after 30 minutes of respectful discussion of the points, we will present both sides to the instructor and ask him to decide.

**Unacceptable Work:**

If a team member turns in work that is clearly unacceptable (ex: leaves out important information; has major errors; does not meet the assignment criteria; clearly does not meet the team goals of emphasizing the bottom line throughout), other team members should report their concerns to the project manager. The project manager will then contact that team member with a list of concerns and suggest a deadline (usually 48 hours) for when a revised copy of the work is due. If that team member is confused about why the work is unacceptable, they should contact another team member, the instructor, or the writing center for assistance and email the project manager explaining their progress on seeking assistance for the problem. We want to note that there is no shame in seeking outside assistance!

## SAMPLE MEETING MINUTES

### Which Version is most appropriate for a project team?

#### Version 1

**From:** Jason

**To:** Team

**Re:** Team meeting – Monday, 3/3/03

**Present:** Susan, Jeff, Karen, Jason

Karen started us off by showing us a website about oil tanker transportation. We looked at that for five minutes and then Jason suggested we review the draft Jeff prepared. Jason noted some incomplete sentences. Susan also noticed some minor grammatical errors. Karen suggested moving the information on oil transportation closer to the beginning. Jason agreed. Susan and Jeff also thought this was a good idea, but felt jumping right in to the details on transportation would be too abrupt. The others agreed that the current introduction should remain, but Karen thought that it should be minimized since our audience would already know this information. Jeff liked the current introduction because it has emotional appeal and would catch our audience's attention. Jason and Susan weren't sure which version would be best. Karen suggested that we prepare two different versions and ask the instructor which one would be best of our audience. Jason volunteered to set up a meeting with the instructor later in the week, but Jeff and Karen didn't have copies of their schedules with them. Everyone on the team will email Jason tonight with a copy of their schedule. Karen volunteered to write up a revised draft and email it out to the team by Wed. night. Everybody will read this draft and show up on Thursday with comments.

Jeff suggested that the team begin working on the next section of the proposal. Susan, Karen and Jason thought that we needed to include information on costs. Jeff thought that we should look at SPCC regulations next, but agreed that costs were also a high priority. Susan's uncle works for Texaco and can provide us with some information on costs. Jason volunteered to draft a section on costs by next Tuesday. Jeff and Susan both have a calculus test on Wed. and can't work much on the project until then. We set up our next team meeting for Thursday at 1:00.

## SAMPLE MEETING MINUTES (CONTINUED)

### Version 2

**From:** Jason

**To:** Team

**Re:** Team meeting – Monday, 3/3/03

**Present:** Susan, Jeff, Karen, Jason

#### **To Do:**

- Everyone: Email Jason tonight with your schedule for Friday and Monday
- Karen: implement the changes the team made on the research review. Email revised draft to team by Wed.
- Jason: set up meeting with instructor for Friday or Monday.
- Susan: draft a section on costs by next Tuesday.
- Everyone: Read the draft Karen emails us and show up on Thursday with comments.

**Dates:** Next team meeting on Thurs. 3/7 at 1:00.

#### **Decisions:**

##### **1. Revisions to research review:**

We spent most of the meeting discussing Jeff's draft. We decided to

(1) move the information on oil transportation closer to the beginning

(2) prepare two different versions of the introductory section—one with the current emotional introduction on the environmental impacts of oil spills and one with the more minimized introduction that doesn't repeat info our audience already knows. We will ask the instructor to decide which works better for our audience.

(3) make grammatical corrections, esp. fixing incomplete sentences.

Karen will make the changes the team suggested and email out a revised version by Wed. night. We should all read it and come in on Thursday with comments.

##### **2. Meeting with the instructor**

Jason will arrange a meeting w/ instructor to discuss the two drafts. We all need to email him tonight with times we are available.

##### **3. Costs:**

We decided that the next step is to estimate the costs of modifying the oil tankers. Susan will research this information and draft a section on costs by next Tuesday.

##### **4. EPA website**

Karen found some good information about oil transportation on the EPA website. The url is:

**Next meeting (3/7):** Discuss Karen's revisions to research review; Verify meeting time with instructor; Discuss costs section if time.

## SAMPLE MEETING MINUTES (CONTINUED)

### Version 3

**From:** Jason

**To:** Team

**Re:** Team meeting – Monday, 3/3/03

**Present:** Susan, Jeff, Karen, Jason

The meeting was called to order by Karen at 1:05.

1. Karen showed us a website with good information. The url is <http://www.epa.gov/oilspill/>
2. The group discussed Jeff's draft. Jason and Susan noted some grammatical errors. Karen thought the information on the environmental impact of oil spills should be minimized. Jeff objected, stating that the current introduction provided emotional appeal and would grab the reader's attention.
3. Karen moved that we prepare two versions of the introduction section and volunteered to complete this task by Wed. night. The motion was agreed to by the rest of the group.
4. Jason moved that the group set up a meeting with the instructor and volunteered for this task. This motion was agreed to by the rest of the group. Everyone needs to email Jason with their schedule tonight.
5. Jeff moved that we work on the costs section next. Susan informed the group that her uncle works for Texaco. Susan said that she will find out information about costs from him and draft a costs section by next Tuesday. This motion carried unanimously.
6. Our next team meeting is on Thursday at 1:00

The meeting adjourned at 1:50

## **PROJECT MANAGER DUTIES**

- Maintain and update task schedule
- Create and disseminate meeting minutes & agenda
- Email reminders about upcoming and missed deadlines
- Contact professor (or other source) if team experiences major problem

## **IF YOU NEED TO HAVE A DIFFICULT CONVERSATION....**

1. Take a deep breath and eliminate the temptation to make an emotional or personal attack
2. Remind the team of shared goals and criteria
  - Making sure you fulfil all of the assignment criteria
  - Ensuring a good learning experience
  - Meeting the client's needs
  - Having a high quality project
  - Using everyone's time efficiently
3. Point out what is going right as well as what is going wrong
4. Offer specific solutions with clear procedures
  - Formal brainstorming followed by systematic evaluation of pros and cons
  - Make list of information needed, assign tasks, meet again
  - Assign early deadlines and multiple review points; document these in the task schedule
  - (Agree as a group to seek out and abide by an outside opinion)

## **GET ADDITIONAL HELP WITH TEAMWORK AT THE GCC**

- Sign up for Part II of this workshop. See the GCC schedule for more information:  
<http://www.cmu.edu/gcc/workshops/>
- Sign up for a GCC Team session with our special teamwork consultant:  
<https://www.cmu.edu/gcc/appointment/index.html>

## How do we manage the review process?

1. Assign early deadlines
2. Designate reviewers and time to make revisions on the task schedule
3. Decide if the review will use direct revision or feedback

**Direct revision:** Reviewer uses track changes and makes changes directly to the document. Others can approve, reject, or discuss the changes.

