Enhancing Team Communication Skills via Portable Intercultural Module in a Systems Thinking Class

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Abstract

While working in teams with people from diverse backgrounds is expected of any engineering graduate, it is also challenging and requires students to develop intercultural skills, such as team communication skills. These skills are essential for building an effective and successful team. Higher education institutions can play an important role in helping engineering students to develop and grow interculturally by embedding intercultural learning activities into the curriculum. This full paper explores the impact of self-paced and online Portable intercultural modules (PIMs) on the intercultural learning goals of the students enrolled in a junior-level system thinking course. The PIM used in the class aims to improve learners' teamwork and communication skills. The PIM contains five activities, including watching videos about cultural diversity and empathy, survey, quizzes, and exercise that applies learning towards intercultural collaboration. The students in the system thinking course were asked to complete the PIM and a reflection assignment. The research questions that we intend to answer for this study are: RQ1: What domains of intercultural competence, as defined by the AAC&U IKC Value rubric, are represented through PIM? RQ2: What communication challenges are shown while working in a diverse team? RQ3: What strategies did students learn from the PIM to overcome the communication challenges in teamwork? The data for the study were collected in the form of student reflections. The student reflections were analyzed using both deductive and inductive thematic analysis. The Association of American Colleges and Universities (AAC&U) Intercultural Knowledge and Competence (IKC) rubric was used to conduct deductive thematic analysis and answer RQ 1. The intent was to identify the domains of intercultural competence reflected in two reflection questions. For both, the reflection questions following domains of IKC rubrics were identified they are, verbal and non-verbal communication, empathy, cultural self-awareness, and openness. Further to answer the RQ2 and RQ 3, inductive thematic analysis was conducted for the second reflection question. The analysis helped to identify themes for challenges that students encountered while working and communicating with diverse team members. Analysis also helped to identify the themes for strategies that students learned from PIM to overcome challenges. The themes for challenges were: i) use of in-direct communication style, ii) interrupting the communication (overlapper pacing style) iii) use of non-verbal communication. Themes for the strategies were i) asking for clarification or using direct communication when someone uses indirect communication, ii) acting as a moderator and suggesting turn-taking when someone overlaps the communication, iii) using verbal communication for clarification and also researching gestures and non-verbal communication styles. Overall the results of the study indicated that the PIMs allowed the students to understand cultural differences in terms of communication styles and pacing. Also, it allowed them to reflect on the challenges and learn strategies when interacting with team members from diverse backgrounds.

Keywords: Intercultural learning, teamwork, STEM, undergraduate

Introduction

Intercultural learning is an important skill that STEM graduates need to develop [1], [2]. Working in a team with members from diverse backgrounds can be challenging [3]. Therefore, learning to work with one different from us is a need for today's future generations. Employers have identified intercultural skills and teamwork as important skills for young graduates as they will have to collaborate and work in a diverse team setting [4]. Prior studies [5], [6] have demonstrated that traditional STEM classrooms have very few female students and students from ethnic minorities and these students have less opportunity to interact with students from diverse backgrounds. Therefore, developing intercultural skills and team communication for students in the STEM field is crucial [7], [8]. Hammer [9] has defined intercultural competence as the ability to interact and communicate effectively and appropriately with people from different backgrounds.

STEM educators are trying their best to infuse intercultural competence and effective team communication among students using multiple methods such as curriculum integration, study abroad, engaging in learning activities, etc. [10]–[12]. For example, a study by Starr et al. [12] emphasized the importance of learning community, pedagogical infusion, and guided reflections in helping STEM students develop intercultural competence. The study used the intercultural development inventory (IDI) and the American Association of Colleges and Universities (AAC&U) Intercultural Knowledge and Competence (IKC) Value rubric to measure the intercultural competence of students. IDI was used as a quantitative measure to evaluate the intercultural learning gains from pre to post-test. The IKC Value rubric was used to code the student reflections. The results of the study demonstrated that living in the learning community and studying the concepts of intercultural competence while interacting with students of diverse backgrounds allowed the students to develop interculturally. Also, engaging students in guided reflection helped them to reflect on the intercultural skills that they developed through constant interaction with peers that requires efficient communication among the team members. Similarly, in another study by Swartz et al. [13], students were challenged to collaborate internationally with students from three different countries during a 6-week project to increase their intercultural competency. The results of the study revealed that upon completion of the 6-week project, students demonstrated an increased understanding of different communication styles such as verbal, non-verbal and para-verbal. Students showed appreciation of cultural differences and increased understanding of stereotypes. Lastly, teamwork helped the students feel confident interacting with students from other cultures.

