

IMPACT

THE JOURNAL OF THE CENTER FOR INTERDISCIPLINARY TEACHING & LEARNING



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ABOUT US

Impact: The Journal of the Center for Interdisciplinary Teaching & Learning is a peer-reviewed, bi-annual online journal that publishes scholarly and creative non-fiction essays about the theory, practice and assessment of interdisciplinary education. *Impact* is produced by the [Center for Interdisciplinary Teaching & Learning](#) at the Boston University College of General Studies. *Impact* accepts submissions throughout the year and publishes issues in February and July. Please submit your essays for consideration at <https://citl.submittable.com/submit>.

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EDITORIAL STATEMENT

Dear Readers,

How do our students learn what it means to be a human being, with all the attendant responsibilities and joys? How do we learn to teach in a truly interdisciplinary manner? These are some of the questions that preoccupy this issue's contributors.

One contributor argues that Mary Shelley's *Frankenstein* teaches students why the humanities as a discipline is important and what it teaches us about the human condition. A practicing psychologist describes how one innovative interdisciplinary program helps children and adolescents confront anxiety. And while this contributor does not discuss university students, her experience has implications for the increasing number of undergraduates who report feeling anxious and stressed about their world and their lives.

In this issue we also happen to publish two collaboratively written essays. Faculty from Vermont write about how interdisciplinary team teaching enabled them to ask students to ponder "the big questions" about themselves and their world. Faculty co-writers from New Hampshire reflect on the possibilities and challenges of creating cross-college courses. Interestingly, our contributors from New Hampshire came to our attention via the 22nd Annual Dickens Symposium. "Interdisciplinary Dickens" was co-sponsored this past summer by the Center for Interdisciplinary Teaching & Learning and the Dickens Society.

Finally, in their trenchant examination of the words of others, our reviewers reflect on the various ways we understand and constitute ourselves -- as Americans, as readers, and as teachers and scholars.

Best,

Megan

Megan Sullivan, Editor

ABOUT THIS ISSUE'S AUTHORS

Kathryn D. Boger, PhD, ABPP, is board certified in clinical child and adolescent psychology by the American Board of Professional Psychology and specializes in cognitive behavioral therapy (CBT) for anxiety, mood, and substance use disorders. She has had extensive training and experience in the delivery of empirically-supported treatments in both outpatient and residential levels of care. Boger helped to develop and is currently the program director for the McLean Anxiety Mastery Program at McLean Hospital. In 2011, she was the recipient of the Andrew P. Merrill Memorial Research Fellowship through McLean Hospital.

Micah Donohue received his PhD in comparative literature from Pennsylvania State University in 2015. He is currently an assistant professor in the Department of Languages and Literature at Eastern New Mexico University. His research focuses on the literatures of the Americas with particular emphasis on contemporary borderland literatures of Mexico and the United States of America.

Mary Beth Doyle and **Donna Bozzone** are professors of education and biology, respectively, at Saint Michael's College in Vermont. Together they designed and implemented a fully integrated First Year Seminar and a non-majors biology lab course aimed at highlighting the interconnections among ways of knowing.

Liz Henley and **Susan E. Cook** are assistant professor of information technology and associate professor of English, respectively, at Southern New Hampshire University. Henley's interdisciplinary research currently focuses on the connection between technology and the humanities. Cook's research focuses on nineteenth-century narrative and visual culture, specifically the history of photography.

Eric Meljac is assistant professor of English at West Texas A&M University, where he has taught since 2014. He received his Ph.D. in literature and criticism from Indiana University of Pennsylvania in 2013.

Beth Powell is assistant director for the Student Success Center in the College of Engineering at Tennessee Tech University, where she also teaches technical communication for engineers. Her research and publications are in engineering communication and education. She earned her PhD in rhetoric and composition from the University of Louisville in 2006.

Carol Ann Sharicz has experience as a professor, consultant, and author. Currently, Carol is teaching in the Instructional Design graduate program at the University of Massachusetts Boston. Prior work experience includes being a senior training instructor and instructional designer for Motorola, Inc. and associate professor at Suffolk University in Boston. To date, Carol has worked in 14 countries, including Amsterdam, Australia, Belarus, Belgium, Brazil, Canada, England, Estonia, Germany, Hong Kong, India, Japan, Moldova, and Russia. Carol has many publications to her credit, including her book, *The Big Picture: A Systems Thinking Story for Managers*, and is a frequent presenter at regional, national, and international conferences.

ANNOUNCEMENTS

Latest Announcements

Please refer to CITL's website for our latest announcements: <http://www.bu.edu/cgs/citl/>.

Also note that this summer we are co-sponsoring an annual conference in London, [Writing, the State, and the Rise of Neo-Nationalism: Historical Contexts and Contemporary Concerns](#).

***IMPACT* ESSAY COMPETITION**

Every December, the editors of *Impact: The Journal of the Center for Interdisciplinary Teaching & Learning* invite submissions of scholarly and creative non-fiction essays between 1,000 and 5,000 words on any aspect of interdisciplinary teaching or research. The author of the winning essay will receive a \$250 award and publication in *Impact*.

Essays should be readable to a general, educated audience, and they should follow the documentation style most prevalent in the author's disciplinary field. Essays for this contest should be submitted by the first Monday in December to <http://CITL.submittable.com/submit>. See our general submission guidelines in Submittable.

CITL reserves the right to not publish a winner in any given year. Faculty and staff from the College of General Studies are not eligible to submit to this contest.

The Monster and the Humanities: The Creation of a Pedagogy for the Humanities in Mary Shelley's *Frankenstein*; or, The Modern Prometheus

By Eric Meljac, West Texas A&M University

One of the more remarkable points I find in Mary Shelley's *Frankenstein* is when the monster, watching cottagers and their daily lives, stumbles upon books and reads these texts in an effort to make himself more "human." The monster, a creation of scientific experimentation and not human by birth, seeks to become more human, more acceptable, and more understood. Indeed, the questions he asks of himself are central to the core of human self-understanding. He says, "My person was hideous and my stature gigantic. What did this mean? Who was I? What was I? Whence did I come? What was my destination? These questions continually recurred, but I was unable to solve them" (91). Most curious to me as I read these lines, and associating them with my position as an instructor of English, is that these questions appear to plague college students as they grow, mature, discover, and become functioning members of society. In fact, I am particularly struck by how *Frankenstein's* monster could become an example for up-and-coming college students who, quite lost in the modern university, could discover themselves and learn about their own humanity through significant study in the humanities. The monster, feeling un-human (and quite honestly he really is) turns to the humanities to become a more functioning member of European society. His self-education is an attempt at creating selfhood. "Who am I?" the creature asks. He finds some answers in reading the classics of literature. And, while critics question the notion of how well this reading really humanizes the creature, I think it provides at the very least an example of how we can speak to our students about becoming educated and informed members of a modern and increasingly global, liberal society.

In "Teaching the Monster: *Frankenstein* and Critical Thinking," Melissa Bloom Bissonette, a professor of theater, discusses how she uses *Frankenstein* as an educational tool in the creation of critical thinking. Studying the effect of the *Frankenstein* story on students (referring quite often both to the novel itself and film adaptations of the text), Bissonette discusses the natural sympathy students reserve for the monstrous creation of Victor Frankenstein. She notices that, "Armed with good-hearted native sympathy, students are quick to find parallels in our world" (108). Such an observation piques my interest. Obviously, students connect with the story. It is that connection that I encourage us to exploit in this essay. If students can find sympathy with the monster, perhaps too they can learn with and from the monster, and become not only better students, but also students who are, in a world where this is ever decreasing, well-versed in the humanities.

Bissonette's essay provides interest, but her study does not speak to the whole of my project. Her concern is how to complicate students' readings of *Frankenstein* and move beyond simple dichotomies and hasty generalizations. In her experience students are quick to reduce the novel and the monster to "this-and-that" analysis, rather than more complicated and probing analyses. Still, her work shows me that the novel can really promote learning for the college student. Complications in the novel reinforce the necessity of critical thinking, and in my estimation, one can look particularly toward what I call the "humanities portion" of the novel for a broader human education.

I assert that students can learn to learn from the monster. What does that mean? I attempt to avoid the vague and superfluous here. I am concerned with details and lessons. In searching for his humanity, the creature looks at particular texts, all of which have a keen critical eye. The monster reads Milton's *Paradise Lost*, portions of Plutarch's *Lives*, and Goethe's *Sorrows of Young Werther*. While many critics examine the texts in terms of their relation to different Romantic literary movements, I am more concerned with the effects of these texts on the monster himself. What did he learn and how did he experience it? Perhaps it is best to use the creature's own words to show exactly how he learns from these books and how the books affect his hopeful humanity. The creature says, "I learned from Werther's imaginations despondency and gloom: but Plutarch taught me high thoughts; he elevated me above the wretched sphere of my own reflections, to admire and love the heroes of past ages" (91). He goes on, "But *Paradise Lost* excited different and far deeper emotions" (92). In reading Milton's masterpiece, the creature realizes his position as part of a creation: "Like Adam, I was apparently united by no link to any other being in existence; but his state was far different from mine in every other respect. He had come forth from the hands of God a perfect creature [. . .] but I was wretched, helpless, and alone" (92). Now, while the monster finds himself particularly troubled by reading Milton, his reading is not a total loss.

