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From Self-Perception to Team Success: Analyzing Collaborative Team Dynamics and Interdisciplinary Teamwork in a Sustainability Capstone Course

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His research lab, Sustainable Design Labs, focuses on fusing analytical chemistry, sustainability design principles and data analytics to address Water and Sustainability grand challenges. Current thrusts focus on Smarter Riversheds, Microbial Fuel cells and advanced oxidation and separation processes.

Focused on co-creating long term partnerships that synergize community vision with Pitt's core competencies of research and education, Sanchez has built up Pitt Hydroponics in Homewood, founded Constellation Energy Inventor labs for K-12 students, and re-created the Mascaro Center's Teach the Teacher sustainability program for science educators in the region.

As a teacher he designed and created the Sustainability capstone course which has annually partnered with community stakeholders to address sustainability challenges at all scales. Past projects have included evaluating composting stations in Wilkinsburg, studying infrastructure resilience in Homewood, enabling community solar in PA, improving energy efficiency in McCandless Township, and improving water quality in our rivers. He teaches core Sustainability courses, labs in the Civil & Environmental Engineering Department, electives in the Innovation and Entrepreneurship program, the First-Year Engineering program, and International Study Abroad programs.

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From Self-Perception to Team Success: Analyzing Collaborative Team Dynamics and Interdisciplinary Teamwork in a Sustainability Capstone Course

Abstract

Teamwork is crucial in interdisciplinary projects as it brings together diverse perspectives, skills, and approaches, making it essential to evaluate how personal traits and the varying expertise of students from different majors influence the overall team performance throughout the project. Students' roles within a team are highly influenced by their self-image, as the way individuals perceive their own strengths and weaknesses directly affects how they contribute to team dynamics.

In this context, the CATME (Comprehensive Assessment of Team Member Effectiveness) tool was employed to form teams, considering various self-assessments provided by the students. The Team-Maker self-assessment criteria included key areas such as commitment level, leadership role, leadership preference, big-picture versus detail-oriented tendencies, and previous hands-on experiences. These factors helped in creating balanced teams where students could complement each other's abilities, ensuring a well-rounded approach to project work. This research compares students' early-semester self-assessment scores with their teamwork dimension scores, as observed throughout the semester through a series of three CATME teamwork evaluation surveys. By analyzing these relationships, the study aims to uncover correlations between self-perceived abilities and actual contributions to team dynamics. Understanding these connections could lead to more effective team formation strategies in the future, as well as provide insights into how students can be better equipped for collaborative work environments.

The results from the University of Pittsburgh study of sustainability certificate students show clear correlations between student perceived interests, skills, and team dynamics. Our research findings show that teamwork performance tends to be higher when teammates strike a balance between focusing on project ideas and details, prefer a collaborative leadership approach that includes following a leader and sharing leadership roles, possess good hands-on experience, and maintain a reasonable time commitment to the project.

Introduction

The interdisciplinary nature of sustainability emphasizes the importance of effective collaboration within a multidisciplinary domain. Teamwork is an important capability for engineering students and has become a strong emphasis for many engineering programs. Effective teamwork is also important for engineering programs who are accredited by the Accreditation Board for Engineering and Technology (ABET). ABET Outcome 5 of the seven student outcomes states that graduating engineering students should attain, "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 [1]." Therefore, it is

imperative for the University of Pittsburgh engineering programs to engage their students in effective teamwork throughout their undergraduate education.

Teamwork is important in interdisciplinary projects as it brings diverse ideas, skills, and approaches together. Likewise, different students have different skills, and their personal trials and knowledge influences the overall team performance and achievements. Additionally, student team roles are influenced by their self-image and self-perception as they work with other team members. Self-perceived strengths and weaknesses directly affect their contributions to team dynamics. This study examines collaborative team dynamics and interdisciplinary teamwork for students in an external project-based sustainability capstone course at the University of Pittsburgh. The research team's data analysis process compares CATME data from the students' early semester self-assessed Team-Maker survey to the data from three mid-semester CATME teamwork dimension surveys. By analyzing these two data sets, the research seeks to identify patterns linking self-perceived interests and skills to actual contributions in a team setting. The findings may be useful in informing strategies for improving team formation and offer insights into preparing students for more effective collaboration in professional environments.