Integrating the concepts of intercultural learning within the regular curriculum and engaging students in guided reflection has been identified as an effective mechanism to impart intercultural competence [14], [15]. The study by Wickenhauser and Karcher [10] revealed the impact of guided reflection in a STEM classroom in helping students to develop intercultural competence. The study demonstrated that students in the treatment group were engaged in active discussion and reflection and showed higher scores for intercultural competence measured using Intercultural Development Inventory (IDI). A similar study was conducted by Krishnan et al. [11] has also revealed the importance of curriculum infusion and guided reflections in helping students develop intercultural competence. Both studies have emphasized that curriculum integration is an effective and more economical method to impart intercultural learning. The prior studies [1], [4] conducted at the intersection of STEM and intercultural competence have revealed that infusing the concepts of

intercultural competence in pedagogy and allowing the students to reflect on their experiences help them to develop intercultural skills. However, if we specifically look at the studies conducted at the intersection of engineering and intercultural learning, we find that there are limited studies conducted at the intersection of the two. Prior studies have also revealed that engineering students are ethnocentric and lack the intercultural skills required to work in a diverse team [16][4]. Therefore, it is crucial for the engineering faculty and instructors to incorporate intercultural learning concepts into the curriculum. This study bridges the gap as it focuses on integrating effective team communication styles, culturally determined communication patterns, and preferences through videos, short lectures, quizzes, and self-reflections in a junior-level engineering classroom. Through this study, we intend to assess the intercultural learning gains and communication challenges of students by engaging them in guided reflections after they complete an online Portable Intercultural Module (PIM), which consists of various activities. The learning outcome of the PIM was creating an atmosphere where students can comprehend the complex understanding of cultural differences in various communication styles, such as verbal and non-verbal communication and resourcefully accommodate a shared understanding based on those differences. The study intends to pursue the following research questions:

RQ1: What domains of intercultural competence, as defined by the AAC&U IKC Value rubric, are represented through PIM?
RQ2: What communication challenges are shown while working in a diverse team?
RQ3: What strategies did students learn from the PIM to overcome the communication challenges in teamwork?

Research Methods

Participants

This study focuses on an undergraduate level systems thinking course offered in the Fall semester of 2022, with a total of 43 students. Most of the students were in their junior or senior year of college education and were pursuing an engineering degree at a large Midwestern University in the United States of America. In addition, prior to conducting the study, approval from the university's Institution Review Board was obtained. Pseudonyms were used for the students to protect the confidentiality of their responses. The class was conducted face-to-face throughout the Fall semester of 2022. Students in this class work in teams throughout the semester on various projects and a final semester-long project. The class consisted of 9 teams, with 4 or 5 students in each team. Therefore, effective team communication plays a crucial role in their success. Hence, an online self-paced "Team Communication" module from PIMs was embedded into the class curriculum at the beginning of the semester for students to benefit from the strategies and techniques mentioned in the literature. Students were given two weeks to complete the module before they started working with team members to reflect on what they learned about their team relations.

Learning Design and Context

The learning environment of this junior-level systems thinking course was grounded in a project-based learning approach where students worked in teams on several week-long projects and a semester-long final project. As students needed to work with diverse teams and collaborate with their fellow classmates, they were expected to communicate effectively and work with teams in an efficient way to improve their academic performance. Various ethnic cultures and groups of students were put together to diversify the groups by having students from different majors and genders. Even though students contribute to each other's perspectives and vision, at the same time, they face some intercultural challenges due to not knowing the intercultural differences among each other. Therefore, we implemented a self-paced online module, Portable Intercultural Modules (PIMs) developed by the Center for Intercultural Learning, Mentorship, Assessment and Research at Purdue University to increase students' knowledge and awareness about cultural differences in terms of communication styles and pacing. Since this PIM module focused on intercultural team communication, it was crucial for this class. As in this engineering class students work in teams throughout the semester and their success depends on efficient team communication. Therefore, we integrated this module as it aimed to help students have a better understanding of intercultural communication patterns and preferences at the very beginning of the semester for about two weeks. It was also crucial for this class that students begin to identify their own communication patterns while working in a diverse team setting. In addition, introducing strategies for managing different communication styles and raising their awareness about these strategies which can allow them to suspend their judgment and biases around differences and prepare them to manage those differences via productive communication styles. Understanding intercultural communication is an integral part of student success in this class and having the knowledge of intercultural communication and teamwork will help students to work with a diverse workforce after they graduate.

