

## **Exploring the Effectiveness of a Cross-Cultural Virtual Teams Exercise with Croatia- and U.S.-based Undergraduate Students**

### **Abstract**

The authors conducted a cross-cultural virtual team experiential exercise with 322 undergraduate students on 93 teams at three university campuses - two in the United States and one in Croatia. The purpose was to facilitate learning and skills enhancement for both cross-cultural collaboration and virtual collaboration as part of Organizational Behavior classes at the respective universities. Pre- and post-tests of cross-cultural efficacy and virtual team efficacy over the 6-week project demonstrated a significant increase in virtual team efficacy for traditional on-campus students (but not online students), but no significant increase in cross-cultural efficacy. We provide a description of the exercise, lessons learned, and suggestions for future use (including scalability to smaller class sizes).

### **Keywords:**

Cross-cultural teams; virtual teams; experiential education; international management education

## INTRODUCTION

Cross-cultural virtual teams continue to grow in importance and ubiquity in business (Mochaitis, Zander, & De Cieri, 2018; Society for Human Resource Management (SHRM) Foundation, 2016). The ability to work effectively on virtual and international teams has increasingly been a topic within the management education discourse (Alavi, Yoo & Vogel, 1997; Alstete & Beutell, 2004; Duus & Cooray, 2014; Ramanau, 2016; Schwartzman, 2006; Wang & Haggerty, 2011) as scholars are continually challenged to identify ways to sustainably train and evaluate students' ability to succeed in the work environment of today and to prepare for future experiences (Arbaugh & Hwang, 2012; Baldwin & Trespalacios, 2017; Chen, Donahue & Klimoski, 2004; Goodman & Bray, 2015; Hardin, Fuller & Davison, 2007). In particular, extant research points to a need for both cross-cultural engagement opportunities combined with exposure to virtual team tools that enhance the ability for geographically-dispersed students and employees to successfully and respectfully engage and complete complex tasks toward a common goal (Aubert & Kelsey, 2003; Cagiltay et al, 2015; Cascio & Shurygailo, 2003; Pinjani & Palvia, 2013).

Traditional management education often includes a variety of case studies, research on cultural differences, and individual and group projects as modes of teaching and training future business leaders (Chen, Donahue & Klimoski, 2004), but these approaches may not be enough to provide adequate experience in cross-cultural virtual teams. Indeed, Erez et al., (2013, p. 348) asserted that "management education programs should promote a hands-on experience in working in virtual multicultural team settings," and recent research has demonstrated that guided participation on cross-cultural virtual teams can facilitate students' cultural intelligence and cultural identity (Erez et al., 2013) and students' learning, attitude, and behaviors (Taras et al.,

2013). However, while the emerging extant research on student learning in cross-cultural virtual teams is promising, these studies are typically quite large and complex (e.g., the X-Culture project) and often focus on graduate students (Erez, 2013). As other research (Alstete & Beutell, 2004; Cagiltay et al., 2015; Hardy & Tolhurst, 2012) has suggested, there is a need to provide similar types of experiences to undergraduate students.

We decided to approach this challenge by adapting an established, “tried-and-true” traditional team project to a cross-cultural virtual team context. We also decided to structure the project in such a way as to be able to address two fundamental questions. First, could this type of project demonstrably increase students’ efficacy about working in virtual teams, efficacy about working in a cross-cultural context, and overall enthusiasm for this type of project? Second, do learning environment (on-campus vs. on-line) and country of instruction, respectively, have an effect on such efficacy and enthusiasm?

The purpose of this paper is to demonstrate how we adapted an established team project into a cross-cultural virtual student team project, and to analyze and discuss the results of this project. In order to do so, we begin with a brief review of the literature about cross-cultural virtual teams, focusing on research about management education of the same. We then offer a detailed description of a cross-cultural virtual team project with undergraduate students at three different campuses in two countries, including both quantitative and qualitative evidence of the project’s efficacy in achieving learning outcomes. Finally, we discuss lessons learned in the project, offer suggestions about how to adapt the project to suit differing class sizes and needs, and present some directions for future research.

## LITERATURE REVIEW

## Virtual Cross-Cultural Teams in Management Education

The need for virtual education experiences in university management programs has been researched fairly extensively (Alavi, Yoo & Vogel, 1997; Alstete & Beutell, 2004; Duus & Cooray, 2014; Ramanau, 2016; Schwartzman, 2006; Wang & Haggerty, 2011). Researchers have identified the need for students to engage and complete tasks in a virtual format to help improve the skills and virtual competence needed as they prepare for today's workplace (Wang & Haggerty, 2011; Wolf, Wood-Kustanowitz, & Ashkenazi, 2014), and the ability to collaborate virtually is a necessary skill for increasing virtual competence (Hertel, Konradt, & Voss, 2006). In a similar vein, Duus and Cooray (2014), in a study about cross-cultural teamwork in a virtual environment, emphasized that these types of activities "build confidence in a range of skills and prepares students for future employment" (p. 244). Thus, the need for virtual collaborative projects, such as the one in this study, is essential for better learning (Hasler-Waters & Napier, 2002).

