



Technology Evaluation Report: CATME

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Note: This report summarizes outcomes of a specific UBC pilot. Findings do not reflect broader or official UBC opinions about the learning technology evaluated.

Executive Summary

This evaluation sought feedback from UBC users piloting CATME (Comprehensive Assessment of Team Member Effectiveness) Peer Evaluation, a tool for assessing group dynamics. Five instructors, one teaching assistant (TA), and 140 students who had used CATME for peer and self-evaluation were consulted between September 2017 and February 2018. The three courses in the pilot included second- and fourth-year offerings in Earth, Ocean, and Atmospheric Sciences, Environmental Science, and Pharmaceutical Sciences.

The consultations revealed a positive experience for instructors and the TA, who felt the tool demonstrated pedagogical value for teaching by making it easier for them to grade group work fairly. The CATME interface clearly flagged potential teamwork issues, and the results felt trustworthy to instructors because: 1) CATME's preset peer evaluation questions are backed by research on teamwork and 2) the way students answer the questions (based on specific behaviours observed rather than general opinions) seemed likely to encourage more objective responses. The only real drawback noted by instructional teams related to setting up class lists in the tool initially.

Students overall were more divided, both between and within courses, in whether they perceived pedagogical value in CATME for learning or not. Some students thought CATME provided more and welcome guidance in how to understand teamwork and evaluate peers, which contributed to an increased confidence in the outcome (similar to the instructional teams). Additionally, students who received evaluation results back at the end of the process reported slightly more benefit to understanding their own strengths and weaknesses as group members.

In contrast, other students felt the CATME format got in the way of effective and accurate peer evaluations. Some reported the evaluation felt too long and repetitive in the types of questions asked, a situation not helped by CATME's sometimes confusing interface for evaluating. Some also struggled to place their peers into the rigid behavioural categories, answer generic evaluation questions that didn't pertain to their particular group experience, or find a way to incorporate group work that was not specifically asked about, e.g., online collaboration.

Based on this pilot's outcomes, the recommendations for how CATME could best be pedagogically and technically implemented at UBC include:

1. Using CATME evaluations for more involved and in-person group work, i.e., only in situations that have included substantial ongoing group work that includes a strong offline component
2. Explaining to students how CATME works and how to work with it so students know what differentiates CATME from other peer evaluation tools (that it is research-based to improve objectivity) and how to deal with outliers (scenarios that did not happen or students with variable or split behaviours)
3. Always including an open-ended comment box in CATME evaluations so students can express themselves outside the strict confines of the multiple-choice responses at the end of the evaluation
4. Releasing CATME evaluation results directly to students, so students can see how their peers evaluated them, regardless of whether an evaluation is conducted for an explicit formative or summative purpose
5. Integrating CATME within the Learning Technology Environment so management of class lists is handled more automatically (though instructors will still need to ensure FIPPA compliancy)

Implementing CATME with these recommendations may help resolve some of the concerns brought forward by instructional teams and students and improve future users' perceptions of the tool's pedagogical value.

Goal

This evaluation sought feedback from UBC instructors, teaching assistants (TAs), and students piloting CATME (Comprehensive Assessment of Team Member Effectiveness), a tool that can be used for assessing group dynamics. Although CATME overall offers several different tools for supporting teamwork, this evaluation focused exclusively on its use as a peer and self-evaluation tool (Peer Evaluation).

In this capacity, instructors set up peer evaluations in CATME by choosing from preset groups of questions that assess particular aspects of working in teams (based on teamwork research). CATME then invites students in the course to evaluate their group using these questions, with a detailed behaviour-based rating scale to guide the responses for each group member (see [Appendix C.1](#) for screenshot). On the instructional side, when evaluations are complete, potentially dysfunctional groups are flagged so instructional teams can see where (and with whom) problems may be happening.

This report will detail the methodology in evaluating the CATME Peer Instruction tool, why instructors chose to use it, the potential pedagogical value identified by people in the pilot, and how the tool could best be pedagogically and technically implemented at UBC.

Methodology

The CATME official pilot ran during the 2017/18 W1 term in three courses, although all instructors had also used CATME in previous terms. Five instructors and one TA were interviewed near the end of W1 term. Each interview consisted of 14 questions (see [Appendix A.1](#)), directly or indirectly addressed during in-person meetings.

Students were asked to respond to online or paper-based surveys at the end of W1 term (for the one 1-term course) or start of W2 term (for the two 2-term courses); 140 in total responded prior to February 2018. At the time of the survey, all students had used CATME once (at the end of W1 term) for peer and self-evaluation of working in groups with 3-6 members. The suggested student survey included 12 questions (see [Appendix A.2](#)), although not all these questions were used in each course.

The types of courses in the official pilot included Earth, Ocean, and Atmospheric Sciences, Environmental Science, and Pharmaceutical Sciences. Summarized use cases for each course are provided below. The primary difference in tool application was that Course 2 had more and shorter group projects and students did not receive the results of their peer evaluations (these were seen only by the instructional team). Each instructor also took a different approach to how CATME would ultimately impact grades.

Course 1	Course 2	Course 3
Students work on year-long projects in groups for this 2-term 4th-year course	Students participate in several different types of group work (discussions, assignments, projects) throughout this 1-term 2nd-year course	Students work extensively in groups throughout the year for this 2-term 4th-year course
3-5 students per group 42 students in course (17% responded to survey)	6 students per group 206 students in course (52% responded to survey)	~4 students per group 27 students in course (93% responded to survey)
Students evaluate themselves and peers and see results	Students evaluate themselves and peers but don't see results	Students evaluate themselves and peers and see results
0% of the student's total course grade is given for completing the evaluation	4% of the student's total course grade is assigned based on completing the evaluation <i>plus</i> the overall peer ratings	2% of the student's total course grade (for W1) is based on completing the evaluation
33% of the student's total course grade (the amount that related to group work) can be affected negatively based on the overall peer ratings		0% effect on total course grade (for W1) from the overall peer ratings (different for W2, where 80% may be affected negatively <i>or</i> positively)

No trace data or classroom data was gathered, although one instructor provided outcomes from using CATME (and UBC's homegrown peer evaluation tool iPeer) in past years.