In order to help students internalize the concepts of intercultural communication, the course used Schon's model of reflective practices. Schon's model of reflective practices has been used in prior studies [17], [18] to help students develop reflection skills. According to Schon's model, reflective practices can be categorized into two categories: reflection-in-action and reflection-on-action. Reflection-in-action means the learner reflects on the activity while engaged in the activity [19]. In contrast, reflection-on-action refers to the reflective practice of reflecting on the activity upon completion. Both the processes of reflection-in-action and reflection-on-action are crucial for the reflection cycle to complete [20]. Also, helping students to reflect in and after the process help to develop metacognition and critical thinking skills [18], [20]. In our study, students were engaged in reflection-in-action as they worked on short quizzes and responded to short questions while working on the online module. However, the reflection-on-action was reinforced at the end of the online module as students were required to think critically and complete two capstone reflection questions.

Data Collection

Portable Intercultural Module (PIM)

The data for this study was collected through the Portable Intercultural Module (PIM). PIMs are self-paced online modules that has been developed by a team of experienced researchers who work in the area of intercultural learning. The PIMs are theoretically grounded into intercultural learning

theory frameworks such as the Intercultural Development Continuum and Intercultural Knowledge and Competence Framework. The PIM used for this class revolved around the concept of intercultural and cross-cultural communication. The PIM consisted of the following submodules i) pacing styles: in this sub-module, students were made familiar with three pacing styles that are turn-takers, overlappers, and pausers. Students watched videos related to pacing activities and were asked to perform a role play where they had to choose a pacing style different from their own while talking to a friend or family member. Post-completion of the roleplay, students were required to write a short reflection about their interaction. ii) The second submodule focused on the direct and in-direct communication styles; students watched a video showcasing the different communication styles. Upon completion of the video, students were asked to complete a code-switching activity where they were given statements either in direct or in-direct styles, and they had to write the response in the opposite style. iii) The third sub-module focused on non-verbal communication style. Students watched a video, completed some reading related to non-verbal communication styles, and participated in a quiz. After completing all three sub-modules, students were asked to complete a capstone reflection assignment related to intercultural communication. The responses to the capstone reflection assignment served as the data for the study. The reason for choosing the capstone responses were two-folds, i) the capstone was completed at the end of the module, so students were able to reflect on all three sub-modules while reflecting on the capstone questions. ii) the capstone response provided us richer data for the purpose of analysis. The two reflection questions from the capstone assignment are available in Table 1 in Appendix :

Data Analysis

Intercultural Knowledge and Competence (IKC) Value rubric

The American Association of Colleges and Universities (AAC&U) developed an Intercultural Knowledge and Competence (IKC) Value rubric. For the purpose of this study, the IKC Value rubric was used as a framework to conduct deductive thematic analysis and identify the domains of intercultural knowledge and competence that emerged from the reflection questions. The IKC Value rubric consists of six key criteria: Cultural Self-awareness, Knowledge of Cultural Worldview Frameworks, Empathy, Verbal and Nonverbal Communication, Curiosity, and Openness. Further, these six criteria are grouped into three broad categories: knowledge, skill, and attitudes, see Figure 1 in the Appendix. The IKC Value rubric articulates criteria on four performance levels for each component, from Benchmark 1 to Capstone 4. Additionally, the rubric has been assessed to have construct validity and reliability [21]. It is often used for formative assessment and qualitative outcome assessment to directly measure student learning [22] and as a guide for aligning learning outcomes with intervention objectives [23].

