



## Students' Perception of Collaborative Online International Learning

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# **WIP: Students' Perception of Collaborative Online International Learning**

## **Introduction**

Teaching and learning in the digital age harness the opportunities created by internet technologies to distribute and learn various information all over the world. This is commonly referred to as connectivism, and it values the impact of stakeholder information appraisal skills, virtual and personal communication skills [1], and the sense of cultural awareness. Collaborative Online International Learning (COIL), a type of connectivism, typically involves instructors and students from at least two geographically and culturally distinct areas who collaborate virtually on a common project for four or more weeks. The objective is to create a culturally diverse virtual environment where students can explore and enhance their interpersonal skills, and also, improve their intercultural competency skills. In this Work-in-Progress (WIP) paper, we present early findings of a COIL project from students' perspectives.

Social constructivism postulates that humans develop and construct knowledge through social interactions with others [2]. Thus, participating in collaborative social activity helps to acquire knowledge [2]. Hence, having students from two culturally distinct regions to collaborate is crucial for the development of intercultural skills. Thus, the objective of COIL is not necessarily to expose students to the experience of virtual collaboration, rather, to enhance intercultural competency skills while collaborating virtually. The project serves as a collaborative tool and must provide a challenge for the teams to design concepts, negotiate, build, or share perspectives to solve a problem [1, 3, 4]. The project could be a client-based or instructor designed project. Client-based projects typically have someone other than the instructor who serves as the client and works with the students to scope the project, identify project requirements, and then, work collaboratively to achieve the deliverables.

COIL and other technology-enhanced learning (TEL) are growing in popularity due to their convenience and cost-effectiveness [1]. These forms of collaboration, when carefully designed and implemented effectively, helps to contribute to the building of a global community of learners [5], which leads to more student and faculty involvement in the knowledge generation process [4, 6, 7]. COIL helps to overcome boundaries in the educational community [1]. In addition, COIL places less financial burden on the students compared to programs such as study abroad. However, it requires technological investments that most higher education institutions already have as part of their distance or e-learning tools.

In this study, a group of (12 out of 27) engineering technology student in a project management course from the University of Dayton collaborated asynchronously in a COIL project with peers (11 materials science and engineering students in an environmental engineering course) from the University of Ghana (UG). The projects, which were all client-based lasted for eight weeks during the spring 2018 semester.

Project 1 required the teams to redesign the Dayton International Peace Museum to make it more visually appealing while maintaining the Victorian style. The objective was to ensure that it will be easily recognized by pedestrians and other road users and hopefully increase traffic to the museum. Project 2 required the teams to design a vertical aquaponic system for the Five Rivers

Metro Parks in Dayton, Ohio, as well as other parks in Ghana. As part of the project, the student teams were required to identify vegetables to be grown in the system, and three fish breeds that can cohabit with at least one being exotic. Also, they were required to calculate the annual yield, cost, and other technical details as requested by the client. Finally, project 3 required the design of an *affordable* water filter to be used in a developing country.

Among the requirements of project 3 was the need to ensure that the filter could be built with materials local to the developing country. They were also required to estimate the useful life of the filter, and ensure that people with little to no training or education can easily install and use the water filter. As can be seen, all of the projects included some elements that warranted knowledge or research about things that may be unique to the respective geographical regions of the participating colleges. For example, the students who worked on project 3 needed to understand the economic climate of the developing country where the filter will be marketed, as well as the available resources for manufacturing the filter. Some of the information was not easily found on the internet and require collaboration with the COIL team to unearth them.

To be successful in collaborative learning, the students need to build trust among the collaborators. This makes them more comfortable, which helps to facilitate the learning process. Therefore, each student recorded a 1 to 3-minute video describing their background and any information they would want another person to know about them on the first day of work. In addition, they were asked to talk about their COIL expectations. The videos from all participating teams were exchanged among the faculties, and shared with their respective students. This was done in week four of the semester after they had been exposed to fundamental concepts of project management.