- Advantages: quick and direct; very good for making small changes
- Disadvantages: hard for multiple people to give comments

**Feedback:** Reviewer uses comments to suggest changes. The original writer uses this feedback to implement changes

- Advantages: multiple people can give feedback; good for talking about major changes to the direction or vision of the document
- Disadvantages: longer turn-around time

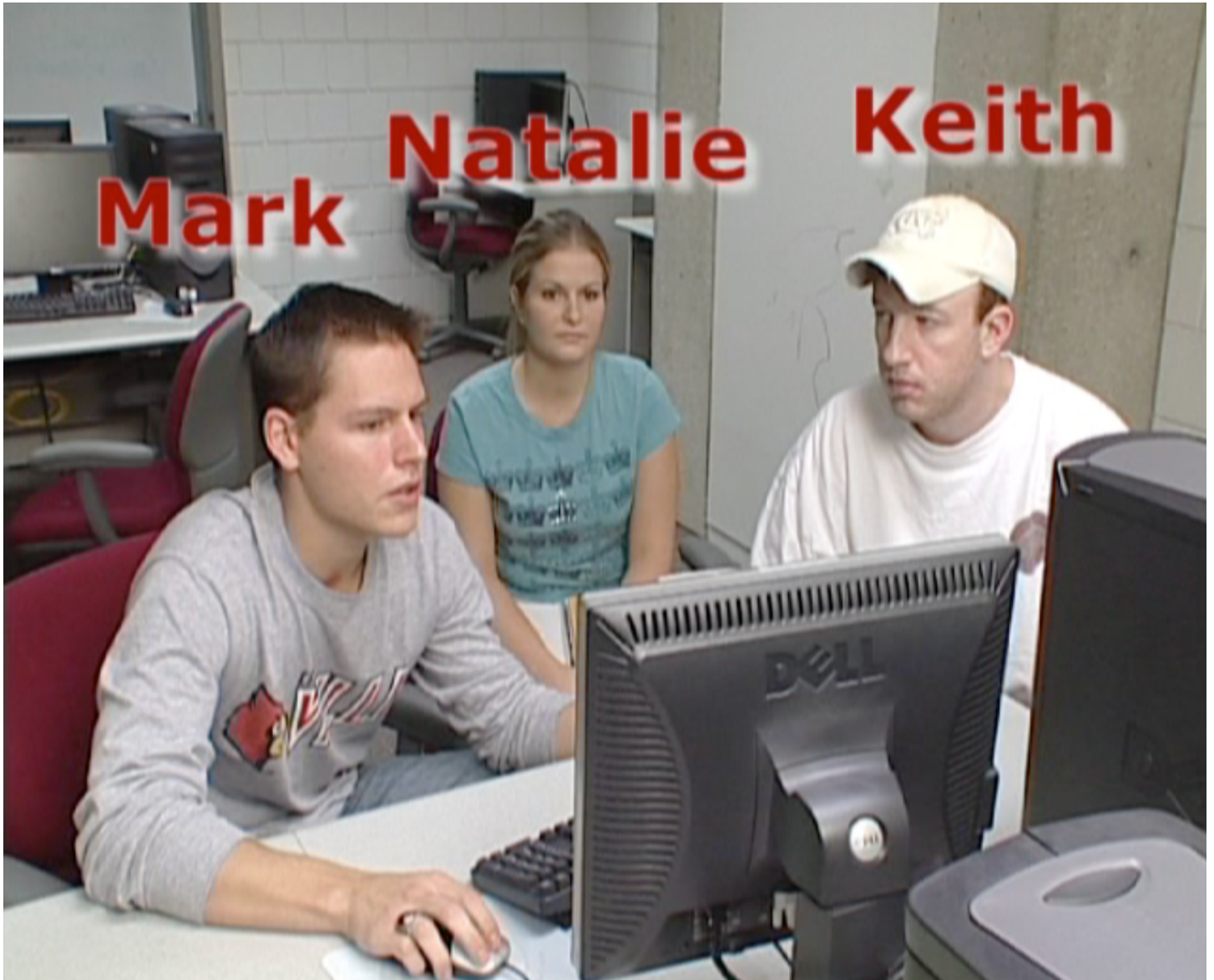
4. Use the checklist below to guide your feedback

## CHECKLIST FOR REVISING A DOCUMENT

1. Reread project requirements and goals
2. Begin with praise
3. Suggest (or add) additional material
4. Note (or revise) inaccurate or misleading material
5. Suggest (or implement) changes to argument or organization.
  - Does the document answer the readers' questions?
  - Is the bottom line emphasized so the reader will find it?
  - Do figures make a clear argument?
  - Is all of the information where the readers expect it?
6. If you have major changes to suggest, try to ground your feedback in something external to yourself such as the project guidelines, grading rubric, or sample documents.

APPENDIX B: TRANSCRIPTS OF TEAM VIDEO SCENARIOS FROM THE ORIGINAL  
WORKSHOP

**Video Scenario 1 of Dominating Face to Face Collaboration**





### **Video Scenario 1 Transcript**

WOMAN: Mark, Natalie, and Keith are biology students working on a proposal to streamline the application process for medical school.

MARK: I think we [INAUDIBLE] this section.

KEITH: Are you-- don't-- don't worry about the little things. Just--

MARK: Well, at this point, instead of going through all the--

KEITH: Just put it right there.

MARK: Yeah. Instead of going through revising--

NATALIE: Rewording everything.

MARK: Yeah. We'll write everything, and then revise.

NATALIE: OK. Right.

KEITH: The thing is you already had it written. You're just redoing it now.

MARK: Yeah, we have it written. We're starting with the recommendations [INAUDIBLE] stuff. Well, it's not all there.

KEITH: Typo there. Right. Up. There. All we have to do is just fit what they're trying to say, and then we'll move on to the next thing.

MARK: How about we compare?

KEITH: Just most schools-- look, this says number two.

MARK: What's the reference for this?

KEITH: [INAUDIBLE]. Unless this is our number two. Which one [INAUDIBLE]?

MARK: That's number six.

KEITH: Well, that'll provide a lot of dialogue, but whatever. We're all--

NATALIE: Why don't you just say [INAUDIBLE] and the MCAT consists of these things? And then at the bottom say that they differ in the individual perceptions of physics.

KEITH: That's what we're saying.

NATALIE: Oh. OK.