Findings

Instructor motivations

Grade group work more fairly

Not surprisingly, the primary pedagogical goal of instructors using CATME for this pilot was to grade group work more fairly. *"Because of the way we teach with the group stuff so frequently now"* and how much of an individual student's overall course grade can be based on shared work, instructors needed a way to identify (and possibly prevent) *"social loafing"* and *"freeloaders"*. Ideally, they wanted a tool that easily let them know *"if there are any red flags that we should be concerned about that should impact the individual's marks"* as well as ease student concerns that *"they're doing the work and other people are getting the credit"*.

Decrease stress in writing group evaluation questions

Part of achieving fairness for some instructors meant ensuring they were asking the right questions to assess group dynamics. These instructors felt tools they'd tried previously (e.g., iPeer) caused additional stress and uncertainty by asking them to develop their own peer evaluation questions from scratch—*"it was too general in the things to consider"* for them and for the students. They worried with questions they chose *"do I know it's the right things to have the students rate each other on?"* These instructors preferred a tool that would offer more guidance in what to ask, so they could feel more confident in the results.

Train students better in assessing their peers

Since students often come to peer evaluation as relatively novice reviewers of one another, some instructors also wanted this guidance to extend to the student experience—using *"something that is more instructive"* rather than just an empty form to fill out. These instructors preferred a tool that would give students *"concrete examples of what working in teams could mean"*. In this way, students would be *"learning what good teamwork looks like"* and commenting on how this related to their group, instead of commenting on their group without a good foundation to ground those comments in.

Help students improve with peer feedback

For the two-term courses, instructors were additionally motivated to use peer evaluation as a feedback mechanism for students at the halfway point—so *“it’s not just summative but formative as well”*. A tool with the capability to release results back to the students (which CATME provides) would let them check if their self-perceptions aligned with their group members’ perceptions so far, *“getting feedback on whether they’re being effective in their collaboration”* and, if not, how they might course-correct in the second term.

Instructor and TA response to using CATME

In terms of meeting the instructor needs and wants noted above, CATME was perceived as quite successful during this pilot.

Clear automated indication of problem groups in interface

All instructors and the TA felt CATME’s instructor-facing interface clearly flagged groups and individuals with potential teamwork issues. *“This was obvious from the interface”* because *“there’s colour coding that shows up”* as well as a label to describe what may be happening in terms of group dynamics (CATME’s algorithms interpret this information automatically). Instructors were *“utilizing this [interface] to identify red flags”* as well as high performers, and when combined with the (optional) open-ended comments students left for instructors at the end of the evaluation, *“it becomes pretty obvious what’s going on”* in any given group, and in a way that previous tools did not make apparent. An additional nice feature for some instructors was CATME’s adjustment factor, a number which suggested how they might modify each student’s group-work grade based on the peer input. Instructors appreciated the lack of overhead in calculating these results, since in processing evaluations manually *“it’s a lot of person hours”* to get to this level of understanding.

Confidence in vetted, research-backed evaluation questions

Instructors expressed strong confidence in CATME’s results in part because CATME provides groups of preset, vetted questions to use in building the peer evaluation. Since the questions come from teamwork research (and this is well-advertised), for instructors *“it*

gives me confidence that it's a validated tool". In particular, instructors thought the questions better encouraged students to *"in an objective way think through what made our group work well and what didn't make our group work well"*. Instead of asking for general, subjective opinions, the questions focused on specific *"behaviours and actions and things that are important in terms of what the person is delivering as a group member"*, and that helped instructors trust the outcomes were genuinely meaningful and reflected the true dynamics of each group.

Behaviourally-anchored responses for students

The other aspect of CATME that gave instructors confidence was how the evaluations were filled out by students. CATME behaviourally anchors its multiple-choice responses. For each question, students are given a scenario (e.g., "contributing to the team's work") and then asked how each group member behaved. Each response lists a specific set of behaviours that ultimately lay out a spectrum of good to bad teamwork. From the instructor point of view, *"that's an easier and more clear way of differentiating in terms of what the person is contributing to the team"* than a points system or rating scale, because students can think *"that's what Tim is doing, he's doing that"*. Since *"it's very specific on what they're rating people on and how to rate them"*, from the instructor point-of-view this hopefully better prevents evaluations from being arbitrary, a *"popularity contest"*, or *"based on friendship rather than true contribution"*, all while teaching students about teamwork.

Simplicity of application

The final strength of CATME from the instructor and TA perspective was its simplicity. *"There's only two or three pages that you can be on"*, so instructors agreed *"it's an easy interface"* to navigate around. Whatever they might be looking for *"you can see it pretty quickly"*. Additionally, *"it's pretty easy to set up"* the evaluations themselves and *"there's this whole website around help"* for troubleshooting any issues.