ESSAYS—CONTINUED

Indeed, all of his reading manifests in itself a very pertinent lesson for teachers of higher education and beyond, for it is through this reading that the creature realizes his position in the world. Is this not what we ask of our students? Putting this question aside for the moment, I would like to turn to Andrew Burkett's wonderful essay "Mediating Monstrosity: Media, Information, and Mary Shelley's *Frankenstein*." In this essay, Burkett mentions that "the text's themes and structures themselves generate, if not beg for [. . .] analysis, research, and application" (583). This is an important observation. If we can teach our students these skills, and if we can use the styles of texts the creature uses to become "humanized," can we not develop and indeed "create" students who have a better understanding of the necessary humanist skills necessary for innovative critical thinkers? As Burkett suggests, "Having 'continually studied and exercised [his] mind' upon *Paradise Lost*, Plutarch's *Lives*, and the *Sorrows of Werter*—not to mention Victor's own journal of his creation—the creature has become a wise and deeply self-conscious subject" (594). Such wisdom and self-consciousness seems to me to be precisely what we expect of our students. Everyone has heard of the demise of the humanities, so I will not need to address this here; armed with this knowledge, however, couldn't we look to *Frankenstein* as an example of what we can do with literature and the humanities to give students a greater understanding of themselves as human, social, political, and independent subjects in a widely democratic nation and world where self-consciousness becomes an essential tool for negotiating an increasingly political climate? I think we can. And, furthermore, I think we must.

Of course, not everyone agrees with my assessment of the lesson of the humanities in Mary Shelley's masterwork. While we disagree on fundamental levels, I admire Maureen Noelle McLane's splendid essay "Literate Species: Populations, 'Humanities,' and *Frankenstein*." For McLane, Shelley's novel is a one of "pedagogic failure" (959). As she puts it, the novel exhibits "specifically a failure in the promise of the humanities, in letters as a route to humanization" (959). She goes on, "The novel demonstrates, perhaps against itself, that the acquisition of 'literary refinement' fails to humanize the problematic body" (959). Instead of the humanities acting as the victor in Shelley's novel, it seems as though McLane promotes the advent of modern science as the victor. In fact, she mentions what she calls the "ruse of the humanities" as a particular danger for Frankenstein's monster. As she puts it, "In entertaining humanist fantasies, the monster forgets his corporeally and nominally indeterminate status: the community of letters presupposes a human community, and the humanities presuppose humans. The monster presupposes his potential humanity; in this he succumbs to the ruse of the humanities" (975). For McLane, the humanities only enable the monster to realize his own marginality. He is a non-being, and in reading the humanities, from what McLane suggests, the monster only marginalizes himself more. In a very deep and difficult study, McLane suggests that *Frankenstein* is a novel that appears to promote the sciences over the humanities. For, it is through science that the monster gains his being; the humanities only complicate his situation and make him realize that, indeed, he is not human, and as a creation of science he is simply not what he hopes to be.

While I admire McLane's study, and in many ways can understand her thesis and evidence, I still think that the lesson one can learn from the novel is that the humanities can immediately humanize an individual who otherwise finds him- or herself awash in a world that excommunicates the individual and enforces conformity. Shelley promotes individual thought, and the monster's knowledge gained by reading core texts in the humanities enables him to understand, at the very least, his position in the world. This is what we expect of our students. Each essay assignment, each argument, is an opportunity to promote individuality and self-development. We insist upon this in our classrooms, and our reading of *Frankenstein* can help to promote this in our students.

As educators, we value critical thinking. What the monster finds in his reading is just that. As the monster puts it, "[These books] produced in me an infinity of new images and feelings, that sometimes raised me to ecstasy, but more frequently sunk me into the lowest dejection" (91). While I am sure McLane would argue that the dejection shows the failure of the humanities to educate an individual (again the "ruse of the humanities"), I argue that this becomes evidence of completing the human individual. One cannot be completely and constantly affirmed.

Unlike McLane, I believe the monster learns how to be human. I suggest that this is a product of studying the humanities. Science and technology may represent progress, but the humanities teach one how to feel, how to cope, how to experience life, and also how to nurture a sympathetic imagination.

Consider for instance the following lines spoken by Frankenstein's monster; in these lines I think we get

ESSAYS—CONTINUED

an idea as to what the monster really learns by studying the humanities:

As I read, however, I applied much personally to my own feelings and condition. I found myself similar, yet at the same time strangely unlike to the beings concerning whom I read, and to whose conversation I was a listener. I sympathised with and partly understood them, but I was unformed in mind; I was dependent on none, and related to none. “The path of my departure was free,” and there was none to lament my annihilation. (91)

The effects of these lines, of course, are mixed. At once there is the experience of education and the emotional trigger of brutish sadness. Of course, the monster is alone, a scientific creation almost solely. Such is McLane’s trigger; she would argue that the humanities fail the monster because they bring him to pity. Still, this is what I see as valuable in the monster’s growth as a thinker, one with a sympathetic imagination. Despite this “ruse of the humanities,” I think the monster actually gains a rational, emotional, and critical-thinking mind, which I believe anyone devoted to the humanities would argue is one of the most direct aims of studying the arts. The monster says, “I read of men concerned in public affairs, governing or massacring their species. I felt the greatest ardour for virtue rise within me, and abhorrence for vice, as far as I understood the signification of those terms, relative as they were, as I applied them, to pleasure and pain alone” (92). One cannot argue that the monster is not learning human emotion. In fact, he develops a sympathetic imagination—a sympathetic imagination that gives him knowledge to contemplate the very nature that afflicts him.

His brief (and rather incomplete) course in the humanities allows the monster to understand his own position in the world, a position he tries to establish by observing the cottagers to no avail. After gaining language and reading (which many critics cite as a hole in Shelley’s story—how does this creation learn to read without tutorial?), the monster finally becomes able to decipher papers that discuss his creation. Reminding the reader of the journal he finds in the pocket of what are now his clothes, he says:

At first I had neglected them; but now that I was able to decipher the characters in which they were written, I began to study them with diligence. It was your [here he speaks to Victor Frankenstein] journal of the four months that preceded my creation. [. . .] Every thing is related in them which bears reference to my accursed origin; the whole detail of that series of disgusting circumstances which produced it is set in view; the minutest description of my odious and loathsome person is given, in language which painted your own horrors, and rendered mine indelible. (92-3)

Now armed with knowledge, the monster renders himself able to colloquially “put together the pieces” of his quasi-humanity and understand his mind and spirit, just as those who study the humanities do by reading Wordsworth’s “The Prelude,” by studying Picasso’s “Blue Period,” by navigating the history of saints’ lives in pursuit of religion, or any multitude of examinations into the liberal arts and humanities.

Once again, armed with this knowledge, the monster says in one short sentence, packed with power, “I sickened as I read” (93).

How else but by studying could the monster learn to have a visceral reaction to words on a page? This transformation, from pure tactile experience to complex critical thinking, comes as a result of a pedagogy of the humanities. By learning from books, from the arts, the monster becomes informed enough to detest himself in an entirely different way. He sees his spirit, his mind. He learns to appreciate—and abhor—his creation.

This is the teachable moment. Bringing this back to the classroom, much as Bissonette does, students can see that through reading these classics the monster gains capability. He matures from pure beast to critical thinker. He moves from the realm of bodily experience to mental configuration. The humanities—as exhibited by Milton, Plutarch, and Goethe—give the monster the capability to ponder his existence in an entirely new way, and if we can show our students that these few—merely four or so—pages of Shelley’s work reveal how the humanities can transform the mind, we can envision a pedagogy that helps us to nurture critical thinking and a sympathetic imagination in the minds and spirits of our students. This is how we can create a pedagogy of the humanities with *Frankenstein*. Urging our students to follow the monster’s lead will lead them to wonder about their own place in the world, and this is the lesson of the humanities. How the students use that knowledge is a lesson for another day, time, and essay, but clearly, Mary Shelley’s

ESSAYS— CONTINUED

Frankenstein provides evidence that the humanities are not lost, are not a ruse, and are certainly essential for mature intellectual growth.

Works Cited

- Bissonette, Melissa Bloom. "Teaching The Monster: *Frankenstein* And Critical Thinking." *College Literature*, vol. 37, no. 3, Summer 2010, pp. 106-20.
- Burkett, Andrew. "Mediating Monstrosity: Media, Information, and Mary Shelley's *Frankenstein*." *Studies in Romanticism*, vol. 51, no. 4, Winter 2012, pp. 579-605.
- McLane, Maureen Noelle. "Literate Species: Populations, 'Humanities,' and *Frankenstein*." *ELH*, vol. 63, no. 4, Winter 1996, pp. 959-88.
- Shelley, Mary. *Frankenstein*. Dover, 2014.

ESSAYS—CONTINUED

Multidisciplinary Teaching: Providing Undergraduates with the Skills to Integrate Knowledge and Tackle “Big” Questions

By Mary Beth Doyle and Donna Bozzone, Saint Michael's College

Introduction

The overarching goals of undergraduate education are to engender in students the capacity to think deeply, analyze information, and integrate important ideas in a context which is situated in a disciplinary foundation and connected to lived experiences. Looked at more closely, we wish for students to engage in asking important, big questions; this is not so easy to do. Why? One answer might be that we teach as if knowledge is discrete and compartmentalized. It is not. In fact, the most enjoyable and reinforcing aspects of learning are seeing and experiencing the connections between different subject areas. And yet, in many colleges and universities we teach in ways that mask this reality from students. Professors teach as if in silos and engage in the magical thinking that our students will make these connections themselves. We decided to address the challenge students face trying to see how topics from different disciplines are authentically interconnected. To do so, we stepped out of our individual disciplinary comfort zones (social science and life science) and developed a co-taught, multidisciplinary course, organized around the question: what does it mean to be human?