For this study, we used the thematic analysis approach to analyze the data. The thematic analysis is a widely used method to identify, analyze and report the patterns that emerge from a data set. Specifically, for this study, we used deductive thematic analysis to analyze both the reflection questions. The deductive thematic analysis refers to the process where codes are pre-determined and researchers look for the presence of the predetermined codes in the data set [24]. Since this specific PIM was grounded in theory of IKC Value framework we used the dimensions of the IKC Value framework as the pre-determined codes for the analysis. The intent of the analysis was to

understand what dimensions of the IKC value rubric are present in the student reflections. This deductive analysis helped us to answer the first research question (RQ1) and to identify the domains of intercultural competence represented through PIMs. For conducting the deductive thematic analysis using the AAC&U IKC Value rubric, two authors read each reflection and used the IKC Value rubric to identify the key constructs represented for each student response. Two authors (raters) coded 20% of the reflections independently. In the next steps, raters met in the presence of a peer who is a qualitative expert but was not part of the project to discuss their codes. The peer debriefing was conducted and that helped raters to resolve any discrepancies. In the next phase, based on the previous discussion, the two raters independently recoded the entire data and met for the peer-debriefing. This time raters showed good inter-rater reliability in their codes. After the data was coded, raters counted the frequency of each IKC Value rubric criteria and calculated the percentages for each criterion for two reflection questions.

Further, to answer RQ 2 and RQ 3, we used inductive thematic analysis. The objective of inductive thematic analysis was to identify the patterns that emerged from the data. For this study, two raters were supposed to look for the themes that represented the challenges faced by the students when working with someone different and strategies that they identified to mitigate those challenges. The steps delineated by Braun and Clark [25] were followed for the purpose of analyzing reflection question 2, which are, i) getting familiar with the data, ii) creating the initial codes, iii) looking for the emerging themes, iv) evaluating the themes, v) describing the themes, vi) reporting the themes. In the first step 20% of the data was coded by both raters. Based on the coding, two raters met and developed a codebook. The two raters returned and recoded the data based on the codebook. To ensure the validity of the open-coding process, peer debriefing was conducted [26]. Peer debriefing is a commonly practiced method to ensure the trustworthiness of the qualitative analysis used in multiple research studies. [27], [28]. After identifying the final themes, the raters met and calculated the percentage of students that were part of each identified theme.

Results

The paragraph below discusses the findings of the study:

Domains of Intercultural Competence represented through PIMs.

The subsequent paragraphs below present the results of the analysis conducted using the AAC&U IKC Value rubric. For reflection question 1, 74% of students showed an understanding of verbal/non-verbal communication. For example, Jen mentioned how she changed her pacing style while communicating with someone with a different pacing style. Jen said,

> *"Sometimes I find myself following the pace of the person I am talking to. If they have a slower pace and pause often between speakers, I find myself doing the same in order to make the conversation easier to follow for the other speaker."*

47% of students demonstrated empathy while mirroring others. For example, Fred said,

"If someone talks slowly it is better to listen and talk slowly as well so that everyone feels heard."

33% of students showed cultural self–awareness as they were aware about the cultural norms of their culture and were also mindful of the appropriate behavior expected in other cultures. For example, Annie said,

"An adjustment I used to make was to imitate the direct communication of Americans during studying abroad. I come from China, and our speech is often ambiguous and indirect."

Lastly, 16% showed openness, that is they showed mindfulness while interacting with someone who has a different communication style, Nathan said,

"In my senior design group there are 5 members with diverse backgrounds and experiences. I make it a routine to mirror the communication styles of the group to make everyone feel included and have their voices and ideas heard. I do this because if I were to stick with my normal communication style, overlapping, a member of my group that has a "pausing" style would feel as if I were cutting him off or interrupting him because his opinion doesn't matter."

Whereas for reflection question 2, it was observed that around 62% of students demonstrated empathy while proposing solutions to mitigate the challenges. Students were able to think through the problems by putting themselves in others' shoes. For example, Gaby said,

"In a team setting, being indirect can be confusing. This is because some people might favor a direct communication style and might have a harder time understanding what certain indirect messages mean. In order to address this challenge, we constantly communicate, clarify with each other and make sure that everyone is on the same page."

48% of students showed aspects of verbal and non-verbal communication. Students were able to identify how communication differences can lead to problems and being aware of intercultural communication styles can help to overcome that. For example, Anya said

"Overlapping is very common in engineering. People tend to think that they have the best idea, when sometimes there could be flaws. To address this challenge, it is important to communicate to the team that we must have a turn-based/pausing communication style. Making this a team rule eliminates the possibility of overlooking flaws and missing out on great ideas."

