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Teaching Note - Toward Twenty-first-century Teaching: Interdisciplinarity at Bridgewater and Beyond

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Toward Twenty-first-century Teaching: Interdisciplinarity at Bridgewater and Beyond

John J. Kucich and Pamela J. Russell

College graduates today enter a world full of complex, multifaceted problems. An ailing global economy, transnational terrorism, climate change, staggering economic inequality and intractable political stalemate are a few; the United Nations lists at least a dozen more. As university educators, we aim to provide students with intellectual tools to make meaningful contributions to the world. Yet these global issues are huge, complicated, growing and ever-changing. Often, they do not fit within tidy disciplinary boundaries that define undergraduate majors. Yet, like most universities, Bridgewater State provides few opportunities for students to learn how to approach issues from an interdisciplinary perspective. We need to teach them to think broadly as well as deeply. How can we better prepare them to draw upon, weave together and apply content from different

academic fields so they begin to understand and grapple with issues that are not confined to single disciplines?

This question is not new. People at Bridgewater have approached it before with limited success and a number of universities have developed a wide range of interdisciplinary programs. There are many from which we can learn. Our goal in this article is to summarize some of the recent interdisciplinary teaching and learning theories, to note promising models that foster interdisciplinarity, and to share some of the efforts underway at Bridgewater. As we begin to re-envision our institutional mission and values, we should consider interdisciplinarity and the associated prospects of truly transformative learning for both students and faculty.

First, a word about terms. The different words used to describe the effort to think beyond disciplinary boundaries carry with them different theoretical perspectives. Disciplines, as Louis Menand reminds us in *The Marketplace of Ideas* (2010), have specific histories. As the nineteenth century ended, academics organized themselves into professional bodies to protect their freedom, standardize their methods of

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inquiry, foster deeper study and guard their professional status. This disciplinary structure has proved effective at producing specialized knowledge and organizing universities, but fixing exact disciplinary boundaries has always caused tension. Over time, disciplines redefine themselves, fracture into different fields or merge in response to new issues or evolving paradigms. In *Creating Interdisciplinarity* (2001), Lisa Lattuca traces how a variety of government and industry initiatives brought scholars from different specialties together to tackle complex practical challenges, often within collaborative arenas such as the National Institutes of Health.

The terms that have been used to describe that collaboration reveal a lot about its nature. *Multidisciplinary* suggests that different disciplinary approaches remain distinct when looking at an issue or problem, with separate lenses bringing different insights. A multidisciplinary approach to describing America in the 1950s, for example, might bring together an art historian, a sociologist and a political scientist to build a composite view of the era made up of complementary, but distinctive, ideas. The result is a patchwork quilt, with visibly distinct fields of disciplinary knowledge stitched together. *Interdisciplinary* suggests an interwoven fabric where distinct disciplinary perspectives make closely connected contributions, and the intersections among them build a coherent whole. An interdisciplinary perspective could be used to explore the long-term impact of the

Chernobyl nuclear accident – a topic that might require the perspectives of engineers, environmentalists and public health workers to fully grasp. In interdisciplinary thinking, the emphasis is on synthesis and understanding of the problem as a whole rather than the separate disciplinary insights needed to approach it. A third term, *transdisciplinary*, pushes this synthesis further, focusing on complex problems in contemporary society that require methods and knowledge unique to the problem and not tied to any one discipline. Advocates of transdisciplinarity often downplay

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academic learning in favor of “real-world” problems and solutions. A task force charged with finding options to deal with the aging Pilgrim nuclear power plant in Plymouth, Massachusetts could use a transdisciplinary approach. The terms multidisciplinary, interdisciplinary and transdisciplinary form a spectrum rather than a hierarchy. Each has its place in

academia and beyond our institutional borders. We prefer interdisciplinary because its balance strikes us as particularly useful for a university setting such as Bridgewater’s. Interdisciplinarity does not seek to deprivilege academic departments and the specialized knowledge they cultivate – such expertise is crucial in approaching complex issues. It does, though, seek to bring distinct strands of knowledge together in a systematic way that transforms how we understand the world.

There are multiple interdisciplinary teaching models to draw upon in bringing this perspective to the classroom. *Team teaching* involves two or more faculty members planning and teaching a course together. There are a number of variants, some of which shade toward extensive guest lecturing or *parallel teaching*, where faculty have separate areas of responsibility; other models use a *co-teaching* approach, where faculty members work closely in running the class. Many team-teaching models require ample time for planning before

and during a course to craft clear and powerful interdisciplinary connections. *Linked courses* include two separate courses that share a theme and some or all of their students. While the teachers do some common planning, the courses are usually independent, leaving the interdisciplinary connections largely to the students. A *course cluster* is a series of linked courses that share some

cross-curricular learning experiences that should foster interdisciplinary thinking. A *learning community* shifts the focus to students, who enroll in two or more courses as a coherent group and, often, engage in related activities outside of class, sometimes living together in campus housing and completing projects mentored by faculty. Learning communities are often limited to one or two semesters. Finally, a *learning cohort* is a group of students who engage in a field of study over time, making connections among courses and topics studied for several years.

members from different departments has proved remarkably durable, despite the extensive commitment of uncompensated time for planning. Other faculty members have team taught Second Year Seminars, such as “Tools for Understanding Sport Science” and, recently, “The Physics of Music.”