Although our course philosophy, design, pedagogy, and implementation are generalizable and learning in this way is accessible to students of any major, we designed our integrated course with non-science majors in mind. Such students possess perspectives, interests, dispositions, and expectations that differ somewhat from most students majoring in biology (Sundberg and Dini, 1993; Cook and Mulvihill, 2008) and that is what makes it so much fun and so rewarding to teach them. These differences in student populations, however, mean that non-majors biology courses can be taught differently than those intended for majors. Different does not mean “dumbing down” but rather recognizes there is a fundamental distinction between introductory courses taught for majors and those taught for non-majors (Wright, 2005; Knight and Smith, 2010). We reasoned that focusing on non-majors biology would provide us greater freedom for pedagogical creativity and innovation. To be specific, the introductory course sequence designed for biology majors is intended to be the first in a series of courses, while non-major biology courses are more discrete: there is no expectation that additional biology courses will be taken. In addition, we encouraged elementary education majors to enroll in the course given their well-documented fears of science (Tosun, 2000). Our hope was that by experiencing an integrated approach to learning the students would engage more readily and with less trepidation.

Course Design

The primary objective of our integrated course was to engage students in the study of biology and the process of science in a manner that highlights the connections and interdependence of different ways of knowing. This objective derived from the fact that biology does not exist as a disconnected field of study. Therefore, in order to understand biology well, one needs to be conversant with the ways that biology connects to the larger culture. The inverse is also true: to understand our culture fully, one needs to be familiar with biology. More specifically, biological research, ideas, and knowledge intersect with global issues, ethics, and social responsibility (Bozzone and Green, 2014). The overarching hope of our course was to teach students about biology in a way that will have meaning and relevance for their lives.

Although we designed and taught this course as one integrated offering, for the purpose of the Registrar's records, students enrolled in two courses (i.e., First Year Seminar and Biology Lab Science) and were assigned grades for each.

To address our guiding question: what does it mean to be human?, we combined a First Year Seminar, “The Social Construction of Humanness” and a non-majors lab course, “The Cell and Developmental Biology of Being Human.” Both courses fulfill general education requirements at the college. The principle objectives of First Year Seminar are close reading, discussion, and writing at the college level and that of the biology course is to engage students in the scientific process. Our class met for three hours twice per week with an embedded lab component.

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With respect to course content, we focused on three aspects of diversity: race and culture; dis/ability; and sex and gender (refer to Table 1). We paid particular attention to the phenomena of “othering” and marginalizing those who are different from ourselves. We explored these topics from social science and biological perspectives. From the social science vantage point we examined the impact of our individual and collective experiences and responses to the three aspects of diversity studied in relationship to the foundational question, what does it mean to be human? For example, in the dis/ability unit we addressed the questions: Do individuals with Down syndrome have the same inherent value as those without? Should individuals with Down syndrome have the same rights, responsibilities, and opportunities as those without? From a biological perspective, consideration of these topics required a close examination of inheritance, information flow within cells and organisms, cell structure and function, development, and evolution. Examples of questions we examined included, what mechanistic explanations are there to account for Down syndrome? Can the experiences of individuals with Down syndrome be explained as outcomes of their biology?

Table 1. Examples of Primary Concepts for the Disability Unit: Down syndrome Case

Biology Concepts	First Year Seminar Concepts
Meiosis	Accessibility
Mitosis	People First Language
Human Embryogenesis	Legal Rights and Responsibilities
Anatomy	Determinism vs Potential
Evolution and variation	Social Constructs of Dis/ability
Chromosomes	Family Systems and Networks of Support
Inheritance	Disability Rights
Genotype and phenotype	Othering and Marginalization

We chose a deliberate and consistent instructional approach that was repeated for every unit. We began with formative assessments including discussions, electronic polling, graphic organizers, board work, and free-writes. Based upon what we learned from the formative assessment, we designed instruction that included: videos, accessible readings typically from articles in credible popular press (e.g., *The New Yorker*), discussion, and informal student writing, after which we inserted primary literature. Given the complex nature of primary literature, we scaffolded directly through reverse outlining (Brizee, 2010) how to negotiate and prepare challenging reading assignments. We then re-visited the initial questions and students discussed their growth based on the new information. Our goal was to deepen and enhance their understanding and to invite curiosity.

To illustrate our approach in more detail, we describe below its application for the sex and gender unit. Using a case study to humanize the topic, we introduced the story of Caster Semenya.

Caster Semenya, a world class track and field athlete, was subjected to medical tests to verify she is a woman (Levy, 2009). These so called “gender tests” were done to determine whether Semenya was eligible to compete as a woman. She endured intense public scrutiny; had her private life displayed on media throughout the world, without her permission; and was mocked by other athletes and sports announcers. Semenya became so despondent she wished to die. Her case allowed us to address both biological and social questions about sex and gender directly. While the detailed results of her medical tests were never released officially, Caster Semenya probably has atypical sexual development (Levy, 2009). Biological concepts that we explored included embryogenesis, gene function, sex determination in humans and other organisms, and typical and atypical sexual development. Topics explored through the social science lens included social and historical gender testing in sports, the intersection of gender testing and race, gender as a social construct, the social and societal challenges experienced by a person like Semenya, who does not fit neatly within a gender or sex binary, and ultimately, what are sex and gender.

ESSAYS—CONTINUED

The primary text used to support this unit was *Sex/Gender: Biology in a Social World* (Fausto-Sterling, 2012). Additional readings, videos, and documentaries were also assigned. Topics of class discussion included: the history, implementation and outcomes of Title IX; historical views of women's bodies starting from ancient works; three specific DSDs (differences in, or disorders of sexual development): AIS (androgen insensitivity syndrome—most likely the DSD experienced by Semenya), CAH (congenital adrenal hyperplasia), and Guevedoces (5-alpha reductase deficiency); sexuality; and gender.

Students were surprised to learn about these DSDs. Individuals with AIS have X and Y sex chromosomes. Typically, such genetic instructions contribute to the development of males. The cells of individuals with AIS are missing receptors to bind a sex hormone that is necessary for the development of bodies that look male. Individuals with AIS develop bodies that are externally female. CAH is a DSD in which the developing embryo or fetus is exposed to high levels of sex hormones. If the embryo is XX, meaning possessing the chromosomes associated with the development of a girl, her external genitals will become “masculinized”. Guevedoces refers to a DSD in which the individuals are XY, are identified as girls at birth, and who develop external male genitals at the time of puberty. Guevedoces translates roughly to “penis at twelve”. This exploration of typical and atypical sexual development, both the biology and the social outcomes for individuals with DSDs, was eye-opening for students. They realized, for example, that nature is not so discrete either and that categories are made by people. Similarly, social categories and the related roles individuals are expected to play are also not discrete. And these groupings, too, are made by people as well.

Products generated by student work included articulating definitions of female, male, feminine, masculine, homosexual, bisexual, and heterosexual; hands on demonstrations of mitosis and meiosis; analyses and discussions of assigned articles, online sources, and videos; reflective writing after each class meeting; and responsibility to prepare for and facilitate discussion of a specific assigned chapter of the text. The culmination of this unit was a debate about sex and gender testing for which students were asked to call upon their previous learning from the course and their reading of three additional papers to prepare and support their arguments.

Outcomes: Students and Faculty

Students

Students in this course met or exceeded our learning objectives and hopes. Specifically, they enhanced their skills in approaching primary literature; engaged in substantive debate in which they moved beyond providing personal opinion; evaluated and supported arguments with evidence; and enhanced writing effectiveness. They also exhibited an enlivened curiosity and desire to go beyond the surface view and to dig for mechanistic explanation. Moreover, without being assigned to do so, students formed a learning community that extended beyond the classroom in the forms of study groups, social gatherings, and online connections. We were delighted that many expressed the desire for more classes of this nature. “If there were more science classes taught this way (integrated) I would take one every year.... Too bad this will be my last science class, I really liked it.”

The experience of teaching biology within the course combination compared to the stand-alone version for non-majors or even majors introductory biology was enlightening. We eschewed traditional exams and similar forms of assessment in favor of evaluating students by other means. For example, students demonstrated their understanding of mitosis and meiosis by explaining these processes to each other, and to us, using manipulatives. They were able to contextualize these biological concepts by connecting them to cancer and Down syndrome, respectively. For meiosis, students also incorporated their knowledge of this process in brochures they produced to inform families about Down syndrome. Student understanding of all biological concepts were evaluated by a combination of physical demonstrations, oral presentations, discussions, and writing. Refer to Table 2. Their understanding of the basic biological concepts exceeded what we have typically observed in the stand alone biology course. This degree of understanding was not unique to mitosis and meiosis; it was true for all of the concepts we explored.