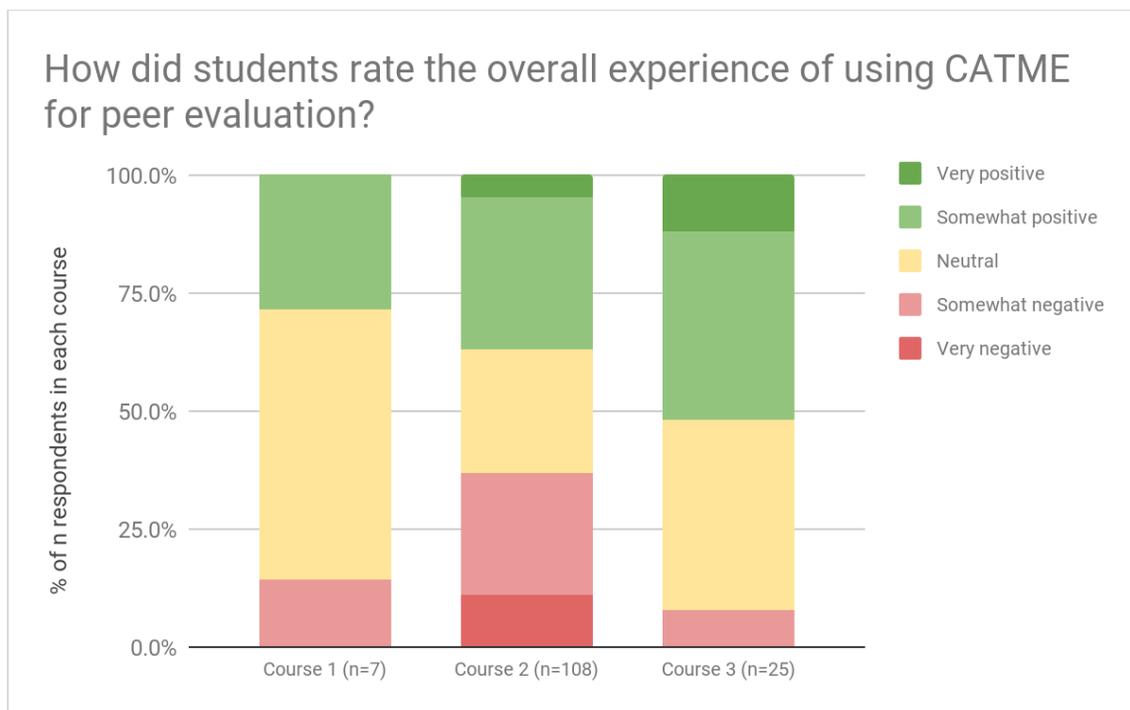
Difficulties with initial setup

That said, the one drawback that came up for instructors and the TA was CATME's initial setup. CATME requires student emails to get started, which instructional teams didn't have

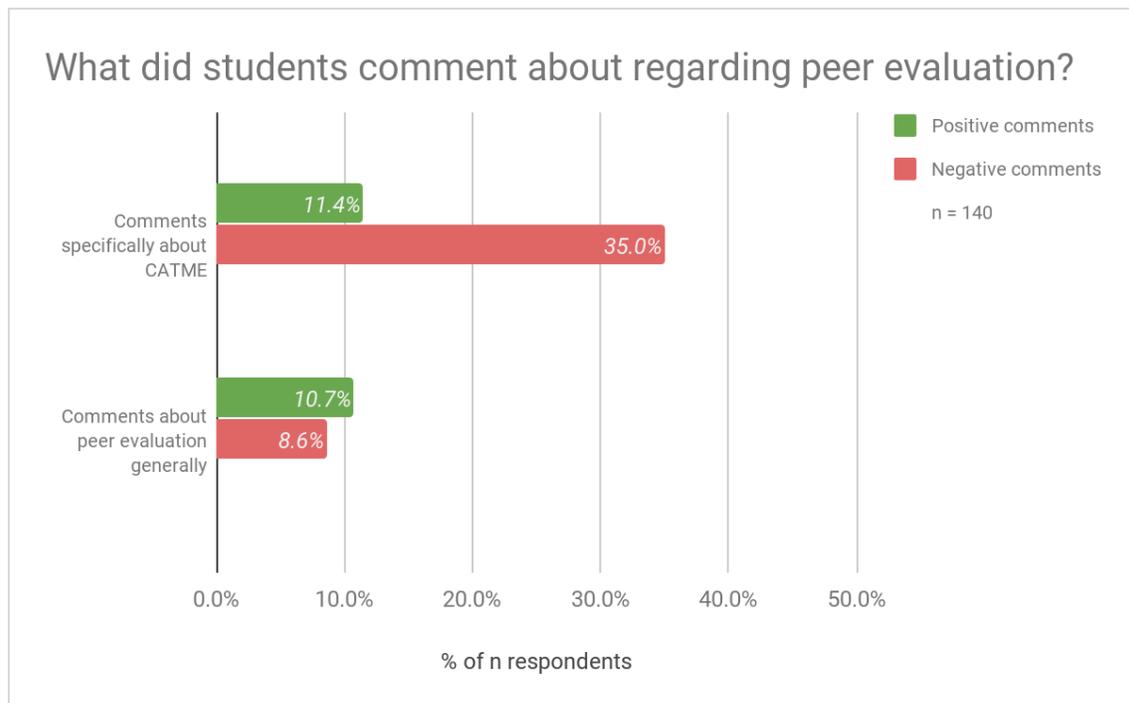
easy access to (*"getting 220 emails was quite a task"*). Even once the emails were gathered (and consent received from students, since CATME's servers are U.S.-based), CATME made uploading them a chore because it required a *"very specific file upload format"* with no room for error, so for example, *"if people have special characters in the emails, it will act funny"*. The bigger the course, the more time and effort had to go into the setup—*"it needs to be thought of how this pivotal piece of information can be done in a not-so-onerous way"*.

Student response to using CATME

From the student perspective, the CATME experience was mixed both within and between courses.



Of the 140 student respondents, 35% mentioned a burden related to using CATME specifically when prompted with the open-ended survey question "What did you like and/or not like about peer evaluations in this course?" This is in contrast to 11.4% noting a benefit.



Additionally, when asked later in the survey to comment on likes or dislikes of CATME itself, 43.6% of students left negative comments, while 17.9% left positive ones.

CATME evaluations felt lengthy, repetitive

The weaknesses of CATME for students fell into four main areas. First, as might be expected, some students were put off by the lengthiness of the CATME evaluation, which asks significantly more questions than students may be used to for peer evaluations. Students who felt burdened by this noted that the *“process was too elaborate”*, and *“it felt like a drawn out survey”* with *“the same 5 questions repeated 4 times in slightly different ways”*. The lack of differentiation between some of the questions led some students to think they were either repeated exactly across different sections or similar enough to seem *“extremely repetitive”* and *“unnecessarily time consuming”*. In other words, the nuances the tool may have been aiming for were not always apparent to the students.

Behaviourally-anchored responses did not always match experience

Since students were limited to picking a single spot along a behaviour spectrum for each group member in responding to the questions, some students felt the constraint resulted

in less accurate evaluations. The responses often had overlap from the students' perspective, so *"some of the specific important criteria applied where some didn't"* or multiple *"answers seemed fine and descriptive of my group"*. This meant students at times *"struggled to place people within them"*, especially *"when the behaviours of a [group] member is highly variable over time"*. This led to a sense for some students that they had to *"choose an option that I felt was the least wrong"*, which ultimately gave them the impression the outcomes *"didn't capture how our group worked together"* and were *"not a true reflection of how the team dynamic was"* (good or bad). These students would have liked a way to enter open-ended text as the evaluation progressed, to *"paint a more complete picture of what a team member contributed and how they interacted"*.