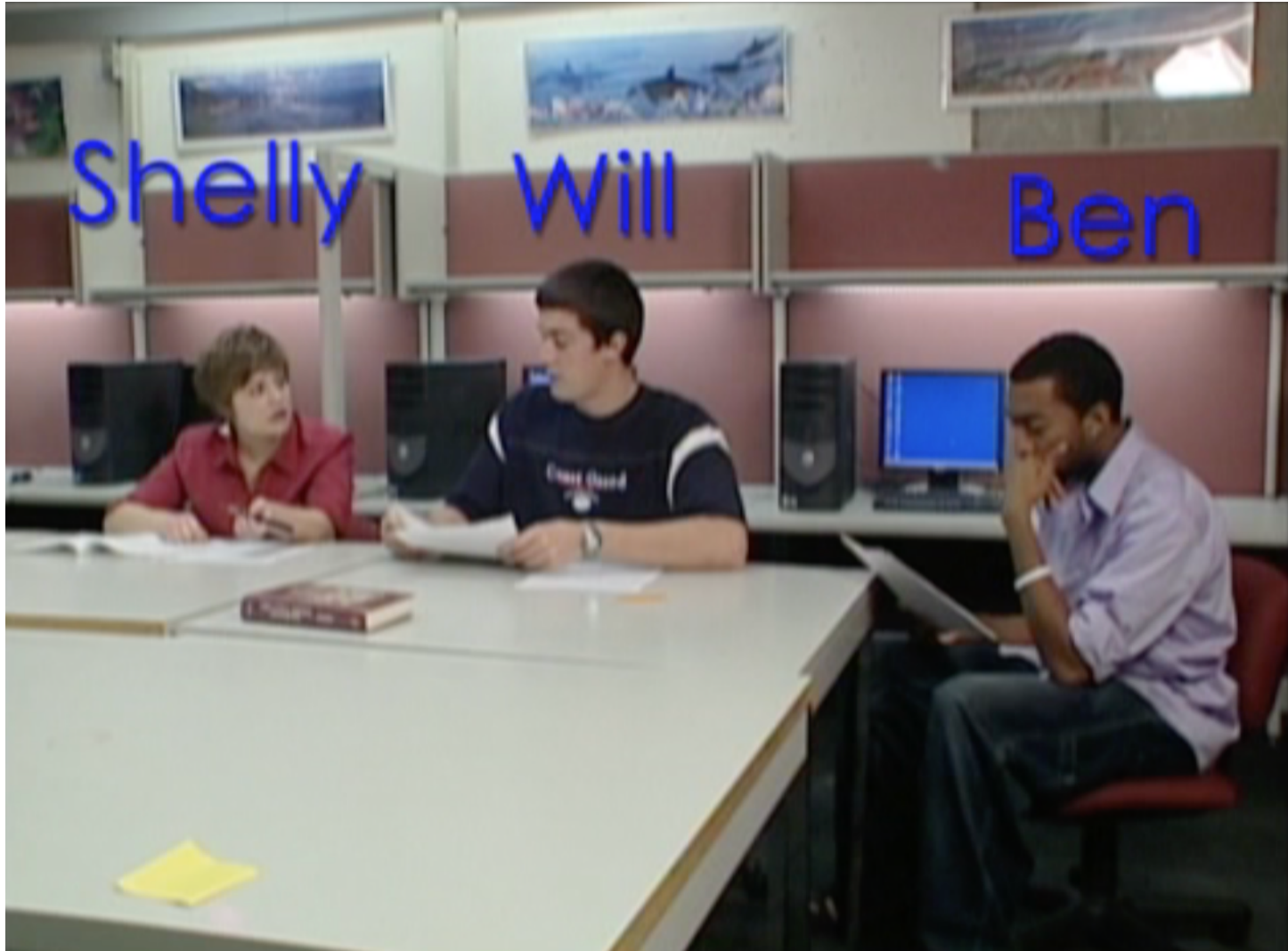
KEITH: The [INAUDIBLE] and the MCAT. That's covered. They both contained-- you can say they now. They both consist of-- I don't even know if this section is important. They both consist of--

NATALIE: The following sections.

MARK: Similar sections.

KEITH: Wow. These sections-- the following sections-- whatever. I don't know.

## Video Scenario 2 of Divided Collaboration



### Video Scenario 2 Transcript

WOMAN: Shelly, Will, and Ben are engineering students working to promote alternative energy sources. The first day shows the group at the midpoint of the project, the second shows them near the end.

WILL: So, now what do we do?

SHELLY: Well, have we started the survey?

WILL: It's already done.

SHELLY: Oh, OK. Good. Well, how did it go?

WILL: I actually have the results right here.

SHELLY: Can I see it? Yeah.

WILL: Yeah, go ahead and take a look.

SHELLY: OK.

WILL: As you can see from the data we collected, there's really not much that can be gathered from it. Everyone answered in the same fashion.

SHELLY: OK, well--

WILL: But Ben gave me 11, and I have 15.

SHELLY: Well, maybe we could change some of these questions? When is it even due?

WILL: The thing is, I already turned it in.

SHELLY: OK.

WILL: But we got the questions phrased, worked out all the data and numerical scores, if we need anything for evidence, I've backed up my hard figures. I'm gonna get that to you. Just let me know.

SHELLY: Oh, OK. Well, I was wondering, can I-- can I have a copy of this?

WILL: Oh, yeah. You can just go ahead and keep that one.

SHELLY: I can keep this one?

WILL: Mm-hm.

SHELLY: OK. Well, Ben, do you have a copy of this? Or do you have an extra copy with you?

WILL: I don't have one with me. I can make another copy of one for him later.

SHELLY: So you're gonna make a copy for him, and he can have one.

WILL: Sure thing.

SHELLY: OK. Well, thanks. That'd be good, I think. I was thinking that we should do a slide for each source that we have. Like, you know, two slides for me, and two slides for you, and two slides for you. You know, I was thinking maybe that would be a good idea.

BEN: Maybe we should have a handout, or something?

SHELLY: Yeah. That'd be a good idea. She said that we should have a handout. And I was thinking, do you think that you could do the handout, since he's doing all that PowerPoint stuff?

BEN: Mm-hm.

SHELLY: OK, yeah. That'd be good. That would probably pull things together. If you could just look over this, and [INAUDIBLE], like, if there's any changes, and, you know, like, if we missed something.

WILL: All right.

SHELLY: If there is, like, I can print out five more copies, but like, it doesn't really matter. And if it's something little, like, I can just white out over it, and just write it in.

WILL: All right.

Obtained from:

<https://www.macmillanlearning.com/studentresources/college/collegebridgepage/teamwriting1e/teamwriting1e.html>

## APPENDIX C: SURVEY FROM SPRING 2019 ORIGINAL WORKSHOP

### Start of Block: Default Question Block

Q1 This survey is part of a research study conducted by Maria Poznahovska (PhD Candidate in English and Teamwork Consultant at the GCC) and Dr. Joanna Wolfe (Director of GCC) at Carnegie Mellon University. We at the GCC are currently trying to better understand how students respond to the workshop. We want to see if and what students are picking up on from the workshop and to better understand if there is anything in particular that sticks with students.

Please be assured that there is no right or wrong answer here. We are trying to get an idea of what are some things that students are gravitating towards—if anything at all. We're hoping that the information you provide us today can help us improve the workshop and possibly help future students with their team projects!

### Procedures

This study may consist of **2 parts**. You will first be asked to answer a survey about the Team Communication workshop and your team workflow, which should take **approximately 5-10 minutes**. In the survey, you will be asked to share your andrew id so that we can match up and compare your answers to your team members'. We will ask your instructor to share the list of all student teams with us, so that we know whom to match up together. Your instructor will not know who consented or not.

For the second part of the study, you may be contacted by the research team to share your team's task schedule and charter. Should you be asked to share this document, the researchers will also replace all names and andrew ids with unique identifiers to prevent any breach of

confidentiality. Because you are sharing your andrew ids, there is a potential risk of a breach of confidentiality, but the research team will take every precaution necessary to make sure that does not happen. Should this occur, we will notify the IRB to take the appropriate measures.

The survey data collected by the researchers may be used in publications in the future, but names and identifiers will NOT be revealed in these publications. Your participation in this study is voluntary. Should you decide to opt out of the study, you will be redirected to the end of the survey. Your professor will not know who will or will not participate. Your decision to participate will in no way affect your grade in this class.

### **Participant Requirements**

1) You must be 18 years or older.

### **Risks**

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life. Should you not wish to answer a given question on the survey, you may move on to the next one. There is a potential risk of a breach of confidentiality. The researcher team will take every precaution to make sure this does not happen. Should this occur, the IRB will be notified and the research team will take appropriate measures.

### **Compensation & Cost**

There will be no cost to you if you participate in this study. You will not be compensated for the survey.

### **Benefits**



There may be no personal benefit to the participants but the knowledge received may be of value to humanity. The researchers hope that your participation could help improve team communication strategies for future students.

### **Confidentiality**

Your answers in this survey will be confidential. Upon receiving answers to the survey, the researchers will replace all student names with a unique identifier. Upon receiving any texts from students, the researchers will use a “replace all” function in Microsoft Word to replace all student names/Andrew ids in the documents with a unique identifier.