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Table 2. Example of Comparison between Traditional Biology Course and Blend Course

Traditional Standard Alone Biology Course	Outcome Products	Outcome Products Blended Biology and First Year Seminar Class
Meiosis	Quizzes and Exam	Oral exam with use of manipulatives
Mitosis	Quizzes and Exam	Oral exam with use of manipulatives
Genotype and Phenotype	Quizzes and Exam	Writing assignments (i.e., essays): -reflective essays -Analytical essays (informed by literature)
Inheritance	Quizzes and Exam	Informational brochure for parents who have children with Down syndrome Debate on the ethics of eugenics (past and present)
Chromosomes	Quizzes and Exam	Informational brochure for parents who have children with Down syndrome
Evolution	Quizzes and Exam	Debate on the ethics of eugenics (past and present)
Intentional Integration of Information	Not applicable	Debate informed by the literature and course content Analytical essays (informed by the literature)

Equally important, the laboratory component of the course was explicitly designed to emphasize the process of science. As the semester unfolded, students engaged in three guided independent research projects, the results of which they presented publically. Once again, the quality of this work was at least equal to if not better than what we have observed in the stand alone course. Because the format of the combined class was modelled on the scientific process, the lab and other components of the course reinforced one another with their continued insistence on clear articulation of questions, analysis, and evidence to support claims.

It is apparent that student learning was enhanced in this course in ways that were hoped for but not necessarily expected. Perhaps most significant, students' foundational approach and consideration of the primary question of the course, what does it mean to be human? shifted dramatically. They moved from quick reactive responses that were rooted in their personal experiences (as per formative assessments) to questioning, listening, and reading much more deeply. In confronting questions, students looked for mechanistic factors, social factors, and the interactions between the two.

We were utterly astonished with the maturation of thought and consideration of every student with regard to the primary question.

“Throughout this course we have covered many of the ways in which we ‘other’ people... Indeed, learning about ‘othering’ and what we can do to prevent it, is very important... So, our running goal for this class, which will most likely remain our goal for our lives, is to continue on our journey toward inclusiveness.”

“This class made it abundantly clear for me that fearing heterogeneity is not wrong, but acting on this fear is wrong. Educating ourselves and each other on the importance of variation is what will allow us to escape the cycle of othering and marginalization.”

“I appreciated this class for it has started a discussion about differences. It acknowledges that we see them and it is okay to talk about those differences and continue to talk about them. It is talking which gets rid of the biases.”

It is evident that over the course of the semester, students moved to a more sophisticated and nuanced consideration of

ESSAYS—CONTINUED

our big question.

Faculty

While we anticipated that students would be engaged in the course due to the nature of the topics, we were nevertheless surprised by the depth of their engagement. A partial explanation is that we discussed and modeled how we prepared for each class (e.g., article analysis, notes, conversations, time engaged with preparation); in short order the students' preparation reflected ours (e.g., annotations on the readings, notes from videos, study groups). In addition, we were surprised about the impact of our discourse with one another during class, on the quality of student discussion. A possible explanation for this outcome is that we modeled how to question each other, and at times, disagree respectfully and in fact, cheerfully; students took it in and were able to do so with each other as well. Given that the students were not science majors and in some cases, science averse, we were both pleasantly surprised at their curiosity and enthusiasm for the biological concepts and laboratory work.

Another positive consequence of the work has been the enlivening of our understandings of our own fields in the context of other bodies of knowledge and ways of knowing. As full professors, it has been exhilarating to share resources across fields of study, to engage in thoughtful conversations about the topics, and to challenge what each of us thought that we once knew or understood.

Doyle was specifically surprised by the impact of introducing the biological concepts via narrative. The students read and discussed the stories of the lived experiences of individuals which compelled them to ask "Why?" They wanted to understand the biology of each case. They used the scientific process to unearth empirical information to answer their questions. In its broadest manifestation, students used this approach tenaciously to answer the foundational question of the course: What does it mean to be human?

Bozzone's big surprise was the influence of this course on her other biology courses. In addition to learning new pedagogical approaches and techniques, she became more adept in using new language that sharpened her focus on topics she had taught for many years namely, othering, variation, and the concept of normal. More specifically, her perspective with respect to social science elements was enhanced significantly as evidenced by comments, discussion, and writing done by students in her other courses.

Conclusion

Our approach to opening the doors between seemingly discrete bodies of knowledge is not limited to biology and social science. It can be adapted to many fields of study. For example, one could imagine a religious studies course and a history course combined to examine causes of war and peace, or mathematics and music connected to explore the practical aspects and aesthetic beauty of patterns, or sociology and economics integrated to examine poverty within specific communities with the goal of identifying potential solutions.

We focused on biology and social science because of our individual areas of expertise. One of the challenges in trying to foster an understanding and appreciation of the importance of biology is that our educational system tends to compartmentalize science rather than seeing it as a central aspect of the liberal arts. In reality, the integration of knowledge—not simply within biology, but also among sciences, social sciences, humanities, and the arts—is essential for confronting and finding solutions to the challenges we all face. Our graduates ultimately have the potential to play important roles in meeting these challenges and helping to find solutions precisely because their particular interests allow them to see biology and science from different perspectives (Bozzone and Green 2014). Biology in particular, and science in general, represent one way of asking questions and evaluating the answers; it is not the only one. Still, the specific manner in which scientists engage in learning about the natural world is both powerful and successful. And as one way of thinking, it is practical for many questions, not just scientific ones.

Looking forward, we decided that rather than acting as if students will recognize the interrelatedness of knowledge spontaneously, we will commit ourselves to teaching with an intentional focus on intellectual connections. In doing so, we predict that students will broaden their views and see that knowledge is not so discrete after all. In fact, knowledge is all one big picture, one glorious tapestry, no matter how closely we may examine the individual threads.

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Works Cited

- Bozzone, D.M. & Green, D.S. (2014). *Biology for the informed citizen*. Oxford University Press, New York.
- Brizbee, A. (2010). *Reverse outlining: An exercise for taking notes and revising your work*. Retrieved from <https://owl.english.purdue.edu/owl/resource/689/1/>
- Cook, M. & Mulvihill, T.M. (2008). *Examining US college students' attitudes towards science: Learning from non-science majors*. *Educational Research and Review* 3(1): 38-47.
- Knight, J.K. & Smith, M.K. (2010). *Different but equal? How nonmajors and majors approach and learn genetics*. *CBE Life Sci. Educ.* 9(1): 34-44.
- Levy, A. (2009). *Either/Or: Sports, sex, and the case of Caster Semenya*. *The New Yorker*. 11/30/2009.
- Sundberg, M.D. & Dini, M.L. (1993). *Science majors vs non-majors: Is there a difference?* *Journal of College Science Teaching*. 22: 299-304.
- Tosun, Tarik. (2000). *The beliefs of preservice elementary teachers toward science and science teaching*. *School Science and Mathematics* 100(7): 374-379.
- Wright, Robin L. (2005). *Undergraduate biology course for nonscientists: Toward a lived curriculum*. *Cell Biol. Educ.* 4:189-196.

ESSAYS— CONTINUED

An Innovative Model of Treatment for Pediatric Anxiety

By Kathryn Boger, McLean Hospital

Note that a version of this article has been given by the author as a TEDx talk in April, 2017 in Waltham, MA.

Imagine that you're at a crowded mall with your 4 year-old child. The two of you just walked into the food court, and you take a minute to reach into your pockets for some money. When you do, your child's hand slips out of your own. And then you look up and your child is gone. You shout his name and furiously scan the crowd. You see bright lights, children having tantrums, and people everywhere, but you cannot see your child. You run from store to store and still can't find him. Your heart begins to race, your breathing speeds up, and your stomach drops. Your brain starts to run through the horrible things that could've happened to him. You've lost control of the situation.

Then suddenly you spot him across the food court, peering over the counter at a frozen yogurt store. You race over to him and give him a huge hug and a little admonishment for scaring the life out of you. Your body and mind immediately begin to settle. You regain control of the situation.

Most of us have been through at least one highly anxious experience in our lives. But then the situation resolves or we use our skills and resources to manage it. The mind and body recalibrate, we adjust. But imagine if there were no relief. What if you walked around every day with your heart pounding in your chest and with the feeling that you were gasping for air? What if your brain was constantly telling you that the scariest, most horrible things were going to happen and that the world felt like an out of control and unsafe place?

Now imagine that you're 7...or 10...or 15 and that this is your daily reality. This is what we need to understand about anxiety and what it's like to experience it. The word "anxiety" has become so overused that it no longer seems to capture how debilitating it can be when it reaches the level of diagnosis.

Anxiety becomes diagnosable when it is persistent and extreme and gets in the way of living a normal life. A child can experience anxiety before tests, for example, and this might even help him to prepare and improve his performance. But if the anxiety starts to pervade his life, repeatedly causing him to ruminate late into the night, experience chronic stomach aches and headaches, and avoid studying and maybe even school altogether, he could receive an anxiety diagnosis.

Our current generation of youth is suffering from anxiety more than any previous generation. We don't yet understand why, but experts have hypothesized that, in addition to better assessment and recognition, social media, school pressures, parenting practices, and larger societal changes have played a role. What we do know is that anxiety is currently the most common psychiatric disorder in children and adolescents. Epidemiologic data indicate that 13% to 20% percent of youth in the United States meet criteria for an anxiety disorder (Albano, 2013). That's nearly one in five children who are struggling to learn, interact, and enjoy life because of an anxiety disorder.

Sadly, 80% of children with anxiety disorders are not receiving treatment (Merikangas et al., 2011), likely due to issues of access to care and stigma. Even fewer children are receiving treatments that have demonstrated efficacy in research because it can take so long for the treatments evaluated in research labs to be adopted in community clinics. If anxiety is not effectively treated, it tends to be chronic. This is a major problem because anxiety disorders can be destructive to children's social, emotional, and academic functioning and can be the "gateway" to other destructive issues, including behavioral disorders, depression and substance use disorders. This places a massive toll on our children, families, and educational system.