In addition to the aforementioned studies that acknowledge the importance of virtual team education and experiences, other research suggests that adding in a cross-cultural element may further enhance the benefits of such education. For example, Duus and Cooray (2014) found that participation in cross-cultural virtual teams helped students navigate intercultural teams and generate new ideas to solve business problems more creatively. Likewise, Hu (2009) asserted that an international virtual team project between Americans and Chinese students in a marketing class gave students a competitive advantage in the global marketplace. Perhaps most importantly, some studies (Erez et al., 2013; Ramsey & Lorenz, 2016) found evidence that the effects of virtual, cross-cultural learning may persist over time, thus indicating that such projects might be an effective way to drive lasting change. Taken together, these studies support the

notion that student cross-cultural teams projects are important learning tools, and that assessment of their effectiveness is worthy of study.

### **Self-efficacy, Culture, Online Learning, and Enthusiasm**

Self-efficacy is an important antecedent to both job satisfaction and job performance (e.g., Judge & Bono, 2001) and also plays an important role in online learning (Shen et al., 2013); thus, examining a project's impact on student self-efficacy is an excellent way to assess the effectiveness of the project. Confidence – in the form of self-efficacy - about working in a *cross-cultural* virtual environment may be an especially important outcome in management education. Notably, Hardin, Fuller, and Davison (2007) found that cultural background may play a role with respect to self-efficacy in virtual teams, but also that “regardless of cultural background, team members reported less confidence in their ability to work in virtual team environments than traditional face-to-face environments” (p. 130). Moreover, their study found that students with more individualistic (vs. collectivistic) cultural identities have higher self-efficacy in both groups and virtual team experiences (p. 130). These findings point to the importance of research to better understand the importance that culture has on virtual team dynamics (Alstete & Beutell, 2004; Ramanau, 2016). Similarly, a host of factors including make-up of teams (Olson & Kalinski, 2017), the strategies used for engagement (Hasler-Waters & Napier, 2002), and the importance of the online learning tools (Stoerger & Krieger, 2016), all impact the effectiveness of online experiences as compared to face-to-face learning with similar projects. Taken together, this research suggests that examining self-efficacy as an indicator of project effectiveness is reasonable, and that looking for possible differences because of culture and method of instruction (online vs. in-person) is prudent.

Finally, we wanted to assess student enthusiasm for the project in some way. Although some evidence suggests that enthusiasm may play a role with respect to outcomes such as student engagement (e.g., Kahu, 2013), our purpose in attending to enthusiasm was more practical in that we simply wanted to develop a sense of how students were reacting to the project. One could plausibly argue that enthusiasm is an imperfect way to assess student interest, and we would tend to agree; nevertheless, our collective past experience suggests that if students are not at least somewhat engaged in the project, then the project is likely to be less than fully successful, no matter how noble the reasons are for conducting it. As such, we attempted to assess overall student enthusiasm before, during, and after the project.

## **METHODS**

### **Sample**

In total, 322 undergraduate organizational behavior students on 93 teams participated in the study. Students were enrolled at two different universities and three different campuses: a public university in the United States and a private university with campuses in the United States and Croatia. Most students attended on-campus classes; however, 52 students attended an online class (25 from the U.S. private university and 27 from the Croatian private university). Table 1 shows the breakdown of students by class section at each campus.

### **Insert Table 1 here**

Each team consisted of 3-4 students. The target team composition was three members (one from each campus); however, due to an unequal number of students across campuses and sections, the actual breakdown was as follows: 58 teams with three members (49 on-campus

section teams with a member from each campus; 8 online section teams with one member from the U.S. private university and two members from the Croatian private university; 1 online section team with two members from the U.S. private university and one member from the Croatian private university) and 35 teams with 4 members (28 on-campus section teams with one member from the U.S. public university, one member from the U.S. private university, and two members from the Croatian private university; 7 online section teams with two members from the U.S. private university and two members from the Croatian private university). Response rates ranged from 72-90% for each wave of data collection, with a total of 193 students responding to all 3 waves for a final response rate of 60%.

### **Project Design**

The project consisted of two main phases and multiple deliverables, and the entire project was worth 30% of the overall class grade for all students. Several of the authors have used a similar project for many years in on-campus undergraduate classes, and have found it to be a useful tool for both teaching class concepts as well as for creating an experiential learning exercise for team functioning. Figure 1 shows the timeline of the project.

#### **Insert Figure 1 here**

In Phase 1 (10 days), each team was instructed to create a team contract. This assignment had two overlapping goals: 1) to provide an initial “get to know you” experience by fostering required team interaction and 2) to help students think through the overall project and create guidelines for how the team would function. We distributed a guide to creating a team contract in order to provide a framework for students to follow. All teams followed the suggested format and created contracts that included individual and collective goals for the project, roles and

responsibilities for each member, and procedures to follow in the event that a team member(s) failed to fulfill his/her obligations to the team (i.e., slacking). This phase was worth 5% of students' overall grade with full credit awarded for an on-time, reasonably well-written contract. Phase 1 was followed by an 11 day inactive period to account for a week long break at one of the universities.