### **Right to Ask Questions & Contact Information**

If you have any questions about this study, wish to later withdraw or desire additional information, you should feel free to contact Maria Poznahovska, the Principal Investigator, at [mapoznah@andrew.cmu.edu](mailto:mapoznah@andrew.cmu.edu) or Dr. Joanna Wolfe at [jowolfe@cmu.edu](mailto:jowolfe@cmu.edu).

If you have questions pertaining to your rights as a research participant; or to report concerns to this study, you should contact the Office of Research integrity and Compliance at Carnegie Mellon University. Email: [irb-review@andrew.cmu.edu](mailto:irb-review@andrew.cmu.edu). Phone: 412-268-1901 or 412-268-5460.

### **Voluntary Participation**

Your participation in this research is voluntary. You may discontinue participation at any time during the research activity.

-----

Q2 I am 18 years or older.

- ☐ Yes (1)
- ☐ No (2)

*Skip To: End of Survey If I am 18 years or older. = No*

Q4 I have read and understand the information above.

- ☐ Yes (1)
- ☐ No (2)

*Skip To: End of Survey If I have read and understand the information above. = No*

Q5 I want to participate in this research and continue to the survey.

- ☐ Yes (1)
- ☐ No (2)

*Skip To: End of Survey If I want to participate in this research and continue to the survey. = No*

Q26 Please provide your Andrew Id in the space below: (In order to collect the task schedule and team charter, we need your permission to share your team documents. If you consent, please provide your Andrew Id below. You may then be contacted by a researcher via email to gather your team texts.)

Please note that upon gathering the data, the researchers will replace your Andrew Id with a unique identifier.

---

**End of Block: Default Question Block**

---

**Start of Block: Please answer the following questions about your team process.**

Q6 How much did your team plan/schedule the project work before starting it?

- ☐ Planned a lot (made a schedule of tasks for team members) (1)
  - ☐ Some pre-planning (discussed or roughly outlined when tasks would need to be done when) (2)
  - ☐ Planned during project (started working, some discussion of due dates along the way) (3)
  - ☐ Little or no planning (just worked on the project itself) (4)
- 

Q7 How would you describe your team's process throughout your project?

- ☐ Far above average (1)
  - ☐ Somewhat above average (2)
  - ☐ Average (3)
  - ☐ Somewhat below average (4)
  - ☐ Far below average (5)
- 

Q8 Did your team do the work together or separately?

- ☐ We worked on most of it together as a team (1)
  - ☐ We did more of the project together than separately (2)
  - ☐ We did more of the project separately than together (3)
  - ☐ We did most of the work separately (4)
  - ☐ Some members worked together and some separately (5)
-

Q9 Reasons the work was organized this way (check all that apply)

- ☐ Preferences (1)
  - ☐ Schedules (2)
  - ☐ Nature of the work (3)
  - ☐ Expertise of members (4)
  - ☐ Time pressure (5)
  - ☐ Don't know or didn't discuss (6)
  - ☐ Other (7) \_\_\_\_\_
- 

Q10 Did team members do roughly similar amounts of work?

- ☐ Yes (1)
  - ☐ No (2)
  - ☐ Not sure (3)
- 

Q13 How much negative disagreement and counterproductive conflict did your team experience?

- ☐ High: frequent or serious negative disagreements in many areas (1)
  - ☐ Moderately high: Some negative, counter-productive disagreements (2)
  - ☐ Moderately low: A few small counter-productive disagreements (3)
  - ☐ Low: Very few or no negative disagreements (4)
-

Q14 What caused the most counterproductive conflict for your team? (check all that apply)

- ☐ Timing and poor planning (1)
  - ☐ No revision plan (2)
  - ☐ Unclear roles (3)
  - ☐ Differences in English proficiency (4)
  - ☐ Personality differences (5)
  - ☐ Unresponsive teammates (6)
  - ☐ No conflicts (7)
  - ☐ Other (8) \_\_\_\_\_
- 

Q12 How would you describe your satisfaction with the collaboration?

- ☐ Extremely satisfied (1)
- ☐ Somewhat satisfied (2)
- ☐ Neither satisfied or dissatisfied (3)
- ☐ Somewhat dissatisfied (4)
- ☐ Extremely dissatisfied (5)

End of Block: Please answer the following questions about your team process.

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Start of Block: Block 2

Q11 Did your team receive additional guidance on collaboration? (check all that apply)

- ☐ Professor's feedback (1)
  - ☐ TA's guidance (2)
  - ☐ Worked with a tutor (3)
  - ☐ Other classmates (4)
  - ☐ Resources outside of CMU (5)
  - ☐ Other (6) \_\_\_\_\_
- 

Q15 What was the most useful piece of advice that you received when working on your team?

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Q16 What do you wish you learned more about in preparation for this team project?

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Q17 What did you use from the Team Communication workshop in your own collaboration? (Or, if you weren't present for the workshop, select what you and your team used in your collaboration.)

(check all that apply)

- ☐ Team Charter (1)
  - ☐ Task Schedule (2)
  - ☐ Meeting Minutes (3)
  - ☐ Project Manager (4)
  - ☐ Layered Workflow (5)
  - ☐ Other (6) \_\_\_\_\_
- 

Q18 If you selected yes to "Team Charter," how effective did you find the strategy to be?

- ☐ Extremely effective (1)
  - ☐ Very effective (2)
  - ☐ Moderately effective (3)
  - ☐ Slightly effective (4)
  - ☐ Not at all effective (5)
- 

Q19 Please the space below to explain why:

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Q20 If you selected yes to "Task Schedule," how effective did you find the strategy to be?

- ☐ Extremely effective (1)
  - ☐ Very effective (2)
  - ☐ Moderately effective (3)
  - ☐ Slightly effective (4)
  - ☐ Not at all effective (5)
- 

Q21 Please use the space below to explain why:

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Q22 How would you rate your proficiency in the English language?

- ☐ Native proficiency (1)
  - ☐ Near native proficiency (2)
  - ☐ Proficient (3)
  - ☐ Somewhat Proficient (4)
  - ☐ Low Proficiency (5)
- 

Q24 Did any of your teammates have a different English proficiency than you?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not sure (3)

*Skip To: Q23 If Did any of your teammates have a different English proficiency than you? = Yes*  
*Skip To: End of Block If Did any of your teammates have a different English proficiency than you? = No*



*Skip To: End of Block If Did any of your teammates have a different English proficiency than you? = Not sure*

Q23 Did the difference in proficiency affect the teamwork in any way?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not sure (3)
- 

Q25 Please use the space below to explain:

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**End of Block: Block 2**

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**Start of Block: Block 3**

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## APPENDIX D: UNPRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP

**Read the following scenario of unproductive conflict. As you read it, pay attention to the problems that you are noticing on this team and be ready to discuss them in the questions that follow.**

Rajit, Lauren and Michael were really excited to get started on a project for their engineering class. The following is their conversation during their first meeting:

**Michael:** *"Okay, so we need to submit a proposal for this project in two weeks. Why don't I work on the intro? Rajit, you write the solution. And Lauren, you can do the conclusion. How does that sound?"*

**Lauren:** *"Sounds good to me."*

**Rajit [a little anxious]:** *"That works. But, I might need some feedback on my draft. Sometimes, I can make grammatical mistakes."*

**Lauren:** *"That's fine. Just email it to us before the deadline and we'll edit it."*

A day before the proposal deadline, Rajit sends an email to his teammates asking them to review his part. The following day, the group gets together to finalize the proposal. The following conversation ensues:

**Lauren:** *"Hey Rajit, can you look over the final proposal, make sure everything's good? We only have an hour before we need to email it to the professor."*

**Rajit:** *"Sure!...[reads over his part of the document]...Hey guys, so I'm looking at the proposal here and, umm...did you completely rewrite my section?"*

**Lauren:** *"Yeah...you said you wanted us to edit it."*

**Michael:** *"There were some grammatical mistakes, so we had to rephrase it."*

**Rajit:** *"But, everything is completely rewritten. I spent a long time writing that and all of the main points are completely gone. The process makes no sense now and the explanations are completely inaccurate!"*

**Michael:** *"We had to rewrite all that stuff. It didn't fit with the research that Lauren and I did, so we just adapted some of what you said to our sections."*

**Lauren:** *"I didn't think we did that much to your section. We just moved some things around and made it look more like the sample that the professor uploaded."*

**Rajit:** *"What sample? I've written reports like these in my other classes, so I know what it's supposed to look like."*

**Lauren:** *"Sorry, Rajit. We feel kinda bad, but we had no choice. We literally had only a day to fix it."*

**Michael:** *"We only saw your email last night. Just figured it'd be easier if we revised it ourselves."*

***Rajit [frustrated]:*** “*The proposal literally makes no sense now! I wish we figured this out earlier!*”

## APPENDIX E: PRODUCTIVE SCENARIO FROM THE FLIPPED WORKSHOP

**Now read this alternative scenario of the three students. Pay attention to what is different about this interaction.**

Rajit, Lauren and Michael are working together in their engineering class. Before beginning their individual work, the team members met to discuss what the project should look like and how the team would handle feedback and revision. The following was their conversation:

**Michael:** *“Okay, so we need to submit a proposal for this project in two weeks. Why don’t I work on the intro? Rajit, you write the solution. And Lauren, you can do the conclusion. How does that sound?”*

**Rajit:** *“That works! When should I email you my final draft?”*

**Lauren:** *“Hold on. Let’s look at the sample that the professor uploaded to make sure we’ve got everything.”*

**[All look at the sample together.]**

**Rajit:** *“Good call, Lauren. It looks like we will need to submit preliminary research with the proposal.”*

**Michael:** *“Yeah, this is a little more complicated than we thought. We’ll need to do a lot of data collection and user testing before drafting the solution.”*

**Rajit:** *“Why don’t I collect some of the preliminary research? Michael and Lauren, can you do the user testing?”*

**Michael and Lauren:** *“Yeah, that sounds good.”*

**Lauren to Michael:** *“We’ll probably need to talk about how we’re splitting everything up for the user testing.”*

**Michael to everyone:** *“I can send out a timeline for the different tasks and deadlines for everything. What does everyone’s availability look like in the next three weeks?”*

**[Group talks about schedules, deadlines and plans for the project.]**

**Michael:** *“I think we’re all set.”*

**Rajit:** *“Would you guys mind looking over my part before the deadline? I know that sometimes I can make grammatical mistakes.”*

**Lauren:** *“Yeah, that’s a good idea. I know I always mess up formatting. Let’s email our parts to each other a week before the deadline so we can review them and have time to revise.”*

**[Group updates timeline to make room for review and revision. They spend the rest of the meeting discussing ideas for the project.]**

Then, four days before the deadline, the team meets during one of their scheduled review points. The following is their conversation:

**Rajit [looking at his section]:** “Hey guys, thanks again for the feedback. I’m looking at your comments and I see that there were some formatting issues and a few grammatical errors.”

**Lauren:** “Yeah, we had some trouble understanding what you were saying about the process.”

**Rajit:** “Oh, well I just based it on what we talked about during our first meeting. I was trying to say that the process needs X in order to work, but I guess it wasn’t clear.”

**Michael:** “Maybe we should look at the sample again. Remember we looked at it at the beginning of the project?”

**[All three look at the sample together.]**

**Lauren:** “See how the writer first discussed the goal and then outlined how the process helps reach the goal?”

**Rajit:** “Yeah, that makes sense. I talked about the goal, but not until the very end. I can change it to make it more streamlined. Are you guys okay if I revise it and email it you tomorrow morning for review?”

**Michael:** “Sure, that’s fine. The deadline is Friday, so we’ll have a few days to get our comments to you and talk about them if needed.”

## APPENDIX F: GENRE MINI LESSON FROM FLIPPED WORKSHOP

### **Create a Timeline for Your Collaboration.**

Creating a timeline involves identifying the project components and setting early deadlines that allow time for productive conflict. (By contrast, trying to revise or fix projects right before the deadline is the surest way to have negative conflict).

The following steps will help you create a useful project task schedule:

#### **1. Decide on Project Deliverables and "Chunks"**

##### **A. Look at the prompt with your teammates and identify the important deliverables and the tasks you'll need to accomplish to get there.**

Try to uncover as many subtasks as possible. For example, do you need to do research, create a prototype, or collect data before your deliverables are due? If so, set separate and early deadline for these tasks so the group has time to give each other productive feedback before moving on to the next phase.

##### **B. Find *a model* or *sample text* to help your team uncover "hidden" or unclear requirements**

When used alongside prompts, samples serve as a useful **visual representation** of the deliverables. Looking at sample texts can help your team reach a better understanding of what needs to be included in a paper or presentation.

Instructors will often post or distribute samples of final products to show you what should or should not be included in a deliverable. *If your instructor did not provide a sample, you can use one from another class, as long as you and your team agree on which one you'll use as a reference.*

#### **2. Schedule review points and strategic meetings.**

##### **A. Each major deliverable should have at least three dates associated with it:**

- A draft deadline
- A meeting date to discuss revisions in person or a deadline date for submitting feedback or revisions electronically
- A revised draft deadline

Start by setting early deadlines and then adjust these deadlines after you have a chance to review individual teammates' schedules and obligations outside of the project.

**B. Schedule strategic meetings to discuss big picture aspects.** Meetings are important for discussing big picture ideas, addressing and resolving any obstacles, and planning for next steps of a project.

## APPENDIX G: SAMPLE TEAM CHARTER FROM THE FLIPPED WORKSHOP

### Sample Team Charter

#### INDIVIDUAL GOALS AND STRENGTHS

Name	Strengths	Styles	Goals for Project	Potential obstacles
Aarav	Coding, Organizational skills, Leadership	Deadline oriented, socially sensitive, confronts conflict	Improve in CAD; Have a smooth group process	n/a
Ken	Presentations, Physics, Listening to others	People oriented (get along), hates conflict	Do minimum work to get a B on the project	Will be gone 10/15-10/19
Yolan	CAD, statistics, coding	Shy, internal processor, get it right	Improve presentation skills if possible	Weak at writing/grammar

#### TEAM NORMS

This team values each other's time and is dedicated to having high quality work with minimal stress or unproductive conflict. We agree to respect each other by showing up to meetings on time and completing work on schedule. We further agree to listen to each other respectfully and try to learn from one another.

#### COMMUNICATION NORMS

- We will create a Messenger group for all team communication
- We agree to respond to messages within 12 hours of when they were sent. If 12 hours is not enough time, acknowledge that you received the message and state when you will respond.
- We will create a team folder on Google drive where everyone will store the most up-to-date copies of their work. We will use Google formats for files when available (e.g., Google Docs, Google Slides, etc.)

#### TROUBLE-SHOOTING GUIDELINES

##### Meeting attendance and timeliness



Group members are expected to show up on time for meetings. If you are going to be more than 5 minutes late, message the team as soon as you know you will be late and let us know when to expect you.