To bring these facts to life, I'm going to describe the journey of Kim*, a teenager who struggled with severe anxiety. She gave me permission to share her story. Kim had an anxious temperament from the beginning. A shy child, she had difficulty separating from her mom in preschool. In the second grade, Kim witnessed a man cough up phlegm in a restaurant, and two weeks later she developed a stomach bug. This developed into an overwhelming fear of vomiting. From there, the anxiety began to cascade. Kim started having panic attacks when she went into public places where she

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could get sick, and she began to restrict her eating to avoid the possibility of vomiting.

Kim began to pull back from the things in her life that caused her anxiety to flare. She stopped going to stores and restaurants, and then she stopped going to school. She was hospitalized twice for refusing to leave her house or eat, and she had been put on a feeding tube. When I met her, she was 14, had been out of school for nearly two years and was spending her days at home alone, essentially confined to her bedroom because of anxiety. She had become depressed and was so out of practice of socializing with others that she had developed social anxiety as well. So the question is, how can we help a child like Kim reclaim her life from anxiety?

Cognitive-Behavioral Therapy (CBT) is currently considered the “gold standard” therapy for anxiety. A meta-analysis of evidence-based treatments for pediatric anxiety disorders demonstrated that individual CBT, group CBT, and group CBT with parent involvement currently have the highest level of research support (Silverman, Pina, & Viswesvaran, 2008). CBT is a short-term form of therapy that teaches people to manage problems by changing their thoughts and actions and developing skills to manage their emotions. The cornerstone of CBT for anxiety is exposure. This essentially means facing one’s fears in a gradual and structured manner. The goal is to help the brain learn that what you’re most afraid of isn’t going to happen, or that if it does, that you can handle it.

CBT traditionally takes place in the office once a week for 50 minutes. This has been our standard of care for 50 years, and it works for some children. But for children like Kim, with more severe and entrenched anxiety, it can be extremely difficult to gain traction in weekly 50-minute sessions in the office. In fact, research indicates that nearly half of children and adolescents who participate in weekly CBT for anxiety do not get better (Walkup et al., 2008). Over the years, my colleagues and I have seen many children who have been in weekly CBT for months and even years, and they are still stuck. The longer these children are stuck, the farther they fall off the developmental curve and the harder it is for them to get back on track. These children aren’t failing treatment. Our best treatments are failing them.

So my colleagues and I set out to develop an innovative solution to this problem. Three years ago, with the support of McLean Hospital, we started an intensive group-based program for children and adolescents with anxiety called the McLean Anxiety Mastery Program (aka “MAMP”). In designing this program, we expanded the length of CBT sessions, offered them more frequently, and conducted more CBT sessions outside the office so that children could engage with their real-life fears. Our goal was to maximize children’s treatment progress in order to minimize their losses in terms of their academics, extra-curricular activities, and social lives. We designed the program to be group-based because we wanted to reach more kids, and we knew from the literature that there were no differences in outcome between individual and group CBT in the treatment of pediatric anxiety (Silverman, Pina, & Viswesvaran, 2008).

This model of intensive CBT for anxiety and OCD in kids has been tested by several research studies, and outcomes have been favorable across the board (Ollendick et al., 2009; Santucci et al., 2009; Storch et al., 2007). In all of the studies, intensive treatment resulted in symptom reduction, and when there was a comparison sample, intensive CBT has demonstrated superiority to weekly CBT in a shorter period of time. So it’s clear that, at least in the research setting, intensive CBT is a viable option.

At MAMP, we treat children and adolescents who present with social anxiety, specific phobias, panic attacks, separation anxiety, agoraphobia, and obsessions and compulsions. These youths participate in treatment four afternoons a week for two and a half hours at a time, largely in the community. In the course of a month of treatment at MAMP, youth receive nearly a year’s worth of weekly therapy. In addition to participating exposure and CBT skills groups, children and adolescents also participate in weekly family work and medication consultations. While much of the treatment is group-based, each child’s treatment is tailored to his or her own needs and goals. For example, in any given exposure group, various staff members might be coaching various children: one child with panic disorder might be being coached to purposely induce and practice tolerating panic symptoms by breathing through a straw and spinning in circles; another child with social anxiety might be being encouraged to ask silly questions of strangers; a third child, who has agoraphobia, may be encouraged to wait in line at a crowded store. Children also have the opportunity to observe their peers’ exposure work and to provide encouragement and support to one another.

What does MAMP treatment look like in practice? Here’s what it looked like for Kim:

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After being housebound for nearly two years, Kim was literally unable to enter our clinic. So, for the first few days, we conducted sessions in the car. Each day, we would meet in the family's Toyota and teach Kim about her anxiety and some strategies to start facing it. With daily support in the car, Kim gradually learned to tolerate her panic symptoms and she built the confidence and trust to start engaging in treatment in a meaningful way.

I remember the first day Kim decided to get out of the car. She came inside the building and joined the group. A seemingly small step. But, in fact, a huge exposure for her. Her face was red, her lips were trembling, and she was hyperventilating. Her mom was terrified too, and frankly I was experiencing some vicarious anxiety. But Kim did it.

Once Kim was in our daily CBT skills groups, she gradually built the resources to cope with her extreme anxiety. For example, when she found herself thinking about throwing up, she reminded herself that this was unlikely but also manageable. She learned to calm her body before bed each night using relaxation strategies and to use mindfulness to stay more present during the day. She also practiced interacting with other peers in the group - a powerful experience after being socially isolated for so long.

The foundation of Kim's treatment was exposure. We exposed her to Harvard Square- the noise, the traffic, the people. Can you imagine what this would be like for someone who had been essentially house bound for two years? We rode buses and subways, we went into stores and restaurants, and Kim practiced talking to strangers. We did this on a daily basis, and Kim ventured farther and farther out of her comfort zone each day.

Finally, Kim was ready face her big fear: we exposed her to vomit. We watched videos of people throwing up. We created fake vomit by mixing mustard, salsa, eggs, and remnants of the previous night's dinner that had been left in the sun to rot. Kim inspected the mixture, smelled it, and eventually put her hands in it. Kim took these gradual steps forward each day and practiced her exposures at home at night. And one day, after riding the subway for exposure, Kim was feeling queasy as she exited the station...and she threw up on her shoes. This was a pivotal moment in treatment. Kim faced her worst case scenario fear and realized that she could handle it.

Critically, Kim's family was also involved in treatment. Kim's mother had daily contact with the clinical team. Over time, she learned to step back rather than rescue her daughter as she struggled through exposures. In addition, Kim met regularly with a program psychiatrist for medication adjustments.

With this type of intensive support, Kim was finally able to get unstuck. The team and I credit the intensity and the flexibility of the treatment model in allowing her to reclaim her life in just six weeks. Had we tried to meet with Kim in the clinic on a weekly basis, I'm not sure where she'd be today. So where is Kim now, two years later?

Kim is now attending high school and taking honors classes. She has a cashier job at a local store, and she's going to museums, hockey games, and restaurants. She still has bouts of anxiety but doesn't let this hold her back from living a full life. What probably strikes me the most is that Kim has begun to allow herself to appreciate the smaller, more subtle things that truly make a meaningful life. Recently, while listening to the car radio with her mom, she commented:

"I don't know if the songs are better now than they used to be or if I'm just able to enjoy them more."

So do we have this all figured out? Not yet. Our own research at MAMP suggests that children and adolescents do experience significant improvement during treatment. But we don't yet know the optimal "dose" of treatment or whether it varies by anxiety disorder. A few other intensive CBT programs for pediatric anxiety are cropping up around the country, and we are collaborating with our colleagues to brainstorm ways to adapt the model to fit individual needs. For example, we recently added home-based exposures for those children who are having difficulty leaving their homes.

We have a lot more to learn and more work to do. But at least we have some renewed hope for children like Kim.

*Name has been changed to protect confidentiality

Works Cited

- Albano, A.M. *You and Your Anxious Child: Free Your Child from Fears and Worries and Create a Joyful Family Life*. Penguin Publishing Group, New York, New York, 2013.
- Merikangas, K. R., He, J., Burstein, M. E., Swendsen, J., Avenevoli, S., et al. (2011). *Service Utilization for Lifetime Mental Disorders in U.S. Adolescents: Results of the National Comorbidity Survey Adolescent Supplement (NCS-A)*. *Journal of the American Academy of Child and Adolescent Psychiatry*, 50,1, 32–45.
- Ollendick, T. H., Öst, L.-G., Reuterskiöld, L., Costa, N., Cederlund, R., Sirbu, C., . . . Jarrett, M. A. (2009). *One-session treatment of specific phobias in youth: a randomized clinical trial in the United States and Sweden*. *Journal of Consulting and Clinical Psychology*, 77, 504.
- Santucci, L. C., Ehrenreich, J. T., Trospen, S. E., Bennett, S. M., & Pincus, D. B. (2009). *Development and preliminary evaluation of a one-week summer treatment program for separation anxiety disorder*. *Cognitive and Behavioral Practice*, 16, 317-331.
- Silverman, W.K., Pina, A.A., & Viswesvaran, C. (2008). *Evidence-Based psychosocial treatments for phobic and anxiety disorders in children and adolescents*. *Journal of Clinical Child & Adolescent Psychology*, 37, 105-130.
- Storch, E. A., Geffken, G. R., Merlo, L. J., Mann, G., Duke, D., Munson, M., . . . Goodman, W. K. (2007). *Family-based cognitive-behavioral therapy for pediatric obsessive compulsive disorder: Comparison of intensive and weekly approaches*. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 469-478.
- Walkup J.T., Albano A.M., Piacentini J., Birmaher B., Compton S.N., et al. (2008). *Cognitive-behavioral therapy, sertraline and their combination for children and adolescents with anxiety disorders: acute phase efficacy and safety*. *New England Journal of Medicine*, 359, 2753-2766.