CATME is an acronym for Comprehensive Assessment of Team Member Effectiveness system. The software provides instructors with research-based survey tools to effectively form student teams and evaluate team dynamics. The CATME web-based tools assist instructors in implementing best practices when managing student teams. CATME has been used by nearly 1.5 million students from over 2,200 institutions around the world [2]. The research team who developed CATME developed a web-based instrument to efficiently collect and analyze self- and peer-evaluation data. CATME uses a behaviorally anchored rating system to assess team-member contributions in five teamwork dimensions based on team effectiveness literature [3]. These dimensions are shown in the Figure 1 below.

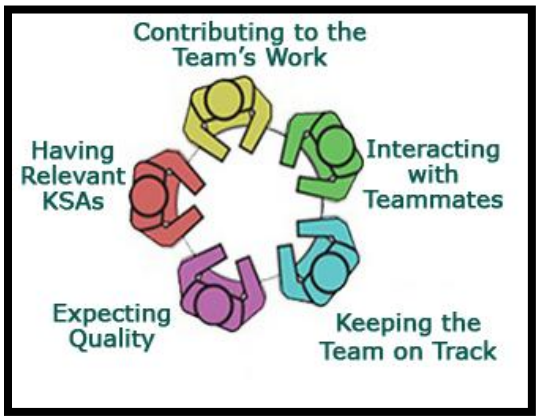

Figure 1: CATME Five Teamwork Dimensions

Each dimension has a five-level rating system with a score of 5 being a more positive teamwork raging in each dimension. Table 1 provides a detailed overview to emphasize the meaning of the CATME teamwork system. [https://info.catme.org/features/catme-five-dimensions/].

Score	Contributing to Team's Work	Interacting with Teammates	Keeping the Team on Track	Expecting Quality	Having Related Knowledge, Skills, and Abilities
5	• Does more or higher-quality work than expected. • Makes important contributions that improve the team's work. • Helps teammates who are having difficulty completing their work.	• 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.	• Watches conditions affecting the team and monitors the team's progress. • Makes sure that teammates are making appropriate progress. • Gives teammates specific, timely, and constructive feedback.	• Motivates the team to do excellent work. • Cares that the team does outstanding work, even if there is no additional reward. • Believes that the team can do excellent work.	• Demonstrates the knowledge, skills, and abilities to do excellent work. • Acquires new knowledge or skills to improve the team's performance. • Able to perform the role of any team member if necessary.
4	Demonstrates behaviors described immediately above and below.				
3	• Completes a fair share of the team's work with acceptable quality. • Keeps commitments and completes assignments on time. • Helps teammates who are having difficulty when it is easy or important.	• 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.	• Notices changes that influence the team's success. • Knows what everyone on the team should be doing and notices problems. • Alerts teammates or suggests solutions when the team's success is threatened.	• Encourages the team to do good work that meets all requirements. • Wants the team to perform well enough to earn all available rewards. • Believes that the team can fully meet its responsibilities.	• Demonstrates sufficient knowledge, skills, and abilities to contribute to the team's work. • Acquires knowledge or skills as needed to meet requirements. • Able to perform some of the tasks normally done by other team members.
2	Demonstrates behaviors described immediately above and below.				
1	• Does not do a fair share of the team's work. Delivers sloppy or incomplete work. • Misses deadlines. Is late, unprepared, or absent for team meetings. • Does not assist teammates. Quits if the work becomes difficult.	• 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.	• Is unaware of whether the team is meeting its goals. • Does not pay attention to teammates' progress. • Avoids discussing team problems, even when they are obvious.	• Satisfied even if the team does not meet assigned standards. • Wants the team to avoid work, even if it hurts the team. • Doubts that the team can meet its requirements.	• Missing basic qualifications needed to be a member of the team. • Unable or unwilling to develop knowledge or skills to contribute to the team. • Unable to perform any of the duties of other team members.