In Phase 2 (4 weeks), each team was responsible for identifying a television show (typically a 30 minute sitcom), watching it, and analyzing it according to theories and concepts from the class. Each team was then required to complete a 7-9 page report that included the following sections: brief summary of the episode, concise identification of the main issue in the episode framed in terms of theory and concepts from the class (e.g., "the main issue in the show was poor communication among the main characters"), analysis of the main issue according to three different theories or concepts (e.g., three communication theories or concepts), identification of three lessons learned by the team from events in the show and their own subsequent analysis, application of those lessons to their future endeavors, and finally a brief summary of their own internal team processes (e.g., how often they interacted and by what means, how decisions were made, etc.). Teams were required to submit a partial paper draft at the halfway point of Phase 2 (about 2 weeks into Phase 2) that included (at a minimum): identification and summary of the chosen show, identification of the main issue, and identification of the three theories or concepts to be used to analyze the show. Students had the option of submitting more information, or even a complete draft. Partial drafts were returned to students within 5 days with pointed feedback for improvement from one of the instructors. Because we wanted the partial draft to be developmental, it was not graded per se; however,



students were advised that failure to complete the partial draft would result in a deduction in the final grade.

The final paper, worth 15% of the class grade, was due at the end of Phase 2 (4 weeks after beginning Phase 2). To help ensure fairness and establish grading norms, all graders (the five class instructors plus the project coordinator) independently graded a common set of three papers randomly chosen from the 93 final papers. Graders then held a meeting in which each grader explained his/her grade, and all graders arrived at a consensus grade for each of the three papers. Following this norming procedure, each grader was responsible for grading approximately 15 papers each. Means and variances for each grader's 15 assigned papers were computed and compared with one another to help guard against systematic grade differences among graders. No significant differences were found, and final grades were assigned. The team grade was assigned to each member of the team, unless the team's contract specified a different method of allocation (which happened in only a few cases).

In addition to the team deliverables in Phase 2, each student was required to complete a structured self-reflection paper at the end of each of the 4 weeks of Phase 2 (all together worth 10% of the final class grade). These short papers were designed to reinforce learning through reflection, as well as to provide students a way to earn points that was independent of other team members. Paper 1 (end of week 1) focused on designated teams roles and initial team functioning. Paper 2 (end of week 2, which was also after the draft was due) focused on current team functioning and anticipated future team functioning. Paper 3 (end of week 3) focused on cross-cultural analysis of all team members, including oneself. Paper 4 (end of week 4, after final paper was submitted but not yet graded) focused on team functioning and overall lessons learned from the project.

## Measures

*Cross-cultural Efficacy.* Intercultural confidence was measured with the Interaction Confidence sub-scale of Chen and Starosta's (2000) Intercultural Sensitivity scale. This scale consists of 5 items on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). The items included "I am pretty sure of myself in interacting with people from different cultures", "I find it very hard to talk in front of people from different cultures" (reverse coded), "I always know what to say when interacting with people from different cultures", "I can be as sociable as I want when interacting with people from different cultures", and "I feel confident when interacting with people from different cultures." The coefficient alpha was .81 for time 1, .81 for time 2, and .76 for time 3.

*Virtual team self-efficacy* was measured with 4 items adapted from Hardin, Fuller, and Davison's (2007) Virtual Team Self-Efficacy scale. The following items were rated on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*): "I believe I have the ability to collaborate with remote group members", "I believe I have the ability to do teamwork in a virtual environment", "I believe I have the ability to share information with remote group members", and "I believe I have the ability to do work with people who cannot physically get together to meet." Coefficient alpha was .84 for time 1, .92 for time 2, and .92 for time 3.

*Enthusiasm* for the project was measured with a single item, "Describe your current level of enthusiasm for this project." Responses ranged from 1 (*not at all enthusiastic*) to 5 (*extremely enthusiastic*).

## RESULTS

### Quantitative Data

In order to examine changes in virtual team efficacy, cross-cultural efficacy, and enthusiasm, data were analyzed using 3 x 2 x 2 repeated measures ANOVA. Time was treated as a within-person factor (Time 1, Time 2, and Time 3) and country of instruction (Croatia and USA) and method of instruction (online and on campus) were included as between-subject factors. Bonferroni's correction was used to examine pairwise comparisons for significant effects. A significance level of .05 was set for all tests. Means, standard deviations, and correlations of the dependent variables are included in Table 2. Table 3 presents the results of the repeated measure ANOVAs.

**Insert Table 2 and Table 3 here**

*Virtual Team Efficacy.* The repeated measures ANOVA showed a significant time by online interaction effect [ $F(2, 378) = 3.41, p < .05$ ] showing that on-campus students reported changes in virtual team efficacy to a greater degree than students of online instruction did (see Figure 2). Pairwise comparisons indicated that virtual team efficacy was significantly higher at Time 3 (Estimated Marginal Mean = 4.53) than Time 2 (Estimated Marginal Mean = 4.30) or Time 1 (Estimated Marginal Mean = 4.27) for students of on campus instruction. There were no significant differences for online students. Furthermore, there was a significant between-person effect of country [ $F(1, 189) = 6.10, p < .05$ ], such that virtual team efficacy was significantly higher for students in Croatia than in the US across all three time points.

