It Started with Puccini: A Separate but Interdisciplinary Learning Project

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Interdisciplinary teaching may well be considered the norm on today's college campuses. Many universities pride themselves in general education requirements which cut across all disciplines providing a solid base for future specialized learning. This approach is often coupled with elective credit requirements students meet outside of their major area of study. The late 1990s saw rise of many interdisciplinary approaches to curriculum development such as Writing Across the Curriculum (Bean, 1996). Some campuses opted for team taught courses bringing faculty from different disciplines together in the same classroom. Faculty and students were faced with overcoming discipline based communication and cultural styles (Woods, 2006). Students may not fully comprehend the holistic approach for critical thinking brought about through interdisciplinary teaching.

Faculty from three academic programs located at a small Western Region university joined forces to accomplish a common goal; provide students with an interdisciplinary learning opportunity with limited resources. This interdisciplinary project brought together faculty and students from apparel design, engineering, and music, and it all started with Puccini. Two one-act Puccini operas, *Suor Angelica* and *Gianni Schicchi*, were selected for the academic year's Opera Workshop production.

The director of the Music department's opera program approached a faculty member with the idea of her students designing the costumes for their two Puccini one-act productions. The design faculty member knew that the departments dress forms would not be adequate for the project. Having recently read an article in *Threads* related to 3D dress forms (Miller, 2016) the design faculty contacted an acquaintance in the Mechanical Engineering department.

The efforts of the three faculty collaborators paid off. Each worked with their own students in their respective discipline specific course. There was limited interaction between the students with students and students with faculty from the three programs. The faculty member from the Mechanical Engineering department only worked with his students to develop the body scanning criteria and 3D printing. He did not meet any of the students until the night of the opera production several months after the project began; this was also the first time the design students met the faculty member and a student from engineering involved with the project. His students were responsible for scanning the opera students and printing the 3D dress forms.

The apparel design students were divided into teams with each team charged with designing a period and character appropriate for the opera student they were assigned. These two groups of students did not meet face-to-face until fitting of the first costume proto-type. The design teams spent time researching the opera and character to which they were assigned. Once they received the dress forms from the engineering students they proceeded to prepare the forms for pattern development through draping. This was the first time they had any indication of body shape or size of the student filling the role. Apparel design students developed concept/inspiration boards complete with fabric choices. When the boards were completed the director of the opera met with each team to review design and fabric choices for the costumes. The design faculty member only had opportunity to interact with the music students during scheduled fittings held in the design studio.

This project could be questioned as true interdisciplinary teaching approach. Students from the three different programs had limited contact with one another and faculty outside of their own program. However all were exposed to one another's discipline in a way led to greater critical thinking skills. Seeing apparel design standard dress forms caused an engineering student to realize a problem that her growing expertise might solve. Opera students, although recipients of the other two program design and product development expertise, gained a better understanding of other disciplines contributions to preforming arts.

The design faculty member observed students increased use of math and science terminology as work progressed on the costumes. They appeared to have a greater recognition of STEM Education within apparel design. They also applied knowledge of cultural/social influences on characterization and the role appearance plays in creating and defining a personality through dress in the performing arts.

Bean, J.C. 1996, Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom. San Francisco: Jossey-Bass.

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