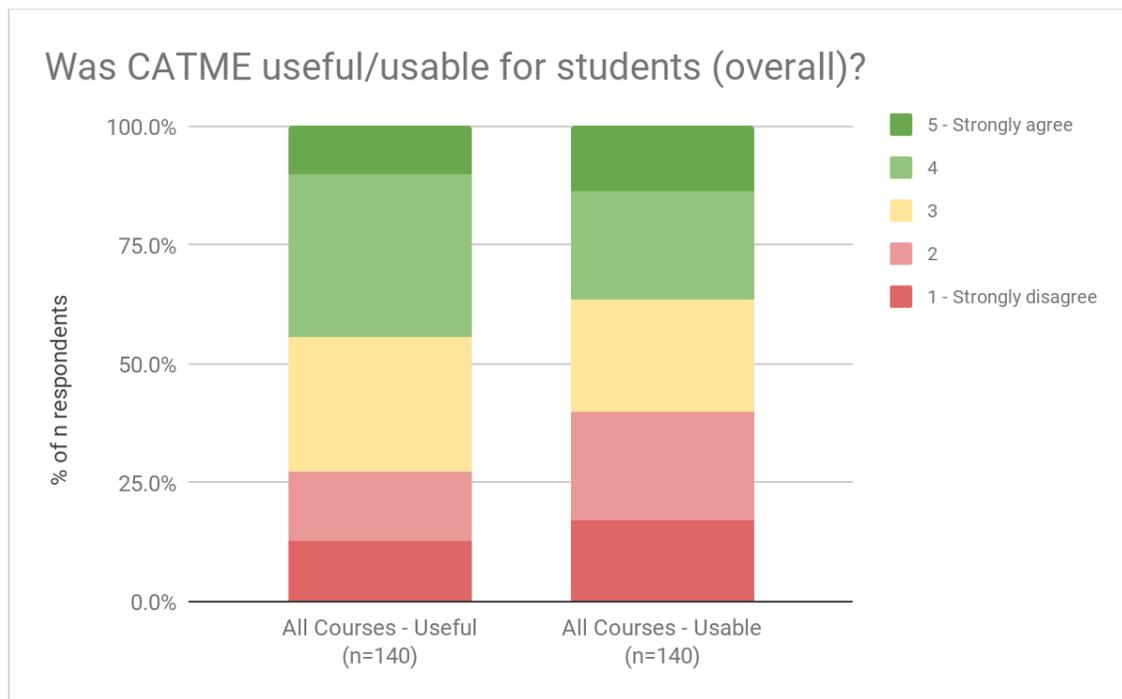
Questions asked not always relevant to group

Similarly, some students expressed dissatisfaction with the specific scenarios presented in the questions. For these students, *"a lot of the questions were not applicable to my group and our work together"* and *"it made answering many of the questions impossible"* since *"there was not an option for 'never'"* or N/A in the preset responses. In these cases, students felt forced to speculate how their group members might have acted in *"hypothetical scenarios"* (e.g., group conflict that required having to contact the professor). Additionally, some students *"did not feel that CATME accurately reflected all aspects of team working"* that they experienced, in particular, *"much of how we interacted was through online communication, and CATME peer review survey didn't take this into account"* (or at least it was hard to see how to incorporate this into the questions presented).¹

Poor ease-of-use in layout for evaluations

Finally, some students struggled with the usability of CATME, specifically with the layout of the evaluations. This was noted in the open-ended student comments and also reflected in responses to the survey question on usefulness and usability, where a slight upswing in negative responses (close to a 13% increase) can be noted for the latter.

¹ Since instructors are able to specify which groups of questions to use in CATME evaluations, student issues here may in part reflect the need for better selections made on the instructor side. However, instructors do not have the ability to customize beyond including or not including these question groups; they cannot edit the questions or add/remove questions to/from groups.



When evaluating, the response for each group member is at left, with one choice needed per column; however, the column names (student names) are not directly aligned above each column and the response descriptions are at the far right, presented in rows of single- or multi-line text (see [Appendix C.1](#) for screenshot). This made it “*very hard to align the choices*” (particularly in Course 2 where 6 students would be presented at once), and in fact one student noted “[I] often had to take some kind of ruler to make sure I was selecting the right answer” for each group member. Beyond creating confusion, this also sparked slight concern for some students, who worried “*it could be very easy for a someone to miss-match [sic] their answers to the statement*”, i.e., they could receive a wrong rating from a peer unintentionally.

Better guidance in how to evaluate peers

On the flip side, students who reacted positively to CATME commented on two primary benefits. First, those students who didn’t know what they wanted to say about group members or teamwork thought CATME provided better guidance in how to evaluate. “*I often find it hard to come up with and write specific comments for each group member*”, and CATME evaluations “*made it so we don't have to write generic comments*” or try to come up