*Cross-Cultural Efficacy.* There were no significant within-subjects effects for cross-cultural efficacy; however, the overall time effect ( $F(2, 378) = 2.51, p < .10$ ) and time by country interaction ( $F(2, 378) = 2.64, p < .10$ ) were approaching significance (see Figure 3). The trend suggested a stronger increase in cross-cultural efficacy for Croatian students than American students. Furthermore, there was a significant between-person effect of country [ $F(1, 189) =$

13.02,  $p < .01$ ], such that cross-cultural team efficacy was significantly higher for students in Croatia than in the US across all three time points (see Figure 3).

*Enthusiasm for the Project.* Mauchly's Test of Sphericity (1940) indicated that the assumption of sphericity had been violated for the tests of enthusiasm, ( $\chi^2(2) = 36.51, p < .01$ ), therefore, the Greenhouse-Geisser correction (Abdi, 2010) was applied. The repeated measures ANOVA showed a significant within subject effect of time [ $F(1.7, 323.2) = 3.70, p < .05$ ], whereas none of the within subject interactions were significant. Pairwise comparisons indicated that enthusiasm was significantly stronger at Time 3 (Estimated Marginal Mean = 3.21) than Time 2 (Estimated Marginal Mean = 2.94). (See Figure 4.) Furthermore, there was a significant between-person effect of country [ $F(1, 190) = 10.69, p < .001$ ], such that enthusiasm was significantly higher for students in Croatia than in the US across all three time points.

### **Qualitative Data**

In addition to results from quantitative survey data, we also collected student comments from each of the four individual reflection papers. We paid particular attention to the comments in the fourth and final reflection paper (collected just after the final team deliverable was submitted, but before grades and final feedback were returned). We did so with an eye towards garnering a better understanding of the students' experience. In this section, we organize some representative student quotes along with our brief commentary on them.

### ***Changes in virtual collaboration efficacy***

While the quantitative results indicated an increase in virtual team efficacy for on-campus students, the content of what actually developed was highlighted in the student comments. The US-based students seem to be mostly focused on developing communication skills, as many of

their comments focus on communication as the key ingredient to successful virtual collaboration, and more specifically, the across-time-zone communication:

*“The biggest lesson I have learned from this project is that communication does take time. Communicating with others in different countries requires extra planning and more patience. We are so used to an immediate response time that waiting to hear back from teammates about a plan or deadline may be frustrating.”*

*“The difference in time zones played a HUGE part in our project hindering progress by making us wait for feedback. As a result, I picked up the habit of checking my inboxes regularly and will continue to do so.”*

*“I think the biggest lessons learned were from where our team ran into challenges. These were in the areas of communication and time management. All of the issues we had stemmed from communication, or rather a lack thereof.”*

Besides communication, a wide-range of lessons learned regarding virtual collaboration was observed. Some of these topics include time management skills in virtual teams, as portrayed through comments from Croatia-based students:

*“I think that the biggest lesson learned here is time management. It is very important how you manage your time and to know the priorities. After that, everything is very easy.”*

*“My biggest lesson is that you can’t put off projects if you work with more people. I will definitely put more time into projects and start earlier in the future.”*

*“The biggest lesson that I’ve learned from this assignment is how to cope under pressure. This project was a real rollercoaster, with many unexpected ups and downs, but that’s exactly why I liked it. I was faced with a lot of uncertainty, my actions had to be immediate, and the communication with other students had to be perfect in order for us to repair the damage in time. As much as it was stressful, it was a true-to-life experience, where not everything went smoothly, but we chose to put our frustrations aside and focus on getting proper work done in time.”*

An important lesson about the joy of finishing work on time - stemming from time management skills - was acknowledged by both Croatia- and US-based students.

*“I learned how nice it feels when you do things on time.” (Croatia-based student)*

*“I will be more effective in the future because I will definitely have better time management skills. That is something I had to learn to deal with - the time zone difference. It felt good and I felt accomplished when I got the work done earlier than*

*I really needed to. It also relieves stress because it wasn't done at the last minute.”  
(US-based student)*

Also, students were finding new appreciation for utilizing technological advancements in collaboration tools , as the following comments illustrate:

*“Next time, I would try to find a common technology that we could all use that is fast and efficient like GroupMe or WhatsApp.” (US-based student)*

*“If I had to do this project over .. one main thing I would change is the means of communication because strictly email was not enough.” (US-based student)*

*“I realized how challenging it is to work with someone in a different part of the world, but at the same time with the technology available, it was effortless.”  
(Croatia-based student)*

### ***Changes in cross-cultural efficacy***

The quantitative data hinted at only a marginally significant increase in cross-cultural efficacy. Given that this was one of the main objectives for this project, we were curious to learn more about the background of these results. In studying students' comments regarding cross-cultural issues they encountered, we noticed a significant stream of complaints pertaining to cross-cultural communication challenges, such as:

*“The biggest lesson and most important that I learned from this is how hard working with people from different countries really is and that you really have to put in the time and effort if you want to get the best outcome from every single person.”  
(Croatia-based student)*

On the other hand, the examples of positively tinted comments regarding the ease of cross-cultural collaboration seemed to be the predominant ones, represented through comments such as:

*“I've learned that it's quite easy to work with colleagues from the US. Other than that, I've realized that seeing people in person while coordinating something is not crucial for the success of a project.” (Croatia-based student)*