Table 1: CATME Rating Scale for the Five Teamwork Dimensions [4]

Educational Theory - Experiential Learning

The University of Pittsburgh sustainability capstone course is an interdisciplinary course that includes students from different backgrounds. Students come together in groups of 4-5 to work with external stakeholders in different sustainability projects. These projects are real world challenges that companies face and throughout the semester students work on finding real world solutions which have real world impacts on external organizations. Teamwork and hands-on learning engage students in the highest levels of learning. Blooms taxonomy organizes learning objectives into six hierarchical levels of complexity and depth: Remember, Understand, Apply, Analyze, Evaluate, and Create. These levels move from basic recall of information to higher-order thinking skills like critical analysis and creative problem-solving [5]. Students who register for the sustainability capstone have already been exposed to some of the lower levels of Bloom's Taxonomy in the prerequisite courses. These courses include introductory sustainability and environmental courses, along with a broad range of elective courses. When the students have completed five of the six required courses, the final course in the required sequence is the Sustainability Capstone course. This course is highly engaging and hands-on, covering the upper most levels of Bloom's taxonomy, as shown in Figure 2. Students learn how to work closely with teammates, create designs or produce deliverables that are one-of-a-kind, and learn to communicate effectively with a broad range of external stakeholders.

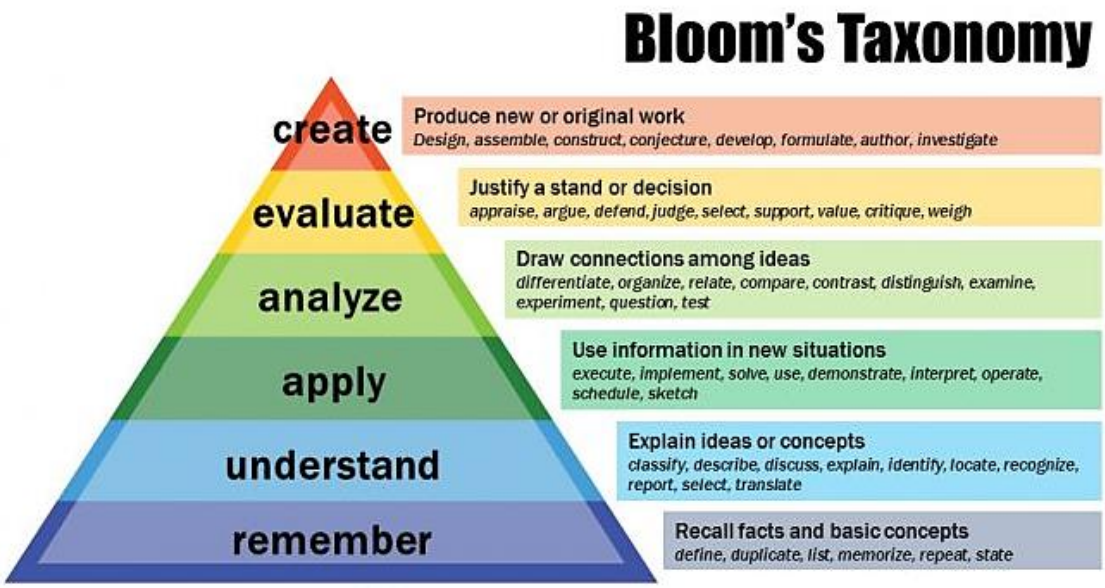

Figure 2: Bloom's Taxonomy [5]

Kolb's Experiential Learning Cycle is another learning theory that provides insights into the important aspects of experiential learning within a project-based capstone course. Kolb asserts that experiences with educational concepts are necessary to truly learn and understand the concepts. He developed a four-part learning cycle for experiential learning in 1984, with the steps shown in Figure 3. Kolb argues that for effective learning, all four stages of the learning cycle must be performed [6]. The learning process begins with Concrete Experience, where the individual encounters a new situation, experience, or reinterprets an existing one considering new ideas. This is followed by Reflective Observation, where the learner reflects on the experience, comparing it with their existing knowledge and noting any discrepancies. Through this reflection, the process moves to Abstract Conceptualization, where the learner develops a new idea or modifies an existing concept based on what they have learned. Finally, in Active Experimentation, the learner applies these newly formed or adjusted concepts to real-world scenarios to observe the outcomes and further refine their understanding [6]. There is much research available that associates the importance of experiential learning in capstone courses. McKim and Watson, provide examples of the successfully applying Kolb's Experiential Learning Cycle as a framework for designing and teaching their courses [7, 8]. Although not explicitly designed to focus on Kolb's learning cycles, the sustainability capstone course inherently takes students through each of the four phases as students work with their external stakeholders and iterate through many product cycles, eventually producing their final deliverables.