A team member who misses a meeting or is more than 10 minutes late without notifying the group should both informally apologize in person and follow that up with a formal apology via Messenger. In addition, the team member should (if appropriate) volunteer for an extra task to make up for the inconvenience and be sure to follow through with that task. The apologies and volunteering are important to show our respect for one another.

### **Late work**

Team members are expected to hold themselves accountable to all group deadlines. If you are likely to miss a deadline, you should message the team as early as possible and let everyone know when to expect your work. Missing a deadline by more than 24 hours is a serious inconvenience and should be accompanied by a formal apology sent via Messenger.

### **Poor Quality work**

If a team member knowingly submits incomplete or poor quality work, they should Message the team with a plan for updating their work and an apology for inconveniencing others.

If a team member unknowingly submits poor quality work: We all agree that if we make a mistake or do something wrong, we would like an opportunity to correct it. We agreed to send a private message to the team member with constructive feedback and (if possible) pointers to the relevant sections of the assignment instructions or course materials. All feedback should be kept constructive. The original submitter will update their work within 24 hours, or send a group message stating when they will update it.

### **Conflict Resolution and Stalemates**

If we experience productive, idea-based conflict that is not resolved after 45 minutes of respectful discussion of the points, we will present both sides to the TA or instructor and ask for their input. If we experience conflict with individuals on the team or have unproductive conflict, we will talk with CP, the teamwork expert.

### **Invoking the team charter**

Aarav is very deadline oriented so he agreed to be the main person responsible for checking deadlines and sending messages. However, if Aarav misses something (or if he is the one who is late), the other group members have permission to invoke the charter.

If someone is late for a meeting or misses a deadline, Aarav (or other group member) will send them a group message such as the following:

X: I hope everything is okay. We are in a meeting that started at 3:00. It is now 3:10 and we haven't heard from you. Our charter states that team members should message or text if they are running late. Please let us know that you are okay and when we can expect you.

Alternatively, if you just forgot about the meeting, please see the team charter for steps you can take to maintain group respect and morale. We all want this project to cause as little stress for each other as possible.

If someone unknowingly turns in poor quality work, another group member should send a private message such as the following:

X: Thanks for turning in \_\_\_\_ on time. You have a good start on \_\_\_\_\_, but the assignment instructions say we also need \_\_\_\_\_ and I did not see that in what you included in Box. We agreed in our team charter that we would update incomplete work within 24 hours or let the group know when we can reasonably update it. Do you think you will be able to do that?

**Agreed by**

\_\_\_\_\_

Include name and date

## APPENDIX H: TEMPLATE OF TEAM CHARTER FROM FLIPPED WORKSHOP

### Team Charter Template

Research has shown that new project teams can prevent problems and work better together by discussing some key issues and expectations up front. To maximize benefits, take notes about conclusions your team reaches in each area and “sign off” to indicate your shared understanding about how the team will operate. Note, this charter should be used, revisited and revised throughout the collaboration process.

**As a team, complete this template by discussing the instructions/questions in red text and inserting your own content. See the Sample Team Charter below for examples of content to include. After you have completed each section, delete any remaining red text**

### INDIVIDUAL GOALS AND STRENGTHS

**Complete this section for each team member. It will serve as a quick reminder of what each person brings to the project and their goals.**

Name	Strengths	Styles	Goals for Project	Potential obstacles

### TEAM NORMS

**Discuss each member’s values and expectations for how the team will work together and how members’ interactions will demonstrate these.**

### COMMUNICATION NORMS

- **How will we communicate outside of meetings? (ex: Slack, email, Messenger, other)**
- **What are the expectations for responding? How long should others expect to wait to hear back from you?**
- **Where will we keep shared team documents? (ex: Box, Google Drive, Slack, other)**

- **What file formats should we use?**

## **TROUBLE-SHOOTING GUIDELINES**

### **Meeting attendance and timeliness**

- **What are the expectations for team meeting attendance?**
- **How can a team member who misses a meeting or shows up late minimize the effects on the rest of the team?**

### **Late work**

- **What are the expectations for meeting deadlines?**
- **How can a team member who misses a deadline minimize the effects on the rest of the team?**

### **Poor Quality work**

- **What should a team member who knowingly submits incomplete or error-ridden work do to minimize the effects on the rest of the team?**
- **How should the team proceed if a member unknowingly makes a mistake and submits poor quality work? How do team members prefer that mistakes be brought to their attention?**

### **Conflict Resolution and Stalemates**

- **What conflict resolution strategy will the team use if there is a disagreement about ideas or content that is not easily resolved? Common options include: discuss until consensus is reached; vote; seek an outside opinion.**
- **How should team members proceed if there is a conflict over personalities or problems with an individual group member? (see the syllabus regarding conflict resolution resources)**

### **Invoking the Team Charter**

- **How should we let a teammate know they have violated the team charter (e.g., private message; group message; other)?**
- **Who should initiate this communication (e.g., a project coordinator; anyone in the group who notices)?**

- What should we say to invoke the charter?

**Agreed by**

\_\_\_\_\_

Include name and date

## APPENDIX I: SURVEY FROM THE FLIPPED WORKSHOP

---

### Start of Block: Default Question Block

Q1 This survey is part of a research study conducted by Maria Poznahovska (PhD Candidate in English and Teamwork Consultant at the GCC) and Dr. Joanna Wolfe (Director of GCC) at Carnegie Mellon University. We are currently trying to better understand how students respond to GCC workshops. We want to see if and what students are using from the workshop and to better understand if there is anything in particular that sticks with students.

Please be assured that there is no right or wrong answer here. We are trying to get an idea of what are some things that students are gravitating towards—if anything at all. We're hoping that the information you provide us today can help us improve the workshop and possibly help future students with their team projects!

### Participant Requirements

You must be 18 years or older.

### Risks

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life. Should you not wish to answer a given question on the survey, you may move on to the next one. There is a potential risk of a breach of confidentiality. The researcher team will take every precaution to make sure this does not happen. Should this occur, the IRB will be notified and the research team will take appropriate measures.

### Compensation & Cost

There will be no cost to you if you participate in this study. However, **for every student's response, we will donate \$2 to Engineers Without Borders. You will also be entered into a drawing for a \$20 Amazon gift card.**

### Benefits

There may be no personal benefit to the participants but the knowledge received may be of value to humanity. The researchers hope that your participation could help improve team communication strategies for future students.

### Confidentiality

Your answers in this survey will be confidential. Upon receiving answers to the survey, the researchers will replace all student names with a unique identifier. Upon receiving any texts

from students, the researchers will use a “replace all” function in Microsoft Word to replace all student names/Andrew ids in the documents with a unique identifier.

### **Right to Ask Questions & Contact Information**

If you have any questions about this study, wish to later withdraw or desire additional information, you should feel free to contact Maria Poznahovska, the Principal Investigator, at mapoznah@andrew.cmu.edu or Dr. Joanna Wolfe at jowolfe@cmu.edu. If you have questions pertaining to your rights as a research participant; or to report concerns to this study, you should contact the Office of Research integrity and Compliance at Carnegie Mellon University. Email: irb-review@andrew.cmu.edu. Phone: 412-268-1901 or 412-268-5460.

### **Voluntary Participation**

Your participation in this study is voluntary. Should you decide to opt out of the study, you will be redirected to the end of the survey. Your professor will not know who will or will not participate. Your decision to participate will in no way affect your grade in this class. You may discontinue participation at any time during the research activity.