After the ice-breaking exercise, the projects were assigned to the teams to start the COIL process. Specific milestones such as the due date for research, and conceptual design review were given at the beginning of the project, and the teams were required to virtually meet at least once every two weeks to work on the project. The collaboration lasted for eight weeks and joint project proposals and final reports, and oral presentations were delivered as part of the project deliverables. At the end of the semester, an anonymous Google survey was administered to collect feedback about the participants' perceptions and experience from the project. The results of the survey are discussed later in this paper.

## **Literature Review**

The classroom has been evolving since the beginning of formal education. Different teaching styles, new technologies, changes in student populations, and test score data have challenged academia to keep advancing [8]. Institutions and teachers within institutions subscribe to different pedagogies. One such pedagogy practiced in today's classroom is collaborative learning. The collaborative learning classroom structure encourages interactions among and between learners and teachers alike to help students better understand concepts [9]. This approach is multifaceted and can encompass different themes based on implementation.

Generally, collaborative learning focuses on elements of teamwork, intercultural competency, embracing diversity, championing the journey to a solution, and conversation. In contrast to the

traditional pedagogy used in many institutions where the teacher teaches the student, collaborative learning takes a constructionist approach, guiding students to learn through an “examination of their own experiences” [10]. The lines of power in the traditional way of teaching are defined with the teacher standing at the front of the classroom, relaying the necessary information, holding all the knowledge and experience. The collaborative learning model uses a different approach where students are placed at the center of the classroom to promote active rather than passive learning [11]. Active learning challenges students to walk through a concept verbally, gain an individual understanding, then attempt to negotiate meaning with peers, and hopefully arrive at a shared understanding [12]. For this teaching approach to be effective in the classroom however, there needs to be a “joint intellectual effort by students, or student and their teachers together” [13].

Effective implementation of the collaborative learning approach can create a richer learning environment for both students and teachers. These beneficial attributes can range from cognitive skill development and an expanded view of scholarly activities to a greater tolerance for different perspectives and an increased interest in areas beyond the classroom [14]. Studies have shown that students who work in collaboration with other students rather than by themselves often do better performance-wise [15]. This suggests that a collaborative environment can be more effective than an environment that promotes individual competition. The competency of students can also increase in several different arenas when exposed to an effective collaborative learning environment. Diverse student groups can increase social competence, students’ intercultural awareness, and encourage the sharing of different decision-making process among students [16].

While the model is being refined with further research and experimentation, studies and reviews have revealed the challenges of implementing collaborative learning in today’s classrooms. Many of the disadvantages of collaborative learning stem from past methodologies in academia. Historically, classes have been sectioned off into block hours and classrooms have been designed to fit hundreds of students into a room where the focus is geared toward the person at the front. This accepted structure is “reinforced (both subtly and blatantly) by institutional reward systems that favor limited engagement in teaching” [13]. The journey to a more collaborative environment can be constrained by these ingrained constructs. Additionally, collaborative learning can be hindered by the students themselves. Some group members may refuse to collaborate, others may feel uncomfortable expressing their opinion in a group setting, while others may feel rejected or neglected by the group and its activities [17].

New forms of collaborative learning have been introduced in institutions as more teachers have implemented the style of teaching. The class setup can focus on group projects, simulations, discussion groups, geared toward stimulating the conversation. One such style, Computer-Supported Collaborative Learning (CSCL) allows students with limited face-to-face opportunities to work together, nationally and internationally [17]. CSCL models, made possible by technological innovations, can revolve around online forums, social networking sites, and other forms of video to facilitate communication [9]. However, careful attention should be paid to ensure technology use does not detract or distract from the collaborative learning atmosphere [18].