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Lessons from Designing a Co-Taught Interdisciplinary Course

By Elizabeth M. Henley and Susan E. Cook, Southern New Hampshire University

Introduction

In the fall of 2016, we—Drs. Liz Henley from the Department of Computer Information Technology and Susan Cook from the Department of English—co-taught a course titled *Industrial Revolution/Digital Revolution*. Here we describe our process of creating this co-taught interdisciplinary course. While interdisciplinary research and teaching have received increasing acceptance and institutional support in recent years, our two fields of Information Technology and English are not typical of many interdisciplinary partnerships. Our work developing *Industrial Revolution/Digital Revolution* demonstrated to us the degree to which inter-school interdisciplinary co-teaching introduces specific challenges, but also specific benefits. While every institution approaches and supports interdisciplinary teaching differently, it is our hope that by serving as a case study, our description of our experiences planning *Industrial Revolution/Digital Revolution* will introduce useful topics for future consideration, inquiry, and application. As Alison J. Friedow, Erin E. Blankenship, Jennifer L. Green, and Walter W. Stroup note, “Despite claims about the possibilities interdisciplinary learning offers, we have few examples of how faculty from different disciplines work together to create interdisciplinary classroom environments where such outcomes can occur. In short, more examples of how faculty from different disciplines actually develop, engage, and revise *interdisciplinary pedagogies* with one another are needed in interdisciplinary scholarship” (405). This essay offers one such example by describing the development of our course, as well as the structures that made it possible.

Our class participated in by-now established higher education co-teaching and interdisciplinary teaching trends. Katherine K. Smith and Vanessa G. Winn note that the term “co-teaching” is the more common nomenclature at the K-12 level, arising out of the relationship between the “general educator and the special educator, in the wake of the amendment to the Individuals with Disabilities Education Act (IDEA) in 1997” (436). Yet, as Kenneth Tobin writes, “The central part to coteaching is teaching together—in ways that coordinate and compliment the teaching among co-teachers for the common good of all students” (191). Conversely, “team-teaching” is understood as a model “in which teachers trade responsibility, dividing up the workload and teaching within the comfort of their own specializations (Smith and Winn 436). This alternating approach to teaching is not favored by students, as noted by Kimberly Dugan and Margaret Letterman, who found that instead “students prefer team-taught courses with truly collaborative teaching methods” (14). Studies, such as that conducted by John R. Morelock et al, clearly indicate that true co-teaching provides “a desirable educational experience for students, providing a more in-depth exploration of content knowledge” (187).

The college co-teaching model is particularly well-suited for the interdisciplinary classroom, in which learning goals include asking students to make connections across different fields of knowledge. Adi Kidron and Yael Kali observe that our century poses “challenges that demand different ways of thinking and the development of new skills. One of the critical skills is the ability to think and integrate knowledge across disciplines and to understand the relations between fields of knowledge” (1). Indeed, the process of developing interdisciplinary modes of thought “requires a learning process through which learners integrate insights and modes of thinking from a number of disciplines to advance their understanding of a topic which is beyond the scope of a single discipline” (1). Interdisciplinary thinking and the collaborative pedagogies and technologies that support it serve students who must learn to use such modes “effectively in their personal and professional lives” (Tharp 46). Beyond this, however, Oskar Guenwald argues the future of knowledge itself is at stake: while “many in academe still consider interdisciplinary studies as a fad or fashion,” this is due to the fact that “academics are trained overwhelmingly in universities that continue the compartmentalization of knowledge among disciplines and departments...The result is an increasing fragmentation of knowledge and lack of insight concerning the interconnections and the unity underlying the phenomenal world” (23). With these issues and this framework in mind, we set out to make our own contribution to co-taught interdisciplinary studies.

Course Information

IT 2ST3: Industrial Revolution/Digital Revolution was a continuation of our teaching collaboration, which began in the fall of

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2012 with a reading communities digital project in Susan’s Major Author Studies course on Charles Dickens. Through this earlier project we learned that our research and teaching interests complemented one another’s in unexpected ways, and we decided to develop a course bridging our two fields, in the hopes that we might be able to model interdisciplinary modes of thought while teaching an already interdisciplinary topic. This previous collaboration resulted in an article, “Reading Communities in the Dickens Classroom,” published in the April 2015 issue of *Pedagogy*.

The course that eventually became *Industrial Revolution/Digital Revolution* not only pulled in information from our disciplines of information technology and literature, but also drew on additional related disciplines within our respective schools, such as economics and history. The course description reads:

This course examines the history, impact, and contemporary legacy of the Industrial Revolution through literature and cultural studies. Students will learn about the major cultural, literary, economic, and technological influences that led to and sustained the Industrial Revolution, and will study the 21st-century digital revolution in terms of this earlier cultural movement. The course will begin with readings, lectures, and discussions focused on the Industrial Revolution and its prehistory, and will conclude with readings, lectures, and discussions focused on 21st-century technological developments in the age of globalization. The middle third of the class will center around a Reacting to the Past game titled “Rage Against the Machine: Technology, Rebellion, and the Industrial Revolution.” This elaborate role playing game gives students the opportunity to learn about this subject in a uniquely engaged manner. The course will blend literature, history, economics, and information technology to provide students with a truly interdisciplinary experience.

As noted in the description, the course was essentially divided into thirds, with the first third covering the Industrial Revolution, the middle third consisting of the Reacting to the Past Game, and the final third applying this earlier framework to the Digital Revolution. The course included readings, discussions, and lectures about both the Industrial Revolution and its prehistory, as well as complementary readings, discussions, and lectures about 21st-century technological developments in the age of globalization. We assigned the novel *North and South*, by Elizabeth Gaskell, to give students an idea of some of the issues that were current at the time of the Industrial Revolution. In the final third of the course, we assigned *The World is Flat*, by Thomas Freedman, to cover the events leading up to and the current impact of the Digital Revolution.

Our selected Reacting to the Past game, “Rage Against the Machine: Technology, Rebellion, and the Industrial Revolution,” gave students the opportunity to learn about the Industrial Revolution by adopting the positions and arguments of nineteenth-century archetypes, such as mill owners, mill workers, shop keepers, and gentry. The game included readings to help provide context for the issues students were asked to grapple with as part of game play, and we used these readings to help students make connections to the rest of the course material. For example, we returned to Adam Smith’s theorization of the invisible hand throughout our Reacting game as well as in the final section of the course as we discussed globalization and different views on trade regulations. Similarly, David Ricardo’s discussion of the natural price of labor and Robert Owen’s position on how employees should be treated reemerged as discussion points throughout the course’s historical trajectory.

University Support

We are fortunate that our institution encourages interdepartmental and inter-school collaboration and supports interdisciplinary teaching. Whereas Kathryn D. Blanchard observes, “Ask any provost or academic dean why most professors teach alone most of the time, and you will hear the most persuasive of all reasons: money,” our institution has nevertheless made interdisciplinary programming a priority (339). *Industrial Revolution/Digital Revolution* was created with the support of the Center for Teaching and Learning (CTL) at Southern New Hampshire University (SNHU). Through the CTL, SNHU has developed many initiatives, and currently supports multiple types of programming around interdisciplinary work. One such initiative that particularly helped us came in the form of a Reacting to the Past workshop hosted by the CTL during the summer of 2015. Reacting to the Past is the name given to a set of historically situated role playing games designed for students, originally developed by Barnard College in the 1990s. There are now over thirty Reacting games either in development or fully peer-reviewed and published. The workshop we attended introduced participants to the

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Reacting game structure, and gave us an opportunity to play a truncated version of *Patriots, Loyalists & Revolution in New York City, 1775-76* with our colleagues. Reacting to the Past is an excellent conduit through which to approach interdisciplinary teaching, for as developers state on their website, “Part of the intellectual appeal of RTTP is that it transcends disciplinary structures” (*Reacting*).

We were further supported in our development of *Industrial Revolution/Digital Revolution* by a grant program offered through the CTL called the Innovative Teaching Partnership Program (ITPP). This program encourages faculty from two different disciplines to apply for and create a new course that merges their fields. Faculty engage in a year-long partnership, where they typically develop their course together in the spring semester and then teach the course the following fall semester. Only three partnerships are funded each year, and the program allows each of these courses to count as part of each faculty’s regular teaching load. In addition, the program provides a stipend for each faculty member to compensate the partnership for the time spent developing the new course. One requirement of the program is to give a presentation about the planning process and then another on the experience, which allows other faculty to learn more about the program. Another requirement of the program is that both faculty members must truly co-teach the course—not just divide up the content and assignments and essentially divide the class in half. ITPP courses are truly interdisciplinary. Susan previously received an ITPP grant in 2012, and designed a course on book banning in partnership with a library faculty member. Faculty have been funded for work bridging fields such as English and Graphic Design, Math and Chemistry, Organizational Leadership and Psychology, and Sociology and Marketing.

While faculty applying for an ITPP grant can be from any two different disciplines, priority is given to partnerships representing two different schools. At SNHU, our two programs fall under the School of Business and the School of Arts and Sciences. We wanted to create a course that would bring together two disciplines that are not typically taught together. Our aim was to show students how two different disciplines address a given topic, in order to demonstrate the methodologies and discourses that differentiate us, as well as the approaches that we share.