-----

Q2 I am 18 years or older. I have read and understand the information above and I want to participate in this research and continue to the survey.

☐ Yes (1)

☐ No (2)

*Skip To: End of Survey If I am 18 years or older. I have read and understand the information above and I want to participat... = No*

**End of Block: Default Question Block**

---

**Start of Block: Please answer the following questions about your team planning.**

Q53 What class are you in (please include your course name and professor's name)?

-----

Q6 Relative to other school based team projects, how much planning did your team do before starting this project?

- ☐ Far more than average (21)
  - ☐ Somewhat more than average (22)
  - ☐ Average (23)
  - ☐ Somewhat less than average (24)
  - ☐ Far less than average (25)
- 

Q58 What were the strengths and weaknesses in your team's planning?

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End of Block: Please answer the following questions about your team planning.

---

Start of Block: Please answer the following questions about your team's feedback process.

Q64 Relative to other school-based team projects, how much did your team offer feedback on each other's work?

- ☐ Far more than average (47)
  - ☐ Somewhat more than average (49)
  - ☐ Average (50)
  - ☐ Somewhat less than average (51)
  - ☐ Far less than average (53)
-



Q65 How comfortable were you giving feedback to your peers on the work that they did?

- ☐ Extremely comfortable (18)
- ☐ Somewhat comfortable (19)
- ☐ Neither comfortable nor uncomfortable (20)
- ☐ Somewhat uncomfortable (21)
- ☐ Extremely uncomfortable (22)

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Page Break

End of Block: Please answer the following questions about your team's feedback process.

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Start of Block: Please answer the following questions about team strategies:

Q65 Were you present the day the GCC led the Team Communication Workshop in your class?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Don't remember (4)
- 

Q66 What team strategies did you use with your team throughout your project? (Select all that apply)

- ☐ Team Charter (1)
- ☐ Task Schedules (2)
- ☐ Layered Workflow (3)
- ☐ Multiple Review and Revision Points (4)
- ☐ Meeting Minutes (6)
- ☐ Project Manager (7)
- ☐ Other (5) \_\_\_\_\_
-

Q18 How useful did you find the team charter strategy to be?

- ☐ Extremely useful (20)
  - ☐ Very useful (21)
  - ☐ Moderately useful (22)
  - ☐ Slightly useful (23)
  - ☐ Not at all useful (24)
  - ☐ N/A We didn't have a team charter (25)
- 

Q19 Please the space below to describe the strengths and weaknesses of the Team Charter

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Q20 How useful did you find the Task Schedule strategy to be?

- ☐ Extremely useful (20)
  - ☐ Very useful (21)
  - ☐ Moderately useful (22)
  - ☐ Slightly useful (23)
  - ☐ Not at all useful (24)
  - ☐ N/A We didn't have a task schedule (25)
- 

Q21 Please use the space below to describe the strengths and weaknesses of the Task Schedule

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Page Break

End of Block: Please answer the following questions about team strategies:

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Start of Block: Please answer the following questions about your satisfaction.

Q12 How would you describe your satisfaction with the project outcome?

- ☐ Extremely satisfied (1)
  - ☐ Somewhat satisfied (2)
  - ☐ Neither satisfied or dissatisfied (3)
  - ☐ Somewhat dissatisfied (4)
  - ☐ Extremely dissatisfied (5)
  - ☐ N/A Our project is not yet finished (6)
- 

Q58 How would you describe your satisfaction with the team process of collaborating?

- ☐ Extremely satisfied (20)
  - ☐ Somewhat satisfied (21)
  - ☐ Neither satisfied nor dissatisfied (22)
  - ☐ Somewhat dissatisfied (23)
  - ☐ Extremely dissatisfied (24)
- 

Q68 Use the space below to offer any additional comments or feedback on your collaboration and/or workshop:

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End of Block: Please answer the following questions about your satisfaction.

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Start of Block: Block 4

Q55 What campus are you located in? Please select from the dropdown menu below.

▼ Pittsburgh (1) ... Other (5)

Q60 In comparison to my teammates, my English proficiency is:

- ☐ Native (1)
- ☐ High proficiency (2)
- ☐ Moderate proficiency (3)
- ☐ Limited proficiency (4)
- ☐ Little to no proficiency (5)
- ☐ Not sure (6)

Q62 The gender I identify with is:

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other: (3) \_\_\_\_\_
- ☐ Prefer not to say (4)

Q26 Please provide your Andrew ID in the space below so that we can match this survey with the one you took earlier in the semester and enter you into the drawing for a \$20 Amazon gift card: (Please note that upon gathering the data, the researchers will replace your Andrew ID with a unique identifier.)

\_\_\_\_\_

Q61 If you have time, please upload your Task Schedule using the link below.

Q62 Please upload your Team Charter using the link below. Thank you!

**End of Block: Block 4**

## APPENDIX J: FALL 2020 SURVEY OF STUDENT SATISFACTION AFTER FLIPPED TEAM CHARTER WORKSHOP

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### Start of Block: Default Question Block

Q1 This survey is part of a research study conducted by Maria Poznahovska Feuer (PhD Candidate in English) at Carnegie Mellon University. We are currently trying to better understand how students respond to Team Communication workshops. We want to see if and what students are using from the workshop and to better understand if there is anything in particular that sticks with students. Please be assured that **there is no right or wrong answer here**. We are trying to get an idea of what are some things that students are gravitating towards—if anything at all. We're hoping that the information you provide us today can help us improve the workshop and possibly help future students with their team projects! **Participant Requirements** You must be 18 years or older.

#### **Risks**

The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life. Should you not wish to answer a given question on the survey, you may move on to the next one. There is a potential risk of a breach of confidentiality. The researcher team will take every precaution to make sure this does not happen. Should this occur, the IRB will be notified and the research team will take appropriate measures. **Compensation & Cost**

There will be no cost to you if you participate in this study. However, **for every student's response, we will donate \$2 to local food banks. You will also be entered into a drawing for a \$50 Amazon gift card.** **Benefits**

There may be no personal benefit to the participants but the knowledge received may be of value to humanity. The researcher hopes that your participation could help improve team communication strategies for future students. **Confidentiality**

Your answers in this survey will be confidential. Upon receiving answers to the survey, the researcher will replace all student names with a unique identifier. Upon receiving any texts from students, the researchers will use a “replace all” function in Microsoft Word to replace all student names/Andrew ids in the documents with a unique identifier. **Right to Ask Questions &**

#### **Contact Information**

If you have any questions about this study, wish to later withdraw or desire additional information, you should feel free to contact Maria Poznahovska Feuer, the Principal Investigator, at mapoznah@andrew.cmu.edu. If you have questions pertaining to your rights as a research participant; or to report concerns to this study, you should contact the Office of Research integrity and Compliance at Carnegie Mellon University. Email: irb-review@andrew.cmu.edu. Phone: 412-268-1901 or 412-268-5460. **Voluntary Participation**

Your participation in this study is voluntary. Should you decide to opt out of the study, you will

be redirected to the end of the survey. Your professor will not know who will or will not participate. Your decision to participate will in no way affect your grade in this class. You may discontinue participation at any time during the research activity.

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Q2 I am 18 years or older. I have read and understand the information above and I want to participate in this research and continue to the survey.

☐ Yes (1)

☐ No (2)

*Skip To: End of Survey If I am 18 years or older. I have read and understand the information above and I want to participat... = No*

**End of Block: Default Question Block**

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**Start of Block: Please answer the following questions about your team planning.**

Q53 What class are you in (please include your course name and professor's name)?