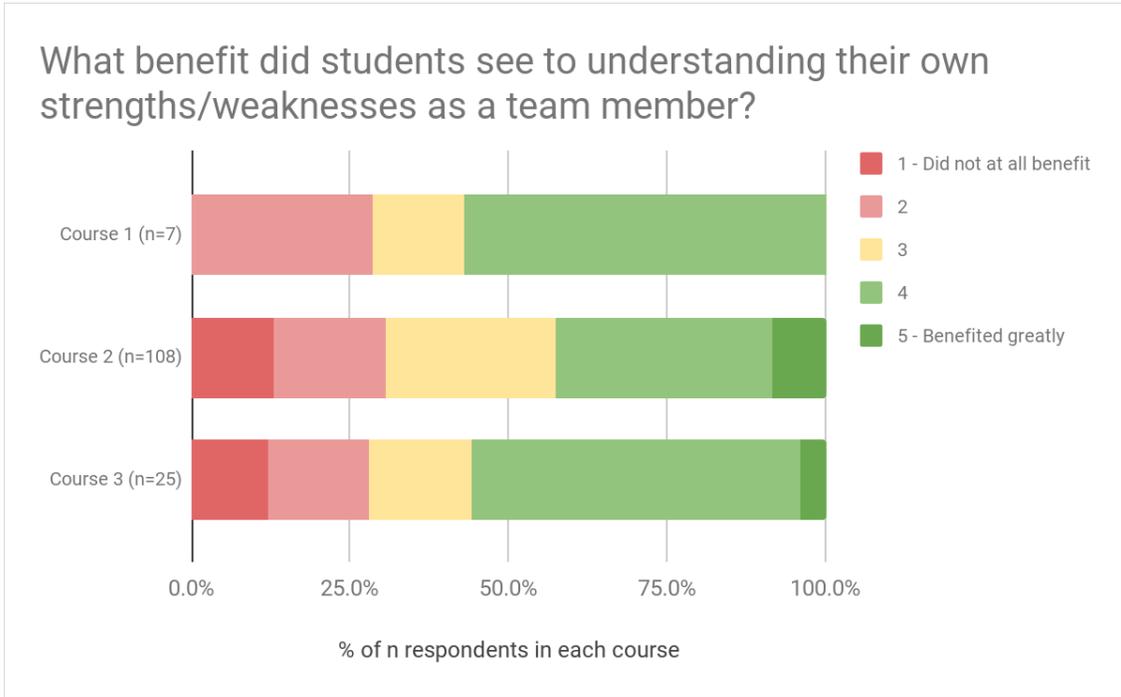
with their own reasons for rating peers high or low. These students understood the tool was *"ranking [peers] based on sentences that best described their work ethic"* with *"statements [that] gave good examples about what good teamwork looks like"*. In other words, some students reported exactly what instructors hoped for: they said they learned something about teamwork from doing the peer evaluation.

Increased confidence in fairness of grades

Second, due to the breadth and depth of the CATME evaluations, some students shared the increased confidence noted by instructors in the peer evaluation outcomes overall. The process seemed *"thorough"* with *"in-depth descriptions and more options to more accurately rate my peers"*. This provided a sense that these students could *"properly assess each of my peers"* and *"reflect upon the entire term, our group dynamics and the contributions of each team member"* as part of the process, rather than simply assign an arbitrary number (as was often the approach students experienced elsewhere).

Appreciation of formative feedback

A final positive outcome worth noting was, as might be expected, the students in the two courses that received their detailed results directly reported slightly higher benefits (approximately 14% more positive responses) to understanding their own strengths and weaknesses. While not a lot of students commented on this benefit specifically, those that did *"liked getting the feedback"* *"to see how my teammates rate me"* and how it *"allows you to stop and assess how I have been in my group"* before starting the second term.



Recommendations

Based on this pilot's outcomes, these are some recommendations for how CATME could best be implemented at UBC to maximize its perceived benefits and minimize its perceived shortcomings.

1) Use CATME evaluations for more involved and in-person group work	
May address	<ul style="list-style-type: none"> • CATME evaluations feeling lengthy, repetitive (student issue) • Questions asked not always relevant (student issue)

CATME seems like a general peer evaluation tool that can be applied across disciplines and for different course sizes. But the tool appears best suited for 1) more involved group work that calls for significant evaluation and 2) includes a strong in-person component.

As to the first point, a few Course 2 students themselves speculated they might have been using too detailed an evaluation for the amount of group work done, provoking some of their frustration in the time it took to complete the evaluations. *"CATME would probably be more appropriate in a setting where each student had more of a role in a full term project or*

continual participation" or *"a more in-depth group project with more components"*.² For lesser or more sporadic group work, *"a platform to express quick concerns"* may be enough to raise red flags from students to the instructional team.

Regarding the second point, CATME may also not be the right peer evaluation tool for largely distance/online courses, as the available questions may be focused more on qualities better observed with regular in-person interactions.

2) Explain to students how CATME works and how to work with it	
May address	<ul style="list-style-type: none">• CATME evaluations feeling lengthy, repetitive (student issue)• Behaviourally-anchored responses did not always match experience (student issue)• Questions asked not always relevant (student issue)

Part of the discrepancy between the instructor and student experience in this pilot may have stemmed from students not understanding the why and how of using CATME. As one student tellingly wrote, the evaluations were frustrating because *"we were limited to ranking [peers] based on computer generated statements"*. This student did not understand the origins or purpose of the CATME questions—these were simply annoying "computer-generated statements"—and was likely not alone. And it is no doubt harder to tolerate a seemingly senseless tool asking endless questions than one you know has been deliberately designed to help with rating teamwork objectively based on research. It may help for instructors to introduce the tool by sharing more of why *they* feel confident and enthusiastic about CATME vs. other peer evaluation tools as well as how the final results are presented.

Additionally, it may be good for instructors to give clear guidance for how students should deal with outliers—that is, questions asking about something that didn't happen in their group or group members who don't easily fit into one of the behaviour categories. Students experienced stress in guessing how to deal with these on their own, and it accounted for part of the lack of confidence some felt in CATME (i.e., "if I'm inputting something as a guess, how can I trust the outcome will be accurate?") By preparing students to deal with

² Again, instructors do have some control over the questions included in the evaluation, so possibly stripping down to a more streamlined set for basic group work is an alternate approach.

these situations ahead of time (e.g., always respond to scenarios that didn't occur by choosing the middle option), it may increase their confidence that the outcome will be a true reflection of their group dynamics.

3) Always include an open-ended comment box in CATME evaluations

May address	<ul style="list-style-type: none">• Behaviourally-anchored responses did not always match experience (student issue)• Questions asked not always relevant (student issue)
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Open-ended comment boxes at the end of the evaluation are optional to include, but instructional teams and students can benefit from putting these in every evaluation (all courses in the pilot did) and, more importantly, pointing this out to students ahead of time. Instructors noted this was a good chance for students who *"feel like you want to be specific in some cases"* to share more about how group members performed *"or maybe you feel you want to react to what CATME asked or didn't ask"*. Letting students know before starting that they will be able to air whatever concerns they like after an otherwise highly-structured evaluation could ease some of their frustration during the process.