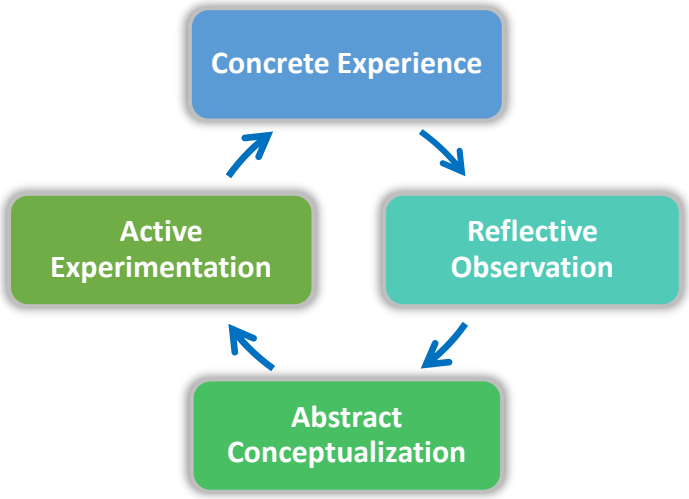

Figure 3: Kolb's Experiential Learning Cycle.

Methodology

The CATME Team-Maker survey is designed to form teams more effectively than experienced instructors while reducing the time required for team assignments, even in large classes [9]. It has been widely used by faculty at the Swanson School of Engineering as an effective tool for team formation. In this study, the research team distributed the CATME Team-maker survey to students in a sustainability capstone course. A list of the Team-Maker survey questions can be seen in Appendix A, including 14 questions related to demographics, availability, work schedules, major, and self-assessed skills and preferences. Of particular interest to this research were five key metrics assessing students' perceptions of their skills and preferences. Below is a list of the 5 key teaming metrics:

1. **Big Picture:** Evaluates whether a student approaches a project with a visionary, high-level perspective or a detail-oriented mindset.
2. **Leadership Role:** Determines whether a student prefers to take on a leadership role or follow others.
3. **Leadership Preference:** Identifies whether a student favors a single designated leader or a shared leadership structure.
4. **Commitment Level:** Assesses the amount of time a student is willing to dedicate to the project.
5. **Hands-On Skills**: Measures a student's prior experience with hands-on tasks and practical applications.

To evaluate team dynamics, we utilized the CATME peer teamwork dimension surveys, which are based on a comprehensive research-driven methodology [10]. These surveys require training for effective administration but provide valuable insights into team interactions [11]. The six teamwork dimension categories assessed can be found in Appendix B and are as follows:

1. **Team Cohesiveness:** Measures team chemistry regarding project process and goals.

2. **Team Conflict:** Assesses the extent of conflicts within the team.
3. **Team Interdependence:** Evaluates how well students collaborate and rely on one another.
4. **Team Satisfaction:** Captures students' satisfaction with their teammates.
5. **Psychological Safety:** Examines whether students feel accepted, respected, and confident within their team.
6. **Team Trust:** Assesses whether teammates fulfill responsibilities without oversight.

The study involved 53 senior capstone students from 18 different majors, with engineers comprising 45% of the class. Due to the interdisciplinary nature of the course, students represented fields ranging from environmental engineering and mechanical engineering to marketing and computer science. The diversity of majors in the capstone sustainability course lends itself well to the inherently diverse topics within the broad domain of sustainability. Data was collected from the Team-Maker survey and three teamwork dimension surveys administered throughout the semester, including a final survey which was due along with the capstone project deliverables.

When analyzing the data, students who did not complete all four surveys were excluded, resulting in 38 complete responses. Each teamwork dimension survey used a Likert scale, and responses within each dimension were averaged. The mid-semester teamwork scores were further aggregated into a single score per dimension, then normalized using the highest score per category as a normalizing factor. This normalization allowed for clearer comparisons between Team-Maker scores and teamwork dimension results. The findings from this analysis are presented in Figures 4 through 8.

Results

The data presented in Figures 4 through 8 provide the aggregated teamwork dimension scores for each Team-Maker metric, including team conflict, team satisfaction, team interdependence, team cohesiveness, psychological safety, and team trust. The following sections summarize key findings from these comparisons.