23% of students showed cultural self-awareness as students showed awareness of the expected communication styles in their culture and described their strategies to modify their communication style whenever required. For example, Amaya said,

" I come from a culture that uses in-direct communication style, but I agree that in a team setting this could be very challenging as students in my team come from a culture that prefers direct communication. Therefore I also try to use direct communication while working with my team ".

Lastly, 23% showed openness while interacting with students from different cultures, for example Maddy said,

"Overlapping pacing style would be very difficult in a team setting because of how fast-paced it is and how it can exclude people from engaging in discussion due to a lack of turn-taking. In order to address this problem, I would change the way meetings of the group function in terms of pacing towards a more turn-taking style and possibly involve someone who can function as a moderator in the group to make sure everybody can express their full opinions."

It is also interesting to see that students identified verbal and non-verbal communication as the top domain for reflection question 1 and empathy as the top domain for reflection question 2. It means that in the case of the first reflection question majority of students proficiently conveyed a shared understanding based on differences in verbal and nonverbal communication styles while mirroring the communication styles of their partners. Whereas in the second reflection question, students showed empathy and were focused on understanding the perspective of the other team members. Figure 2 shows the domains of AAC&U IKC Value rubric that were represented for reflection questions 1 and 2.

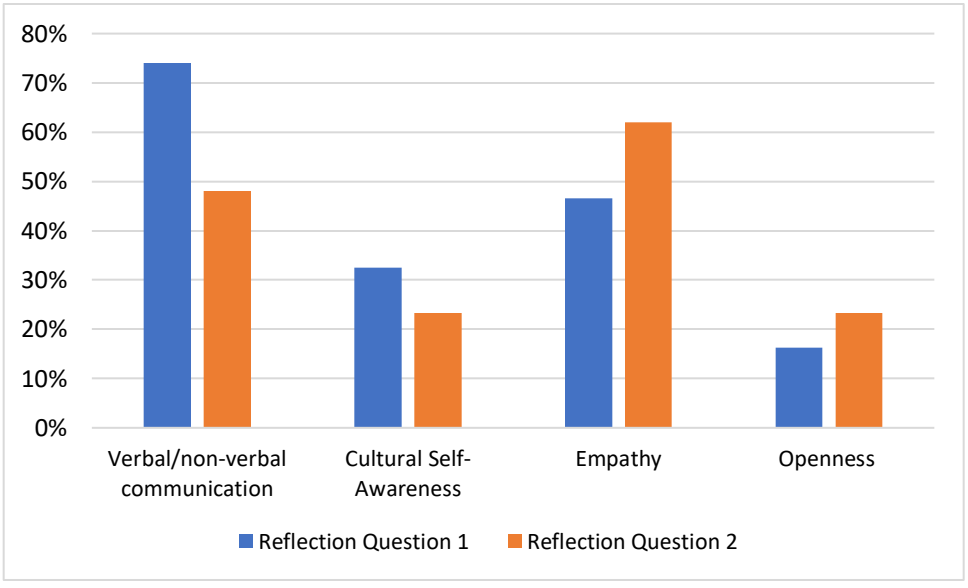

Figure 2: Domains of AAC&U IKC Value rubric represented for reflection questions 1 and 2

Communication challenges while working in a diverse team:

The inductive thematic analysis was conducted to identify the themes for challenges. The results of the inductive thematic analysis revealed that students found the following challenges while working in a diverse team.

Theme 1: *Use of in-direct communication style*. Around 70% of students reported that the use of an in-direct communication style is challenging, especially in a team setting, as it leads to confusion as the intent of the person is not clear. For example, Elle mentioned,

> *"I think indirect communication can cause confusion at times because unlike more direct communication, it is sometimes hard to interpret or understand the real meaning behind a question or statement."*

Whereas Marvin found the indirect communication style complicated as he feels that it is difficult to understand the perspective of other individuals, Marvin mentioned,

> *"When an individual is very indirect with presenting their ideas. I sometimes feel that they want something different and seem very unhappy with the overall decision but cannot express their thoughts in a clear manner."*

Theme 2: *Interrupting the communication (overlapping pacing style)*

Around 75% of students reported that they felt challenging to work with individuals who are overlappers meaning who interrupt while communicating. For example, Kim mentioned that the overlappers in the team interrupt and jump to quick solutions, which disturbs the flow of thoughts for other team members. Kim says,