4) Release CATME evaluation results directly to students

May address	<ul style="list-style-type: none">• Appreciation of formative feedback (student benefit)
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Students may benefit more from being able to see their evaluation results directly and not just guessing at the outcomes based on how it influences their grade. Instructors might want to consider releasing these results to students, regardless if they were gathered with a formative or summative purpose in mind. This way, as one instructor put it, *"they can actually grow from this"* by checking if their self-perception lined up with the group's perception of them.

5) Integrate CATME within the Learning Technology Environment

May address	<ul style="list-style-type: none">• Difficulties with initial setup (instructor/TAissue)
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As with any tool, finding a way to integrate CATME so that instructional teams have less headache in setting up courses with class lists would be ideal.

Regardless of integration status, instructors noted it's also important *"to be reminded about the whole privacy issue"* and that future instructional teams need to let students know they can opt-out if they're uncomfortable using a U.S.-based server³. *"One of the things that the legal counsel told me is make sure it's in the syllabus"* that this will be used, and instructional teams should *"have a workaround ready"* (like suggesting opt-out students use an email alias instead).

Implementing CATME with these recommendations may help resolve some of the concerns brought forward by instructional teams and students and improve future users' perceptions of the tool's pedagogical value.

³ Instructors found this largely a non-issue, since they knew what requirements to meet and virtually no students opted out, at least in their experience so far.

Appendices

Appendix A - Instruments

A.1) Instructor/TA interview questions

1. What specific activities were given to students using CATME?
2. What were the main learning objectives of those activities?
3. How were the activities in the technology integrated into the course overall?
4. How were students introduced to, trained in, and followed up with on the activities done in the technology?
5. How did the activities in the technology affect grades?
6. How helpful or not was peer evaluation in supporting your learning objectives? Why?
7. How helpful or not was CATME in supporting peer evaluation? Why?
8. On a scale from 1 to 5, with 1 being “strongly disagree” and 5 being “strongly agree”, rate how much you disagree or agree with the following.
 - a. CATME's capabilities met my requirements for peer evaluation
 - b. CATME was easy to use
9. What were the main benefits of using CATME?
10. What were the main drawbacks or inconveniences of using CATME?
11. How did CATME compare to iPeer or other peer evaluation tools you've used?
12. When you needed pedagogical or technical support with using CATME, how did you get it?
13. Would you like to continue using CATME for peer evaluation? If yes, what advice would you give other instructors considering using CATME?
14. On a scale of 0 to 10, with 10 being highest, how likely are you to recommend CATME to a colleague or friend for use in teaching and learning?

A.2) Suggested student survey questions

1. On a scale from 1 to 5, with 1 being “greatly decreased” and 5 being “greatly increased”, rate how the inclusion of peer evaluation affected your motivation when working in a team for this course.
2. On a scale of 1 to 5, with 1 being “not at all comfortable” and 5 being “very comfortable”, rate how comfortable or not you were giving honest evaluations of your peers online.

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3. On a scale of 1 to 5, with 1 being “not at all confident” and 5 being “very confident”, rate how confident or not you were that the peer evaluations would fairly influence individual grades in this course.
 4. Would you have liked fewer or more chances to evaluate peers in your team this term (select one)?
 - a. Fewer (or no) chances to evaluate peers in my team
 - b. What was given was about right
 - c. More chances to evaluate peers in my team
 5. What did you like and/or not like about peer evaluations in this course?
 - a. I liked...
 - b. I didn't like...
 6. On a scale from 1 to 5, with 1 being “strongly disagree” and 5 being “strongly agree”, rate how much you disagree or agree with the following.
 - a. CATME’s capabilities met my requirements for peer evaluation
 - b. CATME was easy to use
 7. On a scale of 1 to 5, with 1 being “not at all helpful” and 5 being “very helpful”, rate how helpful or not you found CATME’s setup for doing the following.
 - a. Completing a self evaluation reflecting on my teamwork
 - b. Completing evaluations of peers in my team
 - c. Writing comments for the instructor(s) about my team
 - d. Receiving the results of my team’s evaluation of me
 8. On a scale from 1 to 5, with 1 being “did not at all benefit” and 5 being “greatly benefited”, rate how little or how much you think the following skills benefited from using CATME for peer evaluation.
 - a. My knowledge of what good teamwork looks like generally
 - b. My knowledge of what poor teamwork looks like generally
 - c. My understanding of my own strengths and weaknesses as a team member
 - d. My future ability to fairly evaluate peers in a team
 9. How would you rate your overall experience using CATME for peer evaluation (select one)?
 - a. Very negative
 - b. Somewhat negative
 - c. Neutral
 - d. Somewhat positive
 - e. Very positive

10. Would you have liked fewer or more chances to evaluate peers in your team using CATME specifically (select one)?

- a. Fewer (or no) chances to evaluate peers in my team with CATME
- b. What was given in CATME was about right
- c. More chances to evaluate peers in my team with CATME