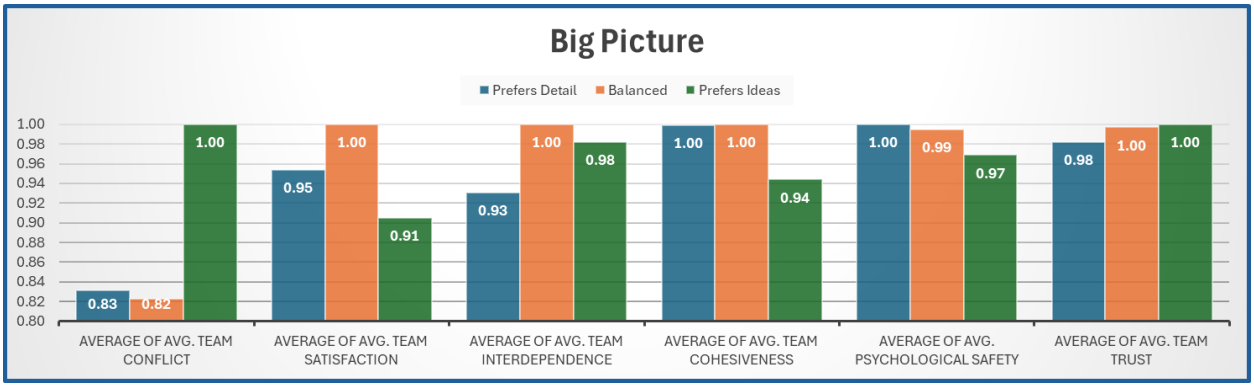

Figure 4: Comparison of the Team-Maker Survey Big Picture Metric to the Six Teamwork Dimension Scores from the Three Mid-Semester Teamwork Dimension Surveys

Students with a Balanced Big Picture preference consistently achieved the highest scores across teamwork dimensions, except in the Team Conflict category, indicating that a Balanced Big Picture perspective could lead to higher team performance in most teamwork categories. In contrast, those who Prefer Details generally scored the lowest, except in Team Cohesiveness (1.00) and Psychological Safety (1.00). The Prefers Ideas group exhibited lower scores in Team Satisfaction (0.91) and Team Cohesiveness (0.94) but notably lower Team Conflict, suggesting that idea-oriented students may be less likely to engage in conflicts.

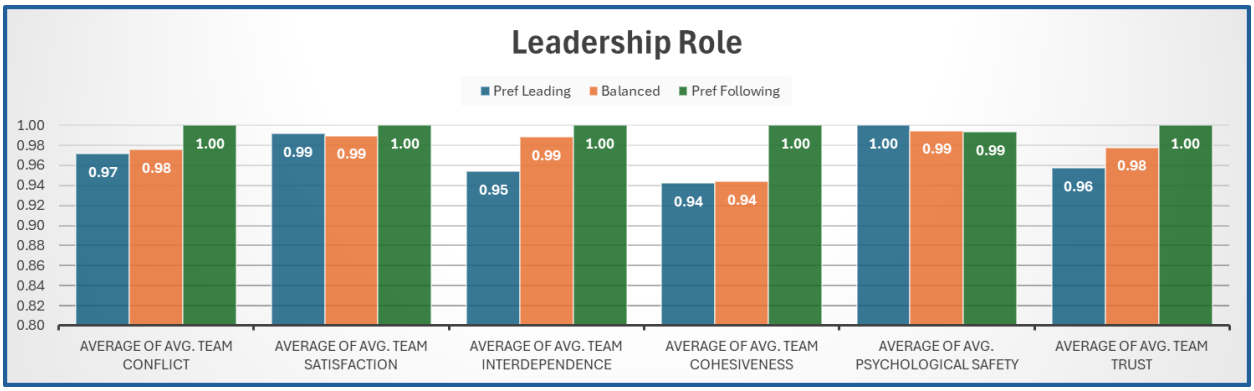

Figure 5: Comparison of the Team-Maker Survey Leadership Role Metric to the Six Teamwork Dimension Scores from the Three Mid-Semester Teamwork Dimension Surveys

Students who Prefer Following demonstrated the highest scores across all teamwork dimensions, while those who Prefer Leading had the lowest scores except in Psychological Safety. The Balanced group fell in between. These results suggest that a preference for following may be associated with stronger teamwork dynamics.