Course Development

As part of our process for developing the course, we both started with a selection of books: Susan for the earlier section of the course, and Liz for the later section. However, when we looked through the additional readings integrated into the Reacting to the Past game and the rest of the course timeline, we narrowed our additional readings down to one book per section. We used the game readings to help shape key connections to each of the two books. The game readings, which we both read, helped provide a common language for the focus of course discussions. The reading selection process was time-intensive, as we reviewed not only primary sources in our own fields, but also those suggested by one another. As part of our effort to make this a truly co-taught course, we took responsibility for learning about one another’s selected readings. This involved sharing summaries of the readings with each other during the planning phase and then reading those books in full, before the class periods when they would be discussed.

Once we had the rough outline for the course, our next step was to create the rest of the structure. We developed a reading schedule and determined what types of assignments might best allow students to demonstrate they had formed the connections we were asking them to make. We spent considerable time discussing the number of assignments and general guidelines for each, as well as determining the weighting for each category. We quickly learned that our preferences for certain types of assignments highlighted our disciplinary differences: Susan was used to more qualitative essay assignments, while Liz was more familiar with application assignments. We ended up incorporating both types of assessments into the syllabus. We determined when we would schedule shared office hours and agreed on other class policies.

We agreed that we would run each class together (except for the middle third when we would be moderating the Reacting to the Past game) as a combination of lecture and discussion. We agreed to trade off taking the lead in generating the class discussion points and overarching class-by-class trajectory for different major sections of the course—Susan for the Industrial Revolution material in the first third of the course, and Liz for the Digital Revolution topics in the final third. However, we both made sure to read all of the course materials and shared responsibility for the discussion topics, so that we were each able to jump in and contribute to lectures and discussions each class period, utilizing the co-teaching model

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as described by Tobin and Morelock et al, over the team teaching model as described by Smith and Winn. We coordinated this by creating a shared folder in Dropbox to hold all of our class documents. One of the files was a lesson plan document, where discussion questions and topics for each section of the readings were listed with notes identifying the main points to be covered each class period and how we wanted those covered: for example, whole class discussion, small groups reporting back, debates, etc. This document gave us a rough guideline, and we kept it open-ended so as to make adjustments throughout the semester depending on student progress, school weather closures, or other extenuating circumstances. The shared lesson plan document was extremely useful, although we also supplemented this with face-to-face check-ins before and after class, as well as during our shared office hours.

As we were developing the course we explored possible field trips, because there were local opportunities to show students what eighteenth- and nineteenth-century mills were like beyond just using images and descriptions in the course readings. We toured two nearby mill museums: the Millyard Museum in Manchester, NH, and the Boott Cotton Mills Museum in Lowell, MA. We are fortunate to teach in a part of the country where this American Industrial Revolution history is preserved quite literally just down the road from us, and while there are important distinctions between American and British industrial development in the eighteenth and nineteenth centuries, these points of difference become talking points in and of themselves, and the similarities help students connect to the course material in ways readings and lectures—and even role playing games—cannot. Simply touring these museums as we developed our course allowed us to enrich our approaches to the material. Each mill presented its history very differently, which is explained in part by the fact that the Manchester Millyard Museum, while operated by the Manchester Historic Society, is owned by the Amoskeag Company—the successor to the mill company whose history the museum recounts. The Boott Museum, on the other hand, forms part of the Lowell National Historical Park. We decided to dedicate a class period to taking the students to the museum near the campus and, due to time constraints, to make the Boott Museum visit optional for extra credit. We felt that it was important to visit at least one of the museums with the students so that they could put the earlier course readings and game in perspective, as well as being able to see the technologies that were being described.

While much of the process of developing this co-taught interdisciplinary course was similar to the process of developing any new course, we each noted specific differences.

Liz's Reflection

The most obvious difference I found in developing a co-taught course from developing a course on my own was the amount of compromise needed. Susan and I had worked together before, so I knew that we would not be extreme opposites, but there were still differences that popped up in our classroom policies, such as how we would break down grade weights, and even the number or type of assignments we would give.

With the interesting setup of our class, it allowed for us to still keep a variety of assignment types. For example, I tend to have a lot of assignments that have a heavy application piece, with students creating websites, mobile apps, physical items created with technology, or even reports to present to a business with technology recommendations. As part of many of these assignments, I also have several assignments that also incorporate a reflection component, about what went well, why certain decisions were made, etc. This meant that the Reacting to the Past game fit in well with that, as students were doing something with the material they were learning and also reflecting in journal assignments about why they had made different decisions within the game and what their overall strategy was. Understandably, literary analysis does not typically come up in my information technology courses. This meant that for some assignments, such as the game, we were able to combine both of our assignment preferences. Students needed to work with their readings to decide how their particular character would use that information or how to debate opposing viewpoints, applying the readings to their game strategy and reflecting throughout the process. With any assignments or policies where we were not in complete alignment and needed to make a compromise, I feel like we were both heard. If it was a situation where there was no middle ground, like whether or not to accept late work or if grades should be rounded, then the decision tended to go towards whoever felt more strongly about something. Overall, I think the course ended up being a good mix of both of us at the end. Going through the process also made me think more about my own methods because I had to be able to explain why I had things set up the way I did. It also gave me different ideas to try out in my other courses.

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There was also more of a time commitment involved in developing a course with someone else. We would meet regularly, starting with our initial proposal for the ITPP grant, then as we developed a firmer structure and syllabus for the course, and finally as we worked on the specific lesson plans. I was developing another course at the same time on my own, and it had a very different timeline, as I could make decisions based on what I wanted to do with the class without needing to talk it through with anyone else. This also meant that at times that I was not in a much of a rush if I was thinking through how I wanted to handle or structure a component of the course, as I did not need to be checking in with someone or have anything finalized until syllabi were due at the start of the semester. I could work in spurts on the course, as I had ideas about how I wanted to frame different parts of it. For the co-taught course, we had meetings where we would talk about different parts of the process, make a list of what each of us was going to work on, and create deadlines as to when we would either send the other person something or meet again. It keeps you more accountable on a stricter timeline because you know someone else is relying on you, so you cannot procrastinate, while at the same time it takes longer because you do want to make sure that both people have input.

Susan's Reflection

Co-teaching is something I enjoy, but which I also find challenging. As a literary studies scholar, I am accustomed to researching and teaching more or less alone, and since teaching my first class in the fall of 2003, I would say I have been largely left to my own devices to develop my syllabi and teach my classes. Even while teaching interdisciplinary material—which I frequently find myself doing in my composition, literature, or gender studies courses—I typically cover that material myself.

As Liz indicates above, one of the challenges of co-teaching is that it forces you to be able to articulate various aspects of your teaching methods or class policies. It also forced me to consider the extent to which my interdisciplinary teaching is framed by my literary studies disciplinary background. When I teach about photography in my Victorian literature course, for instance, I am doing so from the perspective of literary interpretation and cultural studies. The way I teach about the development of technologies changes when I am teaching alongside a colleague from IT, and a big part of this change is in the degree to which I am aware that the history I am teaching students is one narrative among several, inflected by my own focus in literary culture. Being able to confront the limitations of my own approaches to interdisciplinary work has been extremely valuable.

One of the other challenges of this kind of teaching is the way I approach time management—not only in terms of class prep, but in terms of how I think about time within the classroom. My classes tend to be heavily discussion-based, and I incorporate mini-lectures throughout. This more fluid style is harder to achieve successfully while coordinating with another faculty member, and the dynamic of class discussions changes when there are two faculty in the room rather than one. To account for this, we modified our lesson plans throughout the semester in response to the evolving classroom dynamic, though this was very time-intensive.

Finally, I think one of the more banal but very real challenges we faced had to do more with the extent to which interdisciplinary coursework is understood by the student body, and how it is incorporated into the curriculum. To attract a diverse student body to our course, we designated it as an IT course, but entered it into General Education for the School of Arts and Sciences (SAS). This, we hoped, would attract both IT students as well as SAS students who were required to take an IT course for Gen Ed. This worked to a limited degree, but I think we both felt that the development of interdisciplinary courses such as ours is potentially limited by the extent to which students perceive such a course as essential to their majors, or even whether they are aware of such courses. The virtue of the ITPP courses is that each is new and unique; the downside to such courses is that they are unable to capitalize on word of mouth. It feels a bit like the drive to create new interdisciplinary educational opportunities sometimes outpaces our means of creating an environment where those opportunities are able to be fully realized.

Conclusion

Co-teaching interdisciplinary courses is extremely rewarding, challenging, and—in our experience—requires substantial institutional support. While we were able to work together on a project for Susan's previous literature course, and could

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have continued thus by guest lecturing in one another's classes, teaching a more cohesive course together was only possible because of university support—in particular, the ITPP, which shows commitment to bringing together faculty to teach a new course. Without this course counting towards our regular teaching loads, the substantial work involved would have made running the course much more challenging, particularly as we work in different schools within our university. The process of developing a co-taught interdisciplinary course has many advantages for both students and faculty. Faculty are able to work more broadly on a topic and see how different disciplines look at that topic. In addition, working so closely with another faculty member allows you to explore different pedagogical choices and learn more about your colleagues. Students are able to see that all academic content does not exist in silos and are more likely to continue to realize that what they learn in one class does not only exist in that specific class or discipline. This models an approach to learning that we sorely need in order to solve twenty-first century problems. While challenging to support and facilitate, the benefits of this type of class are numerous, and we feel strongly that more faculty and students should have access to such opportunities. Guenwald offers a bleak view of a university without such support for interdisciplinary work, writing that "Departmental compartmentalization of knowledge hinders new discoveries in the natural sciences and 'connecting-the-dots' in the social and behavioral sciences, while humanities are relegated to irrelevance" (1). A true redemption of higher education and its relevance for both the future careers of our students as well as our culture at large, writes Guenwald, "requires re-envisioning the university" (22). As we see it, this process includes the funding of co-teaching partnerships and other institutional support for interdisciplinary research and teaching.

