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# **Interdisciplinary Collaboration to Develop Intercultural Competence by Integrating Math, Languages, and Social Studies**

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*Abstract: We share and engage participants in a discussion of the results of collaborative interdisciplinary work to create interdisciplinary (mathematics, world languages, social studies) curriculum units integrating intercultural competence and social justice for 6th grade. We present initial results of the analysis into the essence of the collaboration along with challenges.*

*Keywords: interdisciplinary collaboration, intercultural competence, integrated curriculum.*

## **Study Purpose**

Extensive transformations in educational infrastructure and knowledge transfer over the past few decades have heightened the importance of collaborative work that transcends disciplinary boundaries and educational levels. Understanding how to best use and combine specialized content knowledge, as well as the skills and methodologies from different contributors is now crucial to keep up with the scientific advances and to address the growing needs of our society (Klein, 2001; Boix Mansilla, 2010). Consequently, it has become imperative to adjust educational goals and curriculum at the K-12 level that better prepare future generations to successfully function in the 21st century (P21, n.d.; Wagner, 2008).

Taking these issues into account, we have been working on an interdisciplinary project carried out by university faculty together with graduate students in the arts and sciences and education and school administrators and teachers. The goals of the project are two-fold: a) to integrate theory of intercultural competence and social justice into the curriculum in mathematics, world languages and social studies, and b) to engage in interdisciplinary

collaboration across levels of education to create the curriculum units based on sound theory. The purpose of the current study is to report the results of this interdisciplinary collaboration that is intimately tied with the conference theme of collaborating minds and interdisciplinary approaches.

### **Theoretical Framework**

Intercultural competence is an important skill in today's increasingly globalized world. Research in the teaching of intercultural competence shows that it can be challenging to teach "culture", even in the foreign language classroom (e.g. Byram & Risager, 1999). However, educators are aware of the importance of facilitating students' development of skills required to become global citizens. Therefore, Byram (2008) calls for foreign language educators to teach "intercultural citizenship". Byram (1997) introduced a model of intercultural communicative competence (ICC) to be used in the foreign language classroom. ICC consists of linguistic competence, sociolinguistic competence and discourse competence combined with the dimensions of Intercultural Competence (IC) consisting of knowledge, skills of interpreting and relating, skills of discovery and interaction, attitudes and critical cultural awareness. Especially when IC is concerned, it is clear that the model can be used outside of the foreign language classroom. In the current project, we collaborate to explore different ways to apply this model across subjects: social studies, world languages, and mathematics, in particular in light of the new demands of the 21st century and the wide-spread adoption of the new Common Core State Standards for Mathematics (CCSSI, 2010).

For the project we developed curriculum units integrating topics from the different subjects into a meaningful learning experience that supports and enhances specific content

knowledge while also advancing students' development of intercultural competence. We expanded the notion of Makerspaces (Bevan, Petrich, & Wilkinson, 2014) from its common application in STEM learning (Science, Technology, Engineering, & Mathematics) to include intercultural citizenship and social studies issues as an ideal interdisciplinary platform for the culmination of the units.

### **Methodology**

Over the course of a year, faculty and graduate students from mathematics, education, and world languages (education) worked together in a partnership with school administrators and teachers from a local school district. After students were inducted into theories of intercultural competence and social justice (e.g., Byram, 1997, 2008; Freire, 1972; Glynn, Wesely, & Wassell, 2014; Osborn, 2006), we explored how these theoretical concepts are connected with important concepts in mathematics (e.g.: CCSSM) as well as standard requirements of world languages and social studies (ACTFL). Small groups including at least one student from each discipline worked together integrating their expertise, modes of thinking, and combined understanding of IC to develop 6<sup>th</sup> grade curriculum units and Makerspace plans. The groups received multiple rounds of feedback from their peers, instructors, an expert (the author of the IC model used), and from colleagues from the schools. It was our intention to focus on the process as much as on the outcomes to foster continued and guided reflection on the complex content and the collaboration itself. The data analyzed in this study consists of the authors' notes, memos, and observations that followed the work of the group from the beginning of the project to the creation of the units. We used a qualitative approach to analyze our data following Strauss and Corbin (1990) by classifying different happenings, events, and other instances of collaboration

into themes. “This classification is discovered when concepts are compared one against another and appear to pertain to a similar phenomenon.” (p. 61). Comparing our data sources we were able to build themes around the different instances of the collaborative learning process that included envisioning the units, exploring possible outcomes, discussing ideas and going back to the drawing board many times until suitable ideas started to emerge, exploring targeted literature as well as giving and receiving feedback to reach the culminating products: interdisciplinary units. We classified these themes to help us unpack the different supports that facilitated the collaboration across the different groups that lead up to the successful creation of the units. Our analyses rendered the four different themes presented in the next section.

## **Results**

Preliminary results show that our collaboration was very successful in achieving the project goals of bringing together an interdisciplinary group of participants from different educational levels working towards a common interest: creating meaningful learning experiences that support and enhance content knowledge in different subject areas while also advancing students’ development of intercultural competence.

Together we generated five independent curriculum units to be implemented in the coming year. The units incorporate content knowledge from mathematics, social studies, and world languages while also systematically integrating intercultural competence and issues of social justice. Unit topics are partly built upon global issues in the social studies curriculum such as water shortage or natural disasters. Due to space limitations, we cannot describe the unit plans in detail here; however we will share them in the presentation.

The qualitative analysis of the notes, memos and observations focused on the collaboration across disciplines rendered four salient themes that illustrate how this group of educators successfully collaborated in the interdisciplinary project: *(1) Respecting disciplinary identities and boundaries, (2) Extending the understanding beyond the disciplines, (3) Ensuring a collaborative learning environment, and (4) Offering opportunities to continue the work beyond the course.* These themes will be unpacked in the presentation including details of how each of these supported the different stages of the collaboration.

### **Conclusions and Educational Implications**

Our results shed light on ways to approach the complex work of interdisciplinary collaborations that cut across different educational levels. The collaboration already produced successful results: Using and interweaving our knowledge and understanding of ICC, math, world languages, and social studies resulted in rich curriculum units that will be implemented in the schools. Thus the collaboration will continue to unfold in the coming year when we expect to explore these interactions even further.

*Educational Implications:* The model presented in this project can easily be adapted to incorporate more or other areas. The ultimate goal is to empower future generations by giving them opportunities to develop these crucial skills necessary not only for understanding the relationship between seemingly disconnected subjects and how knowledge in one area can inform and enhance understanding of another; but also for how to accomplish this by working collaboratively and effectively across disciplines (and cultures) for the betterment of their communities, society, and the world.

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