*“The biggest lesson I learned was that it isn't scary or as hard as you might think to work with those from a different culture, but that it can also bring a new point of view to the project that can be very helpful and insightful.” (US-based student)*

Overall, the following comment submitted by a Croatia-based student captures the essence of the message that was intended to be delivered to our students:

*“The lesson I learned a long time ago in my life but strongly confirmed in this project is that Diversity is a beautiful thing. Each individual is made of its unique characteristics, beliefs and values. When different individuals are put in a team to work together, great ideas can come out of it. It just takes a respect toward each other and a bit of understanding the different culture.”*

Taking qualitative data into consideration, we could conclude that the average student feared cross-cultural collaboration prior to joining this project. They worried it would be too difficult, only to find it easier than anticipated, and actually very rewarding. Even though the quantitative data was not as distinct, the qualitative data reveals that the project was successful in opening students toward cross-cultural collaboration. By allowing students to experience first-hand the ease and simplicity of adapting to diversity, and later building upon it to produce even better results, we believe students had an amazingly valuable learning experience.

***Student enthusiasm.*** Both the quantitative and qualitative data clearly showed the higher level of enthusiasm that Croatia-based students were expressing. In assessing the comments students provided in their final journal reflection, there were almost no negative comments shared by Croatia-based students. The ones that were negative were fairly benign, such as:

*“Talking to someone in person is so much better than just texting all the time. All of us were so busy during this time that we didn’t really have a lot of time to communicate. As a result of this project I think that I will be more willing to see my teammates in person.”*

*“The biggest lesson I have learned is that there will always be one slacker in a random team.”*

*“I personally saw this team project to be about the same thing as every other project I’ve been a part of at my college, so I don’t really think it’s done anything special to make me more effective in the future.”*

Contrary to the mild complaints from Croatia-based students, some of their US counterparts seemed to feel that this challenge was too intense, and expressed it through comments such as:

*“The time zone was different and it was hard to be on time to communicate with the team.”*

*“I will not be engaging in virtual teams again unless it's company work. The stress resulting from cross-country virtual collaboration is strenuous.”*

*“Working without actually meeting with people is a terrible idea for me. I need faces to associate with, otherwise I become immediately uninterested in pursuing action.”*

Perhaps this difference could be explained through the cultural background. While Croatia has a more laid-back, Mediterranean-style culture, US students tend to be more concerned with performance. Namely, while many US students openly complained about the time zone difference being a huge hassle, as well as waiting several hours for the answer to be received, a Croatian student reflected in a more laid-back tone, depicting the typical approach there:

*“In the future... I would watch out more for time zones, so I don't text people in the middle of the night.”*

On the other hand, there were also many intensely positive reflections from Croatian-based students, such as:

*“I loved this virtual project!”*

*“I would be happy to experience and work on more projects like this one during my studies!”*

*“I am very grateful and thankful for this opportunity, since it gave me a lot more understanding and made me more familiar with this kind of work. Therefore in future projects, this type of team work won't be such a challenge for me, as I will be more prepared for it and I will know what to expect.”*

The US-based students expressed their satisfaction as well, although through more modest expressions, both in the volume and wording of such feedback. Still, there were plenty of US-based students that seemed to be very satisfied with the entire project, as evident in comments such as:



*“Overall, the concept of this project is great.”*

*“I really enjoyed this project and meeting students from different schools and countries – thank you for organizing it!”*

*“The biggest lessons I learned from this project is doing a group project is not difficult AT ALL. People make group projects difficult. As long as there are people who are willing to put the work in and contribute, there will be no problems.”*

*“This ended up being a really fun project to work on and it was really awesome getting to work with students from another country.”*

*“If we had to start from the beginning, I would want to do the project the exact same way. We had great team chemistry and worked great together.”*

## **DISCUSSION**

To frame our discussion, we return to our original questions. First, could this type of project demonstrably increase students’ efficacy about working in virtual teams, efficacy about working in a cross-cultural context, and overall enthusiasm for this type of project? Second, do learning environment (on-campus vs. on-line) and country of instruction, respectively, have an effect on such efficacy and enthusiasm?

With respect to the question about increasing students’ efficacy about working in virtual teams, the answer appears to be a qualified yes. That is, the data indicates an increase in efficacy for on-campus students, but not online students. This finding makes sense, given that online students in both classes would already have been in class for several weeks before the project began. Presumably, the skills needed to fully participate in an online class would also apply to a virtual team project, thus mitigating any increase in efficacy resulting from the virtual team project alone. As we continue to see the use of virtual teams in various industry environments increase, this research finding would suggest the need for additional studies to understand the educational environments and projects that may aid in student virtual team skill obtainment.

Different educational methods that include virtual learning components will be critical to study as instructors prepare students for their future careers.

The lack of a statistically significant increase in cross-cultural self-efficacy was somewhat surprising. In retrospect, we realize that the project itself did not necessarily engender any explicit cultural exchanges. Neither the structure of the project (e.g., no requirement to learn about other team members' home cultures) nor the requirements of the deliverable (e.g., no requirement to analyze the proposed solution in light of cultural differences) were explicitly focused on culture. As a result, we suspect that many teams proceeded to work on the project, and only dealt with cultural issues if they arose during the course of the project. This finding underlines the importance of intentional and strategic integration of culturally relevant projects. In order to engage students in conversations around culture and difference in a virtual space, much like in industry, there is a level of intentionality and purposeful assignment of questions and activities that lead to conversations around culture. This finding supports the idea that instructors cannot assume students will engage in conversations around culture purely through the act of teamwork alone. Future research is essential in understanding what types of virtual team assignments and projects help engage students in conversations around culture, race, and difference to increase cultural sensitivity and confidence.