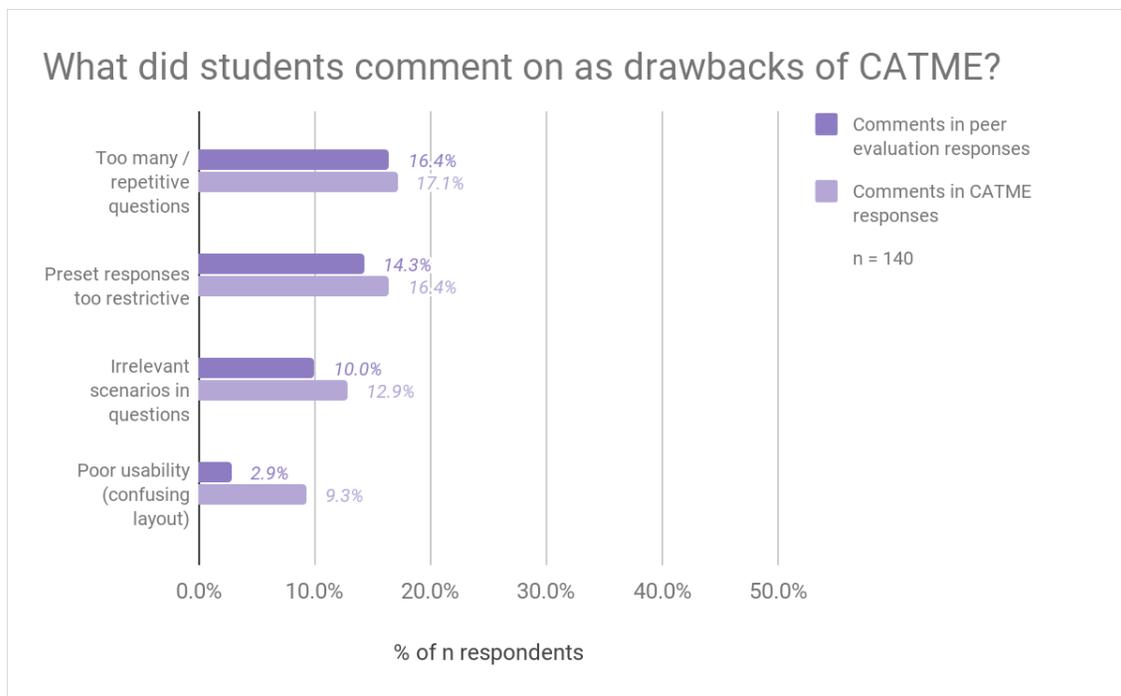
11. What did you like and/or not like about using CATME?

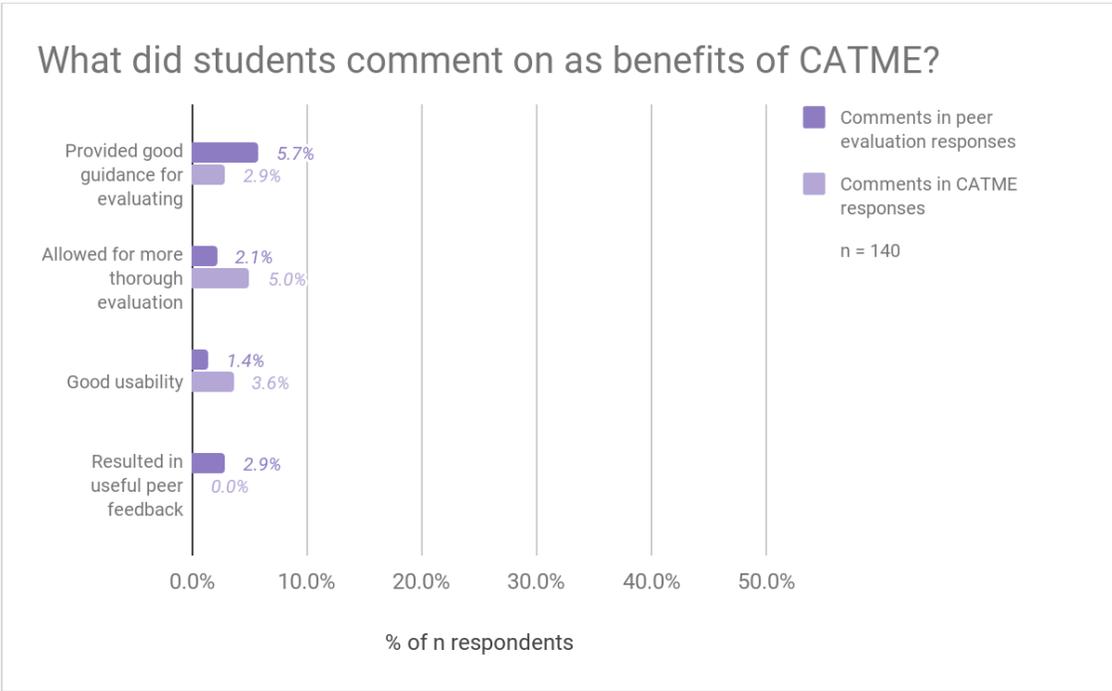
- a. I liked...
- b. I didn't like...

12. On a scale of 0 to 10, with 10 being highest, how likely are you to recommend CATME in other UBC courses where teamwork (or group assignments) play(s) a substantial role?