> *"One style that I find very challenging to deal with is overlapping… In a team with overlapping, the presenter is unable to complete their full ideas, while the supposed listener is thinking about their own and does not give ample amount of time to evaluate their teammates' or their own ideas. With that said, overlapping can skew the early stages of brainstorming/problem solving which in the long run, can end up causing many flaws."*

Theme 3: *Non-verbal communication is challenging*. Around 65% of students mentioned that they find non-verbal communication difficult to understand as they have different meanings in different cultures. For example, Penny mentioned that she finds non-verbal communication an inefficient approach to communicate in a team setting, she says,

> *When I am with a team, I find the nonverbal to be challenging. The nonverbal communication style is not efficient and easy to cause misunderstanding since the team member may not know each other so well.*

On the same lines, Anu mentioned that he also finds non-verbal communication challenging as the same gesture may have different meanings in different cultures, and that might cause some miscommunications. He says,

> *I find that my nonverbal communication is weak in general and that includes team settings. I find it challenging because I do not exactly know what each nonverbal gesture means, so I find it difficult to convey messages using it.*

The strategies students used to overcome these challenges:

Students also learned various strategies through PIM to combat the challenges identified. The themes for strategies are as follows:

Theme 1: *Asking for clarification or using direct communication when someone uses indirect communication*. Around 68% of students agreed that it is good to ask for clarification or directly question the individual using a direct communication style. This will allow the team to get clarity on thoughts and intent of the individual using an in-direct communication. For example, Elle said,

> *"When people are using more indirect communication it can help to ask them what they mean and to clarify if your interpretation of what they are saying aligns with their actual intent."*

Theme 2: *Acting as a moderator and suggesting turn-taking when someone overlaps the communication.* Around 70% of the students found that acting as moderator will help them to allow students to turn-take with sharing their thoughts. For example, Kim mentioned,

> *In order to address this problem, I would change the way meetings of the group function in terms of pacing towards a more turn-taking style and possibly involve someone who can function as a moderator in the group to make sure everybody can express their full opinions.*

Theme 3: *Using verbal communication for clarification and conducting research on gestures and non-verbal communication styles.* Around 60% of the students mentioned that asking for clarification is important when team members use non-verbal communication. For example, Elle said,

> *Furthermore, in a team environment, members may be from different cultures where styles of nonverbal communication can differ greatly, therefore to avoid*

any misunderstandings, I would ask clarification using direct communication but I will make sure my tone is respectful.

A majority of individuals (56%) also mentioned that they would like to look at the internet, read articles or research to learn about gestures used in other cultures. For example, Kim mentioned:

I feel like I could address this by doing some research into nonverbal communication and what gestures to use when.

From the results of the study, it can be concluded that PIMs were effective in helping students to understand different types of intercultural communication styles, and also helped students to identify the challenges and strategies to overcome the challenges while working in a team setting.

Discussion

The study was conducted in an undergraduate-level engineering classroom, and the results of the study are encouraging for engineering instructors. The study used online modules known as PIM to help students understand the different communication and pacing styles. Students were also engaged in a guided reflection where they were required to reflect on their experiences while working in diverse teams and also reflect on the challenges that they faced with communication and strategies that they might use to overcome them. The results of the IKC Value rubric revealed that students demonstrated a good understanding of verbal and non-verbal communication, empathy, openness, and cultural self-awareness. Non-verbal and verbal communication and empathy correspond to the *skills* component of the IKC Value rubric, cultural self-awareness corresponds to *knowledge*, and openness corresponds to the *attitudes* component of the IKC Value rubric. From the results, we can conclude that students were able to gain knowledge and develop an understanding of the skills and attitudes required when interacting and working in a diverse team setting. Similar results were observed in [11] the study demonstrated that the intercultural competence of the students improved after participating in Massive Open Online Courses (MOOCs) and guided reflection. The study also used the IKC Value rubric to assess the intercultural competence of the students and the study's results confirmed that upon completion of MOOCs, student reflections showed instances of cultural self-awareness, empathy, openness, awareness of cultural worldview, verbal and non-verbal communication, and curiosity.