## Results and Discussions

The instructors designed and administered a Google survey which was responded by all of the participating students. Prior to this COIL, each of the students had been involved in some form of collaborative learning but this was the first time they participated in COIL. The questions centered around three core areas:

- a. Perception of the students on the effectiveness of COIL in the acquisition of employable skills
- b. Specific employable skills gained from the COIL
- c. Difficulties faced and how they were addressed during the COIL
- d. Intercultural competency skills students benefited from through the COIL

The first and third areas provide useful feedback which will help faculty members improve the COIL experience for future students, while the other two areas provide insight into students' perceived benefits of the COIL concerning the acquisition of employable and intercultural competency skills.

### **a. Perception of the students on the effectiveness of COIL in the acquisition of employable skills**

Eight of the 11 students from UG alluded to the helpfulness of COIL in acquiring employable skills. On a Likert scale of 1 (not effective) to 5 (highly effective), 6 students gave a score of 4 (effective) while two scored it as 3 (moderately effective). 11 out of the 12 students from the college in UD felt it was extremely effective (5) while one student gave a score of 4. It can be seen that the UD students ranked the COIL program higher in the acquisition of employable skills than their collaborators. This may be attributed to several factors such as the skills perceived to be highly desired in their respective job markets. One other reason may be the degree to which the students were involved in the program. Even though there were individual accountability checks, it is always a challenge to ensure equal participation in collaborative projects, and working virtually makes it more challenging. In all, over 86% of the students reported that the collaboration was successful or very successful.

### **b. Specific employable skills gained from the COIL**

The common vocabularies used in the perceived employable skills gained included, communication, confidence, patience and mediation, group working skills, compromise, and teamwork. About 14 out of the 23 responses mentioned or said things that implied they learned or improved their communication skills. Some comments that stood out were: "talking through problems is almost always the easiest solution", "listening to others carefully and respectfully", and "be more considerate with people." Three of the responses included comments that appreciated the opportunity to work virtually with "diverse groups" or "people from different backgrounds"; "I think working with people from other countries is a useful talent and is something that you aren't exposed to every day."

The students also responded to a question about the specific project management or interpersonal skills they utilized or benefited from. Among the vocabularies used were: effective communication (15 times), time management (10 times), leadership (4 times), cooperation skills, dynamic project scheduling, and dealing with different time management styles. It is worth

mentioning that some responses included multiple items, hence, adding up the frequencies may exceed the total number of responses received.

**c. Difficulties faced and how they were addressed during the COIL**

Among the difficulties faced as shared by the students is the language barrier. About 50 percent of the students had English as a second language but were very fluent. Some students responded that they initially struggled to understand their peers. This problem, which was echoed by 5 respondents was solved by repeating oneself, active listening, and getting more comfortable with the collaborators. Other problems included inability to meet more often to discuss progress, and difficulty in finding time slots where all team members could be present for meetings. This was not surprising since the collaborating institutions were in different time zones with a 4-hour time difference. Some students reported that they had to be flexible with their times to accommodate others.

Some students did not appreciate the fact that the projects were open-ended. Even though it was deliberate, they would have wished for a more specific project with detailed boundaries. It took several interactions with their respective clients and instructors to scope the projects which were among the experiences the instructors wanted the students to get from the collaboration. Three of the five students who complained about this issue acknowledged that frustrations were high at the beginning of the project but were able to overcome them after their second client meeting. Additional problems that stood out were: the lack of COIL experience, poor quality of work from some teammates, and uneven distribution of work. The students who provided these responses did not provide any feedback on how they overcame them. However, it appears that the majority (15) of the students utilized frequent and effective communication with the collaborating partners (including the client) to overcome most of the challenges they faced.

**d. Intercultural competency skills student benefited from through the COIL project**

The responses under this area fall under broad yet overlapping areas of communication, culture, and respect. These have been shown below.

**Communication:** Various comments were said about the importance of effective communication. Below are the specific benefits and comments provided by the students.