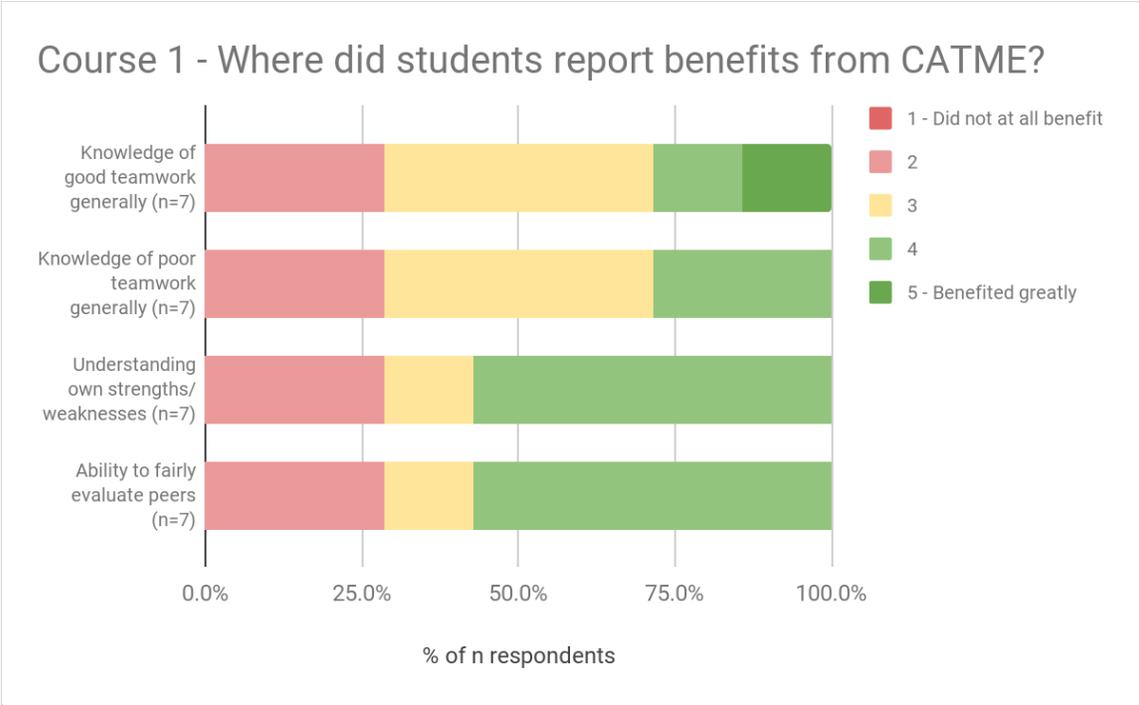
Appendix B - Compiled Student Data

B.1) Student comments coded for open-ended survey questions (N = 140)

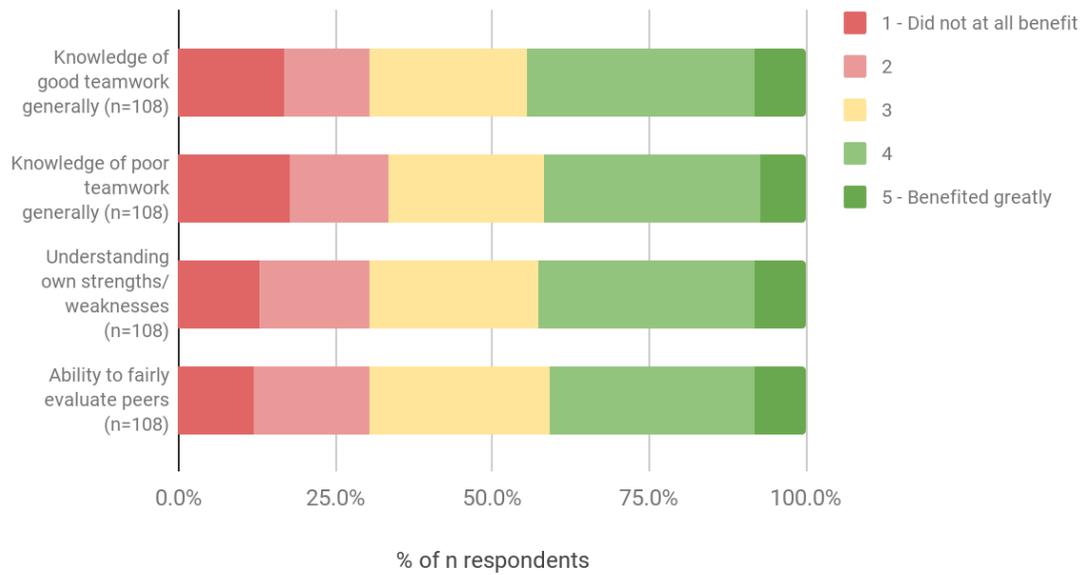




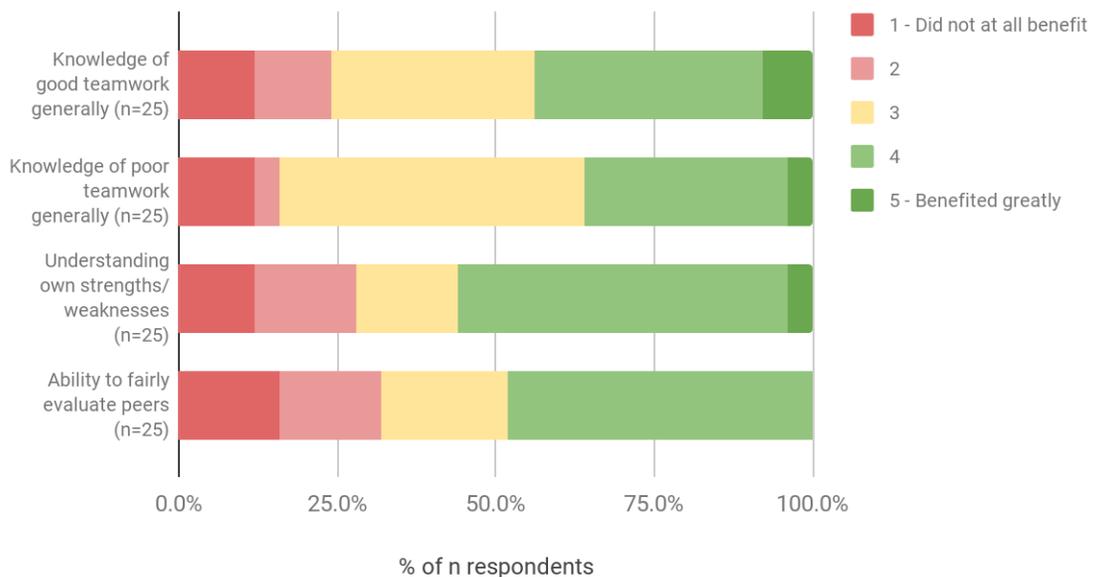
B.2) Student quantitative benefits by course (N = 7, 108, 25)



Course 2 - Where did students report benefits from CATME?



Course 3 - Where did students report benefits from CATME?



Appendix C - CATME Screenshot

C.1) Student view of peer evaluation (as presented on CATME demo site)

Ali Anderson			
Chase Hall			
Sage Hernandez			Description of Rating
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Asks for and shows an interest in teammates' ideas and contributions. Makes sure teammates stay informed and understand each other. Provides encouragement or enthusiasm to the team. Asks teammates for feedback and uses their suggestions to improve.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Demonstrates behaviors described immediately above and below.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Listens to teammates and respects their contributions. Communicates clearly. Shares information with teammates. Participates fully in team activities. Respects and responds to feedback from teammates.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Demonstrates behaviors described immediately above and below.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Interrupts, ignores, bosses, or makes fun of teammates. Takes actions that affect teammates without their input. Does not share information. Complains, makes excuses, or does not interact with teammates. Is defensive. Will not accept help or advice from teammates.