The results of the study also demonstrated that students were able to reflect on the team communication challenges and the PIM helped students to identify the strategies to overcome the challenges. The study results are similar to the study conducted by Beaudry and Szalvai [29] as the study focuses on the importance of engaging students in intercultural assignments while working in a diverse team. Working in a diverse learning environment has helped students to identify the challenges of working with people from diverse backgrounds and also highlighted the benefits of working in a diverse work environment. Also a study by Swartz et al. [13] pointed out that prior to engaging in the virtual exchange, students perceived that working in a diverse team would be challenging but upon completion of their 6-week program, they had identified strategies to work in teams with students from diverse backgrounds. Studies have also demonstrated that

engaging students in guided reflection is an effective mechanism that helps them use their prior knowledge and critical thinking skills to understand the new knowledge [18], [30]. Similarly, in our study, we observed that engaging students in guided reflections and providing them an opportunity to reflect during the activity (reflection in action) and after the activity (reflection on action) has helped them to metacognitively reflect on their teamwork experiences and use their critical thinking to identify the strategies to mitigate the challenges.

Moreover, the results of the study emphasize the importance of curriculum integration in helping students to become interculturally competent. Especially in a discipline like engineering, students do not get enough opportunities to interact with students from diverse backgrounds [4] Therefore, integrating the concepts of intercultural competence can help students understand and appreciate cultural differences. It is also important to note that study-abroad programs are pursued by only 10.9% of students in the United States [10]. Therefore, embedding the aspects of intercultural competence into the engineering curriculum can help students develop necessary intercultural skills and create an interculturally trained workforce for the future.

Conclusion, Limitation, and Future Work

The study demonstrates the effectiveness of integrating intercultural learning concepts in an undergraduate-level engineering classroom. The results of the study showed that students were able to understand the aspects of intercultural communication. The PIMs helped them to reflect on their challenges and identify the strategies to overcome them. The study is overall encouraging for engineering instructors to integrate the concepts of intercultural learning into their curriculum, but the study does have some limitations: 1) the results of the study are based on the student reflections, and no student interviews were conducted to gain a deeper understanding of the student intercultural competence. 2) the data was collected through written reflections; validated surveys were not used to assess the intercultural competence development of the students. As a part of future work, we plan to conduct in-depth interviews to understand the intercultural competence development of the students and use validated instruments such as Intercultural Development Inventory (IDI) to assess the intercultural competence of the students. We also plan to conduct future studies to assess the long-term impact of intercultural development on the students and the level of autonomy students acquire through this course.

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Appendix

Table 1: Reflection questions asked via PIM

Reflection Question 1	One strategy for keeping differences in communication preferences or styles from causing conflict is to adjust your own preference or style to that of others -- that is, you "mirror" others. Consider the communication preferences or styles you have learned about in this module: pacing, direct v. indirect, and nonverbal. Give one example where you've made or routinely make an adjustment to "mirror" the preferences or styles of another person or a group of people.
Reflection Question 2	Again, consider the communication preferences or styles you have learned about in the module: pacing, direct v. indirect, and nonverbal. What is one preference or style that you would find very challenging to deal with in a team setting? Why would you find this challenging? What is one thing you might do to address this challenge?

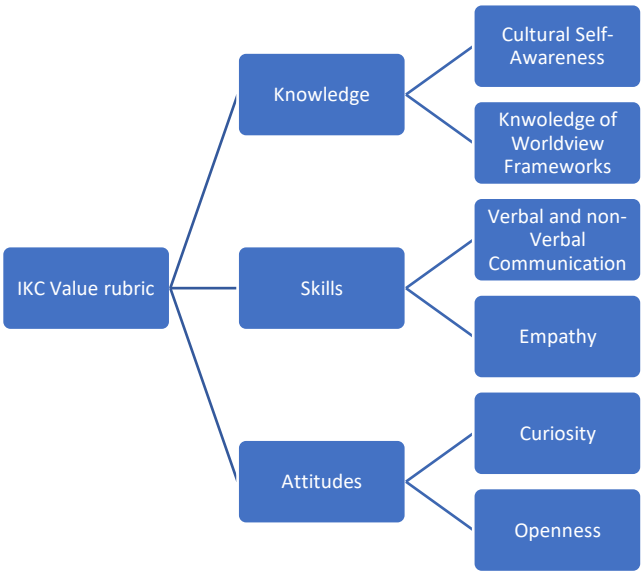

Figure 1:The constructs of AAC&U IKC Value Framework