Finally, the overall increase in enthusiasm may be interpreted as a sign that the project was generally well-received by students. Future studies could add questions about institutional expectations and interest in different global businesses and market models in order to help gain an understanding about the differences in enthusiasm among cultures to identify if it is based in cultural, in-group dynamics, or other factors.

### **Lessons Learned**

This section is intended to highlight the types of issues and opportunities that arose during the project. For each item, we give a brief summary of the issue as well as a brief reflection on possible ways to deal with the issue.

*Hands on vs. hands off.* At the risk of sounding trite, almost all of the important considerations with respect to the project can be placed along a continuum reflecting the amount of guidance and structure provided to the students. On the one hand, the project may be designed to be “hands on”: tightly controlled, with well-specified directions for almost every aspect of the project. Specifying when and how to interact, providing a fill-in-the-blank version of a team contract, showing numerous examples of previous deliverables, and providing an inflexible grading rubric can have its advantages. Doing so might allow students to experience some of what participating on a cross-cultural virtual team is all about. Further, “handling” most of the logistical details can allow for interaction among the students and a focus on the deliverable itself. On the other hand, a more “hands off” approach can potentially allow for richer learning to occur. In our experience, students who have encountered and overcome unexpected problems (e.g., a misunderstanding due to language or cultural differences) have benefitted most from the project, even though the in-the-moment frustration level was high. There is no one-size-fits-all solution to this dilemma. We suggest that instructors give careful thought to the overall process and try to pick good places to provide structure while allowing for some ambiguity.

*Scalability.* This project can be conducted effectively with as few as two classes (one each at different locations). As the scale of the project increases, both in terms of number of students, number of locations, and number of instructors, the level of complexity increases as well. Adding more students is relatively straightforward, so long as the student headcount is

relatively balanced among locations. Adding more locations can also be relatively straightforward, especially if the additional locations are part of the same culture as an incumbent participating location; however, adding an additional location from a new culture can present challenges at the level of project execution and perhaps at the level of project design (i.e., if the project deliverable(s) has a specific cultural dimension to it). Adding more instructors to the project may be the most difficult challenge, for reasons explained in the next section.

*Instructor interaction.* Constant and meaningful instructor interaction is vitally important at all phases of the project. It is nearly impossible for instructors to over-communicate. In the pre-project planning phase, instructors need to agree upon the aims and scope of the project, the project timeline, the value of the project for student grades, and goals and methods of assessments in the projects. Further, they need to create all documents and artifacts for student use in the project, develop a plan for instructor communication during the project, and agree upon responsibilities for giving student feedback and grading.

*Responding to student inquiries.* One of the biggest challenges is responding to student issues and questions. Much like parents who need to present a united front to their children, instructors need to provide consistent responses to students. Therefore, instructors need to develop a mechanism for addressing student concerns. This mechanism can take the form of established time-based discussion periods (i.e., a weekly meeting) or an episode-driven response (e.g., one instructor emails the other instructors about a particular issue, and all respond within 24 hours). Perhaps the most challenging aspect of instructor interaction involves informal feedback to students concerning the project. Even with well-articulated guidelines for the project or a rubric, questions inevitably arise that require judgment. There is a balance between making sure all instructors are in agreement and providing timely feedback. Ironically, otherwise minor

details can cause large problems when students on the same team are given even somewhat differing answers by different instructors. A possible solution to this problem is to be very transparent with students about the process of giving timely and accurate feedback while addressing the need for all instructors to be in agreement on a particular issue. Agreement about grading is especially important. Our method for grading (explained in the methods section) proved to be effective, but there is still a good deal of work to do regarding reassuring students. Students are often concerned that an instructor from a different university or even a different country may be grading his/her team's final deliverable. We have found that students feel reassured when they are informed that 1) grading is cross-validated among all instructors and 2) that a student's final course grade is always under the direct control of his/her actual instructor.

## **Conclusion**

As we build educational experiences that support the future success of our students in industry, we must continue to integrate new technology and team engagement opportunities into the classroom. This study reinforced the importance of intentional cultural projects if cross-cultural competency skills building is a learning outcome, and that engagement with online virtual tools prior to virtual team work helps increase student efficacy with online tools. For instructors who want to be responsive to the needs of increasingly virtual global industries, to create engaging student learning activities, and see the importance of cross-cultural competency building in diverse work settings, they must look to taking the traditional classroom and helping it learn new tricks of the virtual age.