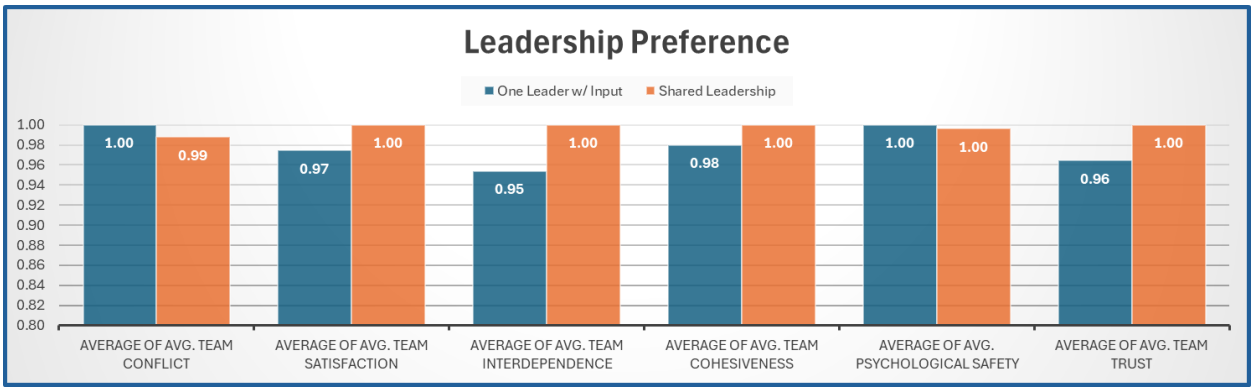

Figure 6: Comparison of the Team-Maker Survey Leadership Preference Metric to the Six Teamwork Dimension Scores from the Three Mid-Semester Teamwork Dimension Surveys

Both Shared Leadership and One Leader with Input categories performed well across all metrics, though Shared Leadership showed slightly higher scores, particularly in Team Interdependence and Team Trust. These results indicate that distributing leadership responsibilities throughout the team may enhance collaboration and trust within teams.

Figure 7: Comparison of the Team-Maker Survey Commitment Level Metric to the Six Teamwork Dimension Scores from the Three Mid-Semester Teamwork Dimension Surveys

Overall, the 5–7 Hours group achieved the highest scores while the Whatever It Takes group scored lower in every category, especially in Team Interdependence (0.88) and Team Satisfaction (0.92). This suggests that a higher level of time commitment does not necessarily correlate with better teamwork dynamics; instead, moderate time commitment levels (5–7 hours per week) consistently presented stronger team dynamics.

Figure 8: Comparison of the Team-Maker Survey Hands-On Experience Metric to the Six Teamwork Dimension Scores from the Three Mid-Semester Teamwork Dimension Surveys

Students with Good hands-on experience generally had the highest scores, except in Team Interdependence, where they scored the lowest. Conversely, those with None or Basic experience had lower scores across most teamwork dimensions. These results suggest that hands-on skills may positively impact team performance, though individuals with strong hands-on experience may not collaborate as well with their teammates.

Conclusion

This study explored the relationship between self-perceived teaming interests and skills, and the individual contributions to teamwork performance. The research incorporated multiple data sets from CATME surveys that were administered at the beginning and throughout the semester in a sustainability capstone course. The class was highly interdisciplinary with 45% of the students majoring in engineering and the entire class spanning 18 different majors. CATME Team-Maker survey results were compared with CATME teamwork evaluation survey results, leading to some interesting team dynamics conclusions. The results of this work emphasize the importance of considering team member skills and preferences when organizing high-performing interdisciplinary project teams.

The data analysis reveals several key relationships that can be used to inform better team formation. When evaluating the Big Picture student preference, Balanced consistently scored the highest across the teamwork dimensions. This suggests that individuals who balance their focus between project ideas and details contribute more effectively to team cohesiveness, satisfaction, interdependence, trust, and psychological safety. We also found that team members who tend to prefer ideas over details may be less likely to engage in team conflict.

Leadership roles play an important role in team dynamics. We found that students who preferred to follow a leader scored the highest in all teamwork dimensions, except Psychological Safety. This suggests that team members who are more comfortable following team directives may be positive contributors to team dynamics, while students with an affinity toward leading might have a harder time with the collaborative nature of teamwork. Although similar to the category of Leadership Role, Leadership Preference tends to focus more on how the student prefers the leadership to be structured within the team. Both metrics in this category achieved consistently

high scores across all metrics, however there was a slightly positive correlation for Shared Leadership as a leadership preference.