\_\_\_\_\_

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Q6 Relative to other school-based team projects, how much planning did your current team do before starting this project?

☐ Far above average (40)

☐ Somewhat above average (41)

☐ Average (42)

☐ Somewhat below average (43)

☐ Far below average (44)

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Q58 What were the strengths and weaknesses in your current team's planning?

\_\_\_\_\_

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End of Block: Please answer the following questions about your team planning.

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Start of Block: Please answer the following questions about your team's feedback process.

Q64 Relative to other school-based team projects, how much did your team offer feedback on each other's work?

- ☐ Far above average (75)
- ☐ Somewhat above average (76)
- ☐ Average (77)
- ☐ Somewhat below average (78)
- ☐ Far below average (79)

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Q65 How comfortable were you giving feedback to your peers on the work that they did?

- ☐ Extremely comfortable (23)
- ☐ Somewhat comfortable (24)
- ☐ Neither comfortable nor uncomfortable (25)
- ☐ Somewhat uncomfortable (26)
- ☐ Extremely uncomfortable (27)

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Q70 Please use the space below to explain why:

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Page Break

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End of Block: Please answer the following questions about your team's feedback process.

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Start of Block: Please answer the following questions about team strategies:

Q66 What team strategies did you use with your team throughout your project? (Select all that apply)

- ☐ Team Charter (1)
  - ☐ Task Schedules (2)
  - ☐ Layered Workflow (3)
  - ☐ Multiple Feedback and Revision Points (4)
  - ☐ Meeting Minutes (6)
  - ☐ Project Manager (7)
  - ☐ Other (5) \_\_\_\_\_
- 

Q18 The team charter is where you compared answers with your teammates and outlined your goals, preferences and values for teamwork. **How useful did you find the team charter strategy to be?**

- ☐ Extremely useful (20)
  - ☐ Very useful (21)
  - ☐ Moderately useful (22)
  - ☐ Slightly useful (23)
  - ☐ Not at all useful (24)
  - ☐ N/A We didn't have a team charter (25)
-

Q19 Please use the space below to describe the strengths and weaknesses of your team's Team Charter:

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Q20 The task schedule is where you created a schedule for your project based on the assignment description. **How useful did you find the Task Schedule strategy to be?**

- ☐ Extremely useful (20)
- ☐ Very useful (21)
- ☐ Moderately useful (22)
- ☐ Slightly useful (23)
- ☐ Not at all useful (24)
- ☐ N/A We didn't have a task schedule (25)

Q21 Please use the space below to describe the strengths and weaknesses of your team's Task Schedule:

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Page Break



End of Block: Please answer the following questions about team strategies:

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Start of Block: Block 6

Q78 Think about **past team projects**. What were you comfortable speaking about with your team members? (Select all that apply)

- ☐ about ideas (1)
  - ☐ about project requirements (4)
  - ☐ about praise on your peers work (5)
  - ☐ problems with the project (6)
  - ☐ feedback on your peers' work (7)
  - ☐ about your values (8)
  - ☐ about your goals (9)
  - ☐ about disagreements with a team member (10)
  - ☐ when a team member wronged you (11)
  - ☐ None of the above (13)
  - ☐ Other [write in space provided] (12)
-

Q83 Now, think about your current team project. What were you comfortable speaking about with your team members? (Select all that apply)

- ☐ about ideas (1)
  - ☐ about project requirements (4)
  - ☐ about praise on your peers work (5)
  - ☐ problems with the project (6)
  - ☐ feedback on your peers' work (7)
  - ☐ about your values (8)
  - ☐ about your goals (9)
  - ☐ about disagreements with a team member (10)
  - ☐ when a team member wronged you (11)
  - ☐ None of the above (13)
  - ☐ Other [write in space provided] (12)
- 

-----

Q84 To what extent did the Team Communication Modules make you more comfortable to speak up to your team members?

- ☐ Extremely likely (18)
  - ☐ Somewhat likely (19)
  - ☐ Neither likely nor unlikely (20)
  - ☐ Somewhat unlikely (21)
  - ☐ Extremely unlikely (22)
-

Q79 In comparison to other group projects, to what extent did you feel that your current teammates valued your ideas?

- ☐ Far above average (25)
  - ☐ Somewhat above average (26)
  - ☐ Average (27)
  - ☐ Somewhat below average (28)
  - ☐ Far below average (29)
- 

Q80 In comparison to other group projects, to what extent did you feel that your current teammates valued your goals for the project?

- ☐ Far above average (23)
  - ☐ Somewhat above average (24)
  - ☐ Average (25)
  - ☐ Somewhat below average (26)
  - ☐ Far below average (27)
- 

Q81 In comparison to other group projects, to what extent did you feel that your current teammates respected your values around timeliness and deadlines?

- ☐ Far above average (23)
  - ☐ Somewhat above average (24)
  - ☐ Average (25)
  - ☐ Somewhat below average (26)
  - ☐ Far below average (27)
-



Q82 In comparison to other group projects, to what extent did you feel that your current teammates gave you feedback in a way that you preferred?

- ☐ Far above average (24)
- ☐ Somewhat above average (25)
- ☐ Average (26)
- ☐ Somewhat below average (27)
- ☐ Far below average (28)

End of Block: Block 6

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Start of Block: Please answer the following questions about your satisfaction.

Q12 How would you describe your satisfaction with the project outcome?

- ☐ Extremely satisfied (1)
  - ☐ Somewhat satisfied (2)
  - ☐ Neither satisfied or dissatisfied (3)
  - ☐ Somewhat dissatisfied (4)
  - ☐ Extremely dissatisfied (5)
  - ☐ N/A Our project is not yet finished (6)
- 

Q58 How would you describe your satisfaction with the team process of collaborating?

- ☐ Extremely satisfied (20)
  - ☐ Somewhat satisfied (21)
  - ☐ Neither satisfied nor dissatisfied (22)
  - ☐ Somewhat dissatisfied (23)
  - ☐ Extremely dissatisfied (24)
-

Q77 How useful did you find the Team Communication Modules for your group project to be?

- ☐ Extremely useful (19)
  - ☐ Very useful (20)
  - ☐ Moderately useful (21)
  - ☐ Slightly useful (22)
  - ☐ Not at all useful (23)
- 

Q68 Please use the space below to offer any additional feedback or comments on **Modules** or **your teamwork**. Any additional information would be extremely valuable in improving how we teach teamwork to students. Thank you!

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End of Block: Please answer the following questions about your satisfaction.

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Start of Block: Block 4

Q60 In comparison to my teammates, my English proficiency is:

- ☐ Native (1)
  - ☐ High proficiency (2)
  - ☐ Moderate proficiency (3)
  - ☐ Limited proficiency (4)
  - ☐ Little to no proficiency (5)
  - ☐ Not sure (6)
-

Q62 (Optional) The gender I identify with is:

- ☐ Male (1)
- ☐ Female (2)
- ☐ Other: (3) \_\_\_\_\_
- ☐ Decline to answer (4)

-----

Q26 Please provide your Andrew ID in the space below so that you may be entered into the drawing for a \$50 Amazon gift card: (Please note that upon gathering the data, the researchers will replace your Andrew ID with a unique identifier.)

\_\_\_\_\_

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Q61 If you have time, please upload your team's Task Schedule using the link below.

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Q62 If you have time, please upload your team's Team Charter using the link below. Thank you!

**End of Block: Block 4**

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