Some individual faculty members offer courses within a department that reach broadly into other disciplines, and others offer courses as part of interdisciplinary minors (such as film studies, women’s and gender studies, Middle

policy on joint appointments and its work continues. In summer 2012, a pedagogy track in the Teacher-Scholar Summer Institute was devoted to interdisciplinary teaching. Thirty-five faculty members explored the scholarship on interdisciplinarity, examined different interdisciplinary teaching models and integrated some form of multi- or interdisciplinarity into their own course proposals.

One of these courses, “The Physics of Music” demonstrates the potential for team teaching. Jamie Kern (Physics) and Don Running (Music) share a long-standing interest in each other’s fields and were surprised by the level of insight they gained during their collaboration. For Running, the partnership gave him the opportunity to better understand his craft: “I had never really cared to ask ‘why does my 4th partial D have to be raised 5 cents’ – I simply did it because the technique demanded it.” Kern, for her part, had a revelation about the common foundation of the two fields. After giving students a letter introducing physics as “the human attempt to understand the universe at its deepest, most fundamental level,” Running turned to her and replied that he defined music in exactly the same way. “Why,” Kern asked herself, “had I relegated music to a place of non-discovery?”

One particularly useful aspect of the summer institute was the chance to review and discuss interdisciplinary models at work in other universities. At Edgewood College, a small liberal-arts Catholic institution in Madison, Wisconsin, interdisciplinary education is required in the curriculum. Students complete three sequential experiences where they question personal identity and potential, discover the needs of and opportunities within the world, and determine their role in building a more just and compassionate world. The first experience is a seminar (e.g., Biotech, Bioethics and You) which fosters

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Over the past few years Bridgewater faculty members have shared their involvement with some of these models. Team teaching provides the most striking range of experiences. While many have found the experience powerful and effective, the failures are, perhaps, more instructive. Faculty clashes over teaching styles, priorities, or egos inevitably create rocky experiences. (Students often learn a good deal from the show.) Yet when faculty members who team taught took time to listen and recognize the validity of a different disciplinary approach, they found their team-teaching experience transformative. There have been several successful examples in recent years. A course on the Holocaust taught by three faculty

Eastern studies and others). One challenge of these minors is to help students integrate the content and applications from distinct disciplines. This work often happens in individual research projects. The Adrian Tinsley Program and the Honors Program have supported a number of interdisciplinary theses, with advisors from different departments, but these projects run counter to institutional structures, and they remain relatively rare.

There is a growing awareness at Bridgewater that we need to do more to foster interdisciplinarity. In 2011, an Interdisciplinary Studies Council composed of college deans, other administrators and faculty, began exploring the topic. It has made some programmatic recommendations, beginning with a



engagement with the community and includes mentoring by a faculty member and a peer leader. The second experience gives students options that include 20–25 hours of community-based learning, 50–100 hours of internship/field experience, short or long-term study abroad, civic leadership or undergraduate research. The culminating experience includes a capstone seminar (e.g., Men and Masculinity) or a project. Other universities require an interdisciplinary course as part of the general-education requirements. At the University of Minnesota Twin Cities, an interdisciplinary, team-taught First-Year Experience course meets twice per week, once in a large lecture format and once in separate groups of 25. Each team of faculty chooses a theme such as “Food for Thought ... and Action,” and develops curriculum that draws on the different faculty members’ expertise. Large lecture sessions and presentations are balanced by discussion and writing in smaller sessions as

students work through central texts (such as Michael Pollen’s *In Defense of Food* [2008]) and current food-related issues and case studies. Students create written work including a capstone project that involves a service component. Another approach is to offer an

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interdisciplinary *program* for interested students. At George Mason University’s New Century College, housed within its College of Humanities and Social Sciences, students select from among 16 concentrations and eight minors or build their own individual programs.

There are several lessons here for Bridgewater. One is that interdisciplinary learning doesn’t happen by itself. The institutional structures of a university are highly centrifugal, leading outwards towards individual departments and their specialized courses. It



takes conscious, sustained effort, time and resources for faculty to collaborate and promote interdisciplinary learning. The interdisciplinary experiences that survive at Bridgewater, and the models flourishing in other universities, show clearly that it can be done. But we must keep in mind a few key principles. First, *interdisciplinary thinking should be the clear goal of any approach*. The most powerful learning for students

comes from models that marry two or more disciplinary perspectives. Second, *interdisciplinary pedagogy should focus on contemporary problems*. Most scholars privilege interdisciplinary courses that require input from different disciplines and employ a problem-based pedagogy. Third, *team teaching is powerful but problematic*. It carries real risks but has the greatest potential for transformative teaching and learning. Finally, *there is*

no one best model. Team teaching may be the most common method of interdisciplinary teaching, but other models can be highly effective.

What will work best at Bridgewater? Only our faculty can decide, but there are some concrete ideas worth pursuing. To start, we could *add an interdisciplinary experience to the core curriculum*, perhaps as a team-taught course. We should also *foster interdisciplinary experiences in residential learning communities*, with particular cohorts of students pursuing specific topics over the course of several semesters and, relatedly, *develop several themed course clusters*. We need to *support faculty members working in interdisciplinary minors* by providing resources and encouragement for team-taught introductory or capstone courses. Finally, let us *encourage more ad-hoc interdisciplinary experiences*. A conscious effort to add and support an interdisciplinary dimension to study tours, service learning and collaborative and independent research projects is a good start. Fostering interdisciplinarity takes committed work and patience. Yet the payoffs are well worth the effort. For faculty, the opportunity to work closely with colleagues from other disciplines can transform both their teaching and their research. For students, the ability to make meaningful contributions to global change – even on the smallest of scales – can benefit from engagement in interdisciplinary experiences.

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