The amount of time that a student is willing to commit to a project plays a vital role in its success. Our research found that students who were able to commit 5–7 hours per week, as opposed to 2-4 hours or Whatever It Takes, achieved the highest scores across most teamwork dimensions. Interestingly, the students who indicated they would put in as many hours as needed toward the project scored consistently lower in every teamwork dimension. This suggests that higher time commitments may not always translate into better teamwork, and moderate, consistent effort may be more effective in fostering team cohesion, satisfaction, and trust. As time commitment is important to effectively completing a team project, so too are the hands-on skills of the team members. Our results indicate that students possessing Good hands-on experience scored the highest in most teamwork dimensions, indicating a strong positive correlation between practical skills and teamwork success. However, Good hands-on experience scored the lowest in the Team Interdependence dimension, suggesting that a teammate with stronger hands-on skills may have a more difficult time effectively collaborating with teammates.

Successful team formation and team dynamics are influenced by a broad range of factors including student preferences, skill levels, leadership styles, practical experience and commitment levels. Our research set out to uncover insights into team dynamics and team formation within the context of an interdisciplinary sustainability capstone course. Through the use of multiple CATME surveys and data analysis, we were able to uncover meaningful correlations between self-perceived abilities and important team dynamics metrics. Understanding these connections will hopefully assist others in effectively forming interdisciplinary teams, as well as provide insights into how students can be better equipped for collaborative work environments.

Recommendations for Team Building:

Based on the findings of this study, instructors can take a strategic approach to team formation, helping students align their self-perceptions with their actual contributions to enhance team performance. Below are some recommendations for forming effective teams:

1. **Prioritize Balanced Thinkers**: Students with a Balanced Big Picture perspective had the highest teamwork scores so we recommend that teams be formed with a mix of Big Picture and Detail-Oriented students but prioritize the Balanced thinkers to help stabilize the group dynamics. It is also a good idea to avoid too many detail-oriented students on the same team.
2. **Encourage Shared Leadership Models**: Students who Preferred Following exhibited the strongest teamwork scores. Teams that share the leadership roles within the team and vary responsibilities would likely have a stronger team dynamic.
3. **Realistic Time Commitments**: The 5–7 hours per week commitment level led to the best team performance. Direct students to thoughtfully think about how many hours are required to effectively complete their project. Assisting them in managing their workload effectively and discouraging overcommitment will help prevent burnout.

4. **Leverage Hands-On Experience for Collaboration**: Students with Good hands-on skills had strong performance but lower Team Interdependence. Pair hands-on students with those less experienced to encourage stronger teamwork. This may also assist with teambuilding when one student is able to mentor another in a skill area.
5. **Proactive Approach to Team Conflict Proactively**: Students who Preferred Ideas over Details had lower conflict scores. This could mean that these students may have avoided disagreements. To increase students' ability to resolve team conflicts, it may be a good practice to include resolution training early in the team project course.

We think that by implementing some or all of these strategies, instructors can create balanced teams that will improve team dynamics throughout the course.

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Appendix A: Teambuilder (Team Maker) questions:

Below is a list of the 16 questions that were provided to the students in the CATME Team-Maker survey, including the 5 questions (highlighted) that were used to correlate to the 6 teamwork dimension results from the three CATME teamwork dimension surveys.

1) **Gender:** What is your gender?
2) **Race:** Please indicate the racial/ethnic group with which you most identify
3) **GPA:** Your overall GPA is:
4) **Schedule:** Please check the times that you are in class, at work or practice and are busy and unavailable for group work
5) **Weekends:** How willing are you to participate in team activities on the weekend?
6) **Commute:** How long does it take you to get to campus?
7) **Credits:** How many credit hours are you attempting this term?
8) **On-Campus Job:** On average, how many hours do you work at an on-campus job each week?
9) **Off-Campus Job:** On average, how many hours do you work at an off-campus job each week?
10) **Major:** What is your major or primary area of study?
11) **Writing:** Rate your writing skills:
12) **Hands-On:** Rate your skill with hands-on build or repair tasks:
    a) None
    b) Basic
    c) Average
    d) Good
    e) Expert
13) **Commitment Level:** In this course, you intend to work how many hours per week outside of class (not counting lectures or labs):
    a) 2-4 hours per week
    b) 5-7 hours per week
    c) Whatever it takes
14) **Leadership Role:** What is your preferred leadership role?
    a) Follower
    b) Prefer Following
    c) Balanced
    d) Prefer Leading
15) **Leadership Preference:** Which of the following team leadership structures do you prefer?
    a) One Leader w/ Input
    b) Shared Leadership
16) **Big Picture:** Please select the statement you most closely identify with
    a) I have more ideas in 5 minutes than most folks have all day but hate to do the detail.
    b) I prefer the idea phase but can do details.
    c) I am balanced between ideas and details.
    d) I prefer the details but can come up with ideas.
    e) While the visionaries are dreaming, I can get the project done and the report written.