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**Table 1****Sample Breakdown by Class, University, and Instruction Method**

	University		
	U.S Public	U.S. Private	Croatia Private
on campus section 1	39 (A)	39 (B)	38 (E )
on campus section 2	38 (A)	40 (C )	37 (E )
on campus section 3	n/a	n/a	39 (E )
online section	n/a	25 (D)	27 (E )
Total	77	104	141
Grand Total	322		

**Note:** letters in parentheses represent the instructor for the section

**Table 2****Descriptive Statistics and Correlations**

Variable	M	SD	1	2	3	4	5	6	7	8
1. Virtual Team Efficacy T1	4.23	.648								
2. Virtual Team Efficacy T2	4.28	.747	.50**							
3. Virtual Team Efficacy T3	4.45	.73	.37**	.51**						
4. Cross-Cultural Efficacy T1	3.90	.713	.36**	.40**	.35**					
5. Cross-Cultural Efficacy T2	3.92	.74	.38**	.47**	.37**	.75**				
6. Cross-Cultural Efficacy T3	4.00	.72	.25**	.35**	.44**	.68**	.68			
7. Enthusiasm T1	2.94	.95	.32**	.33**	.19**	.27**	.34**	.28**		
8. Enthusiasm T2	2.92	.99	.30**	.37**	.31**	.25**	.31**	.22**	.63**	
9. Enthusiasm T3	3.10	1.17	.22*	.31**	.39**	.18**	.23**	.32**	.38**	.45**

*Note.*  $N = 199-243$

**Table 3****Repeated Measure ANOVA Results**

	Virtual Team Efficacy	Cross-Cultural Efficacy	Enthusiasm
<b>Within-Subjects Effects</b>			
Time	F (2, 378) = .89, n.s.	F (2, 378) = 2.51, p <.10	<b>F (1.7, 323.2) = 3.70, p&lt;.05</b>
Time *Country	F (2, 378) = .60, n.s.	F (2, 378) = 2.64, p <.10	F (1.7, 323.2) = .90, n.s.
Time* Instruction	<b>F (2, 378) = 3.41, p&lt;.05</b>	F (2, 378) = 1.68, n.s.	F (1.7, 323.2) = .02, n.s.
Time*Country* Instruction	F (2, 378) = .47, n.s.	F (2, 378) = 1.23, n.s.	F (1.7, 323.2) = .27, n.s.
<b>Between-subjects Effects</b>			
Country	<b>F (1, 189) = 6.10, p&lt;.05</b>	<b>F (1, 189) = 13.02, p&lt;.01</b>	<b>F (1, 190) = 10.69, p&lt;.001</b>
Instruction	F (1, 189) = .06, n.s.	F (1, 189) = .26, n.s.	F (1, 190) = 1.69, n.s.
Country*Instruction	F (1, 189) = .32, n.s.	F (1, 189) = .27, n.s.	F (1, 190) = 1.17, n.s.