- I benefited from my communication, understanding different time zones, and accounting for different availabilities.
- Communication and how to deal with problems
- Learning to work across the language barrier
- Communicating to understand different zoning laws
- Communication (was mentioned 5 times)
- Listening
- When to interrupt people while speaking and ask whatever things were clear.
- Try to find a comfortable way to communicate with others. And ask directly if I have questions
- Effective intercultural communication
- I benefited from being able to listen to everyone's ideas and analyze each idea without bias

- Learning different platforms to share our work on so that everyone has access and can all read/understand each other's work
- It was helpful to discuss the research we did separately to gain a second opinion

**Culture:** a couple of the comments were also related to the cultural experience as seen below.

- Working with classmates from different cultures helped remind me that everyone is different and that needs to be taken into consideration when working in a group
- Being flexible to any idea even if it was new
- Different background allowed for a different thought process
- Learning from other cultures (was mentioned twice)
- I think I benefited from knowing about different cultures and how they work as opposed to how we work here
- Understanding the language barrier between different cultures and working around it
- Accepting peoples opinion on different materials
- Working with others through a language barrier
- Sharing different resources from a different culture
- I think working in a diverse group gives you more creative solutions that some people may never have heard of.

### **Respect**

- Respect for others
- Patience and empathy
- Persistency
- This project strengthened my patience and understanding
- Learned to cooperate
- Learned to respect different cultures

### **Conclusion**

Collaborative learning provides students with opportunities to enhance their interpersonal skills. When done with culturally diverse student teams, it further creates an environment where they can also enhance their intercultural competency skills. Quantifying the improvement in intercultural competence is a challenge. Even though some assessment tools are in the literature, they are typically not designed for short-term projects as in this study. In such cases, self-assessment appears to be a commonly used methodology in quantifying the subjects' perceived acquisition of critical intercultural skills.

In this study, student teams from two culturally and geographically distinct locations collaborated virtually on client-based projects for 8-weeks. This collaborative online international learning project aimed to create a culturally diverse environment for students to enhance their intercultural competency skills. At the end of the collaboration, the students completed a voluntary survey about their experience. The results indicate that the students generally perceived the COIL as successful. Effective communication, active listening, and

respect are some of the perceived intercultural competency areas students reported to have benefited from.

To start COIL, an instructor must first determine the objectives for the collaboration, nature or type of projects (client-based vs. non-client-based) that will be utilized, how long it will last, and assessment criteria. A COIL partner will then be identified from a region that has different linguacultural. This provides students with the desired environment where they can enhance their intercultural competency skills. The instructors will then discuss and create a shared objective and COIL outcomes. It is worth mentioning that an instructor should not necessarily adopt the entire course outcomes of the collaborator. However, it is important to agree on specific outcomes or expectations for the COIL section. This means that individual instructors can maintain the sovereignty of their respective classes but have a specific role to play in the collaboration. Items such as expected class size, number and size of teams, academic calendar, and starting and ending date for the COIL must all be addressed.

One other factor that has to be discussed is the technological resources available for students to utilize during the process. Because COIL is a virtual collaborative pedagogy, it is important to understand the availability and accessibility of virtual communication tools at the collaborating institutions. In addition, both instructors must ensure that participating students can effectively utilize such tools for collaboration. This will ensure that students do not focus on the technology but the deliberate interactions with their peers.

COIL can be synchronous, asynchronous, or a combination of the two. Synchronous COIL requires students and instructors to meet via a video conferencing medium at the same time during which the instructors will teach or guide the students as they work on the project. This depends more on the time zones of the participating institutions and requires the classes to be scheduled at the same time. On the other hand, asynchronous COIL does not require classes to be scheduled at the same time as individual instructors independently teach their respective classes but in close coordination with each other. The most important factor here is to ensure that each faculty is informed about each other's progress so that the COIL project can be assigned at the same time. Typically, the students will go through a series of ice-breaking exercises to help them build trust for the collaborators and establish a relationship before working on the projects collaboratively. Thus, the collaboration in asynchronous COIL is typically done outside the normal class time. However, the students may be required to provide proof off their meetings according to the standards established by the instructors.

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