Appendix B: CATME Teamwork Dimension Survey Questions:

Below is a list of the 43 questions that were provided to the students in the CATME teamwork dimension surveys. The questions are broken into 6 Teamwork Dimensions that were correlated with the results from the CATME Team-Maker Survey.

Team Conflict: Likert Scale: 1 = None or Not At All; 2 = Little or Rarely; 3 = Some; 4 = Much or Often; 5 = Very Much or very often

1) How much conflict is there in your group about task responsibilities?
2) How often are there disagreements about who should do what in your work group?
3) How much conflict of ideas is there in your work group?
4) How much relationship tension is there in your work group?
5) How often do you disagree about resource allocation in your work group?
6) How frequently do you have disagreements within your work group about the task of the project you are working on?
7) How often do people get angry while working in your group?
8) How much emotional conflict is there in your work group?
9) How often do people in your work group have conflicting opinions about the project you are working on?

Team Satisfaction: Likert Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree

1) I am satisfied with my present teammates.
2) I am pleased with the way my teammates and i work together.
3) I am very satisfied with working in this team.

Team Interdependence: Likert Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree

1) My teammates and I have to obtain information and advice from one another in order to complete our work.
2) I depend on my teammates for the completion of my work.
3) I have a one-person job; I rarely have to check or work with others.
4) I have to work closely with my teammates to do my work properly.
5) In order to complete our work, my teammates and I have to collaborate extensively.

Team Cohesiveness: Likert Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree

1) I'm unhappy with my team's level of commitment to the task.
2) Team members get to participate in enjoyable activities.
3) Team members like the work that the group does.
4) Being part of the team allows team members to do enjoyable work.
5) Team members get along well.
6) Our team is united in trying to reach its goals for performance.
7) Team members enjoy spending time together.
8) Our team members have conflicting aspirations for the team's performance.
9) Team members like each other.

Psychological Safety: Likert Scale: 1 = Very Inaccurate; 2 = Inaccurate; 3 = Slightly Inaccurate; 4 = Uncertain; 5 = Slightly Accurate; 6 = Accurate; 7 = Very Accurate

1) If you make a mistake on this team, it is often held against you.
2) Members of this team are able to bring up problems and tough issues.
3) People on this team sometimes reject others for being different.
4) It is safe to take a risk on this team.
5) It is difficult to ask other members of this team for help.
6) No one on this team would deliberately act in a way that undermines my efforts.
7) Working with members of this team, my unique skills and talents are valued and utilized.

Team Trust: Likert Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor

Disagree; 4 = Agree; 5 = Strongly Agree

1) If I had my way, l wouldn't let my teammates have any influence over issues that are important to me. (Team Trust) [scale reversed]
2) I would be willing to let my teammates have complete control over my future in this class. (Team Trust)
3) I really wish I had a good way to keep an eye on my teammates. (Team Trust) [scale reversed]
4) I would be comfortable giving my teammates a task or problem which was critical to me, even if I could not monitor their actions. (Team Trust)
5) I would tell my teammates about mistakes l have made in our work, even if they could damage my reputation. (Team Trust)
6) I would share my opinion about sensitive issues with my teammates even if my opinion were unpopular. (Team Trust)
7) I am afraid of what my teammates might do to me in this class. (Team Trust) [scale reversed]
8) If my teammates asked why a problem happened, I would speak freely even if I were partly to blame. (Team Trust)
9) If someone questioned my teammates motives, I would give them the benefit of the doubt. (Team Trust)
10) If my teammates asked me for something, I would respond without thinking about whether it might be held against me. (Team Trust)