Figure 1

Project Timeline

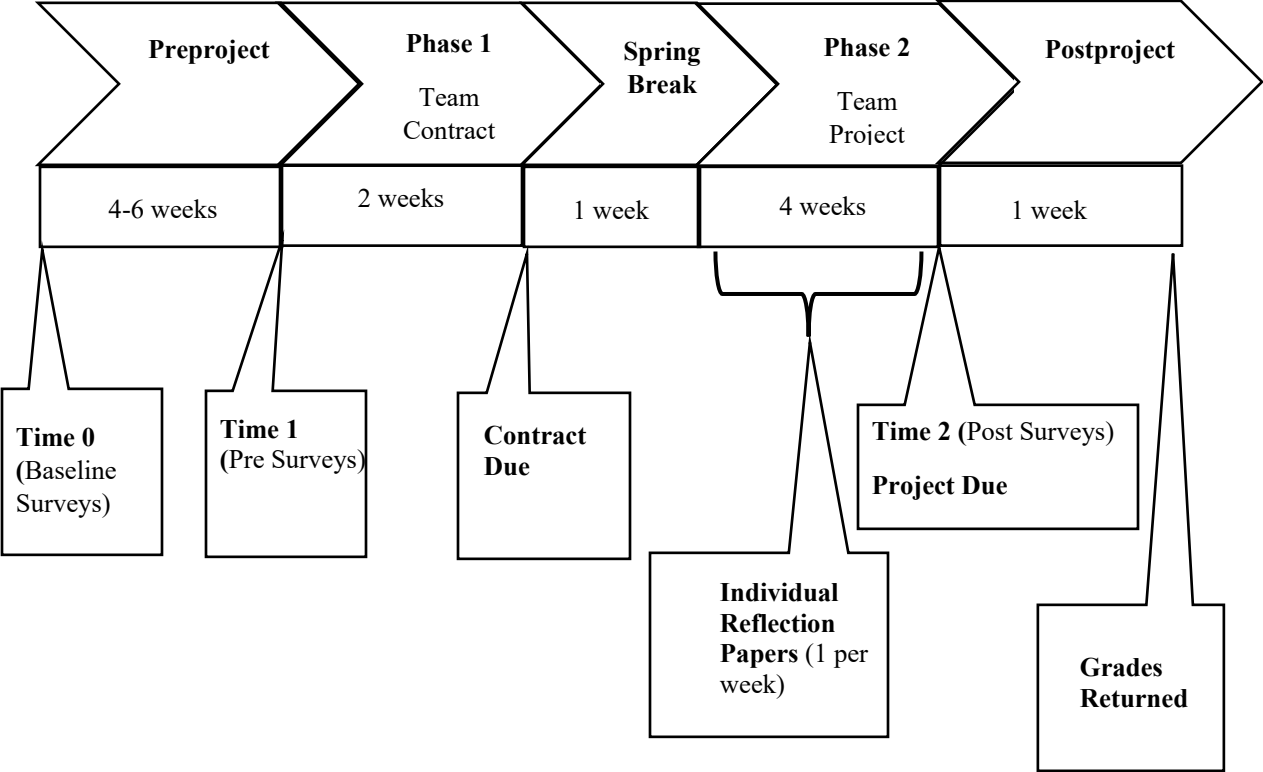
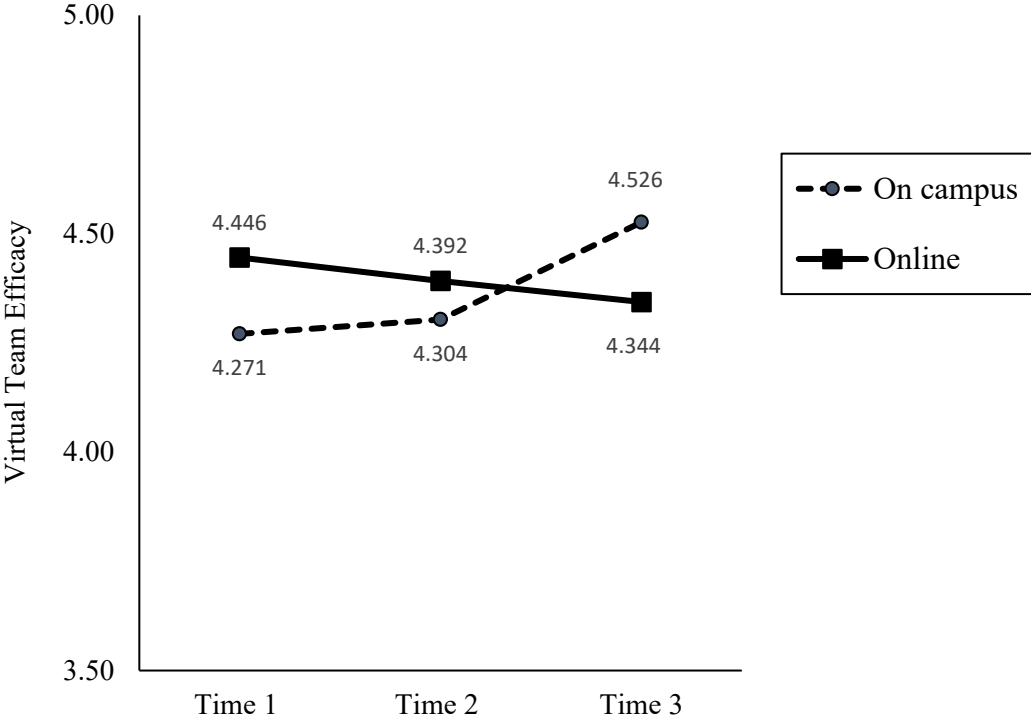


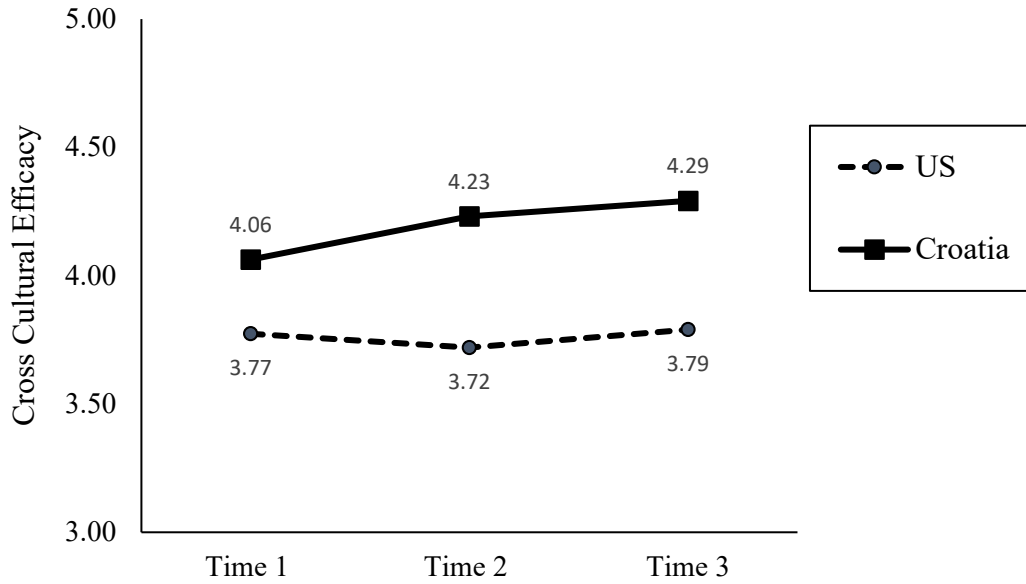
Figure 2

Estimated Marginal Means for Virtual Team Efficacy by Instruction Type



**Figure 3**

**Estimated Marginal Means for Cross-Cultural Efficacy by Country**



**Figure 4**

**Estimated Marginal Means for Enthusiasm**