Works Cited

- Blanchard, Kathryn D. "Modeling lifelong learning: Collaborative teaching across disciplinary lines." *Teaching Theology and Religion* 15.4 (October 2012): 338-54.
- Cook, Susan and Liz Henley. "Reading Communities in the Dickens Classroom." *Pedagogy* 15.2 (April 2015): 331-51.
- Dugan, Kimberly and Margaret Letterman. "Student Appraisals of Collaborative Teaching." *College Teaching* 56 (2008): 11-15.
- Friedow, Alison J., Erin E. Blankenship, Jennifer L. Green, and Walter W. Stroup, "Learning Interdisciplinary Pedagogies." *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture* 12.3 (2012): 405-24.
- Guenwald, Oskar. "The Promise of Interdisciplinary Studies: Re-Imagining the University." *Journal of Interdisciplinary Studies* 26.1-2 (2014): 1-28.
- Kidron, Adi and Yael Kali, "Boundary breaking for interdisciplinary learning," *Research in Learning Technology* 23 (2015): 1-17.
- Morelock, John R., Marlena McGlothlin Lester, Michelle D. Klpfer, Alex M. Jardon, Ricky D. Mullins, Erika L. Nicholas, and Ahmed S. Alfaydi, "Power, Perceptions, and Relationships: A Model for Co-Teaching in Higher Education," *College Teaching* 65.4 (2017): 182-91.
- Reacting to the Past*. Barnard College. 2017. Web. <https://reacting.barnard.edu>.
- Smith, Katherine K. and Vanessa G. Winn. "Co-teaching in the college classroom," *Teaching Education* 28.4 (2017): 435-48.
- Squire, Megan and John Burney. *Rage Against the Machine: Technology, Rebellion, and the Industrial Revolution, version 1.2*.
- Tara Tharp, "Wiki, Wiki, Wiki—WHAT?" Assessing Online Collaborative Writing," *English Journal* 99.5 (2010): 40-46.
- Tobin, Kenneth "Twenty Questions about Co-Teaching," in *Transforming Urban Education*, ed. Tobin and Shady. Rotterdam, Sense, 2014: 190-204.

REVIEWS—CONTINUED

Barrenechea, Antonio. *America Unbound: Encyclopedic Literature and Hemispheric Studies*. Albuquerque: University of New Mexico Press, 2016. xiv + 231 pp. Hardcover ISBN: 978-0-826-35758-8.

Reviewed by Micah Donohue, Eastern New Mexico University

In “Good Neighbor/Bad Neighbor: Boltonian Americanism and Hemispheric Studies” (2009), Antonio Barrenechea challenged inter-American, hemispheric, and comparative American scholars to take a “modified” Boltonian approach to studying the literatures of the Americas. Barrenechea invokes the US historian Herbert E. Bolton, an important precursor to borderlands and hemispheric American studies in the United States. Addressing the American Historical Association in 1932, Bolton famously argued in “The Epic of Greater America” that a “synthetic view” of the hemisphere, one that focused on “inter-American relations,” is essential to a better understanding of the constituent nations of North and South America, their entwined histories, and, by extension, their overlapping literatures (448). While Barrenechea acknowledges the shortcomings of Bolton’s inter-American thesis, notably the Mexican philosopher Edmundo O’Gorman’s contention that it symptomatically reproduces US American imperial oversight, he still claims that Bolton’s “comparative and historically grounded [...] methodology” can serve as the foundation for a genuinely “transamerican studies project” (“Good Neighbor” 240). Such a project would form part—and itself be an example—of the “multinational and multilingual field” of comparative American studies (240).

America Unbound: Encyclopedic Literature and Hemispheric Studies adopts (and adapts) Bolton’s methodology for its own “transamerican studies project.” Barrenechea provides a comparative, inter-American rereading of four encyclopedic novels: Herman Melville’s *Moby Dick* (1851), Carlos Fuentes’s *Terra Nostra* (1975), Jacques Poulin’s *Volkswagen Blues* (1984), and Leslie Marmon Silko’s *Almanac of the Dead* (1991). *America Unbound* reveals how each of these canonical texts—Barrenechea calls them “hemispheric masterworks”—constitutes its own “multinational and multilingual field” that poetically entangles the languages, histories, and literatures of the New World. As Barrenechea explains, “one of the aims of *America Unbound* will be to bring a non-Eurocentric and more self-aware form of the Bolton thesis to bear on four of the most important novels from the Americas, and also to uncover the legacies of contact, conquest, and colonization that structure that trilingual literary corpus” (*Unbound* 8). In this compound goal that coordinates US American, Native American, Mexican, and Québécoise literatures, Barrenechea unquestionably succeeds. *America Unbound* provides eloquent and convincing accounts of “how each of these works self-consciously aspires to be a summa americana, i.e., a Greater American Novel about what Bolton calls ‘Greater America’” (10).

Barrenechea begins *America Unbound* with a short preface in which he claims that “American literature is a de facto comparative literature” (xi). By adopting a comparative perspective, Barrenechea hopes first to unsettle “what is currently a US-led hemisphericism” and, second, to accommodate methodologically the inter-American sprawl of the narratives that he is studying—novels “guided by a shared sense that American parts live in a complex relation to the hemispheric whole” (xi). The remainder of *America Unbound* is divided into five chapters plus notes, a bibliography, and an index. In Chapter 1, “The Great(er) American Paradigm: *Moby Dick* and the Summa Americana” (1–37), Barrenechea turns to Melville’s encyclopedic “masterwork.” After lengthy discussion of his neo-Boltonian position that would have been more effective in a standalone introduction, Barrenechea reaches the true subject matter of the chapter: a hemispheric reorientation of scholarly approaches to *Moby Dick*.

Barrenechea rereads Melville as a “New World writer who extends, in transgressive ways, the colonial legacy of the entire Americas” (13). The transamerican and global trajectory of *Moby Dick*, simultaneously a reworking of American and world literatures, allows Barrenechea to demonstrate that “a connection exists between the encyclopedic novel [of which, for Barrenechea, *Moby Dick* is prototypical] and a Greater American archive that is central to understanding its origins and significance as a New World variant of the genre” (14). In other words, encyclopedic American novels are always reconfigurations of a time- and geography-spanning “Greater American archive,” in the double sense of reconfiguration as a different assemblage and as a re-“figuring” or troping differently. This intertextual play of repetitions and differences, a defining characteristic of “Greater American” literature, is particularly evident in Fuentes’s *Terra Nostra*, which

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Barrenechea discusses in Chapter 2.

In “From Terra Incognita to *Terra Nostra*: Carlos Fuentes’s Reinvention of America” (38–71), Barrenechea claims that the Mexican author of *Terra Nostra* accomplishes a neo-baroque “reinvention” of “a tripartite globalism with colonial violence as a constant, a connection that exemplifies the subversive coupling of the encyclopedic novel with the New World archive” (39). Fuentes’s novel voraciously consumes centuries’ worth of histories and literatures from throughout the Americas and around the world in the inter-American tradition of *cannibalisme* and *antropofagia* to (re)construct an encyclopedic and neo-baroque retelling of those stories that is simultaneously an act of resistance against the colonial violence signaled by Barrenechea. Barrenechea leaps from Mexico to French Canada in Chapter 3, “Jacques Poulin’s Archival Pathways: *Volkswagen Blues* as Discovery Chronicle” (72–103). As Barrenechea notes, studies of Canadian, and even more so of French Canadian, literature are frequently absent from discussions of inter-American, hemispheric, and comparative American literature (72). (These omissions are also true of Brazilian and, to a lesser extent, Caribbean literatures—both of which are noticeably absent in *America Unbound*.) Barrenechea reads *Volkswagen Blues* not only as another “reinvention” of “archival materials that predate and/or undermine American national borders,” but “as a blueprint for the hemispheric study of Canadian literatures” that could also serve as a model for reorienting comparative American studies to use Canadian and Québécoise literatures as conceptual foci (74).

Chapter 4, “Leslie Marmon Silko’s Council Book: Hemispheric Forces in *Almanac of the Dead*” (104–138), locates *Almanac of the Dead* within “its proper hemispheric and historical context as an indigenous summa Americana” (105). By studying the transamerican narratives that Silko interweaves throughout *Almanac*, precolonial and post-contact stories that predate, enfold, and in some cases predict an end to the histories of conquest and colonialism that repeat in encyclopedic “Greater American” novels, Barrenechea demonstrates how *Almanac* constitutes a transformative “intersection,” a textual knotting together “of Latino, Latin American, Native American, ethnic, and border identities” (135). In the final chapter, “Greater America in the Classroom: Comparative Literature, Theory, and Praxis” (139–173), Barrenechea switches from hermeneutics to pedagogy. The chapter exemplifies how the same neo-Boltonian approach to interpreting works of hemispheric American literature can be used in teaching them, and Barrenechea “invite[s] scholars working in all fields of American studies to embrace a more comparative framework in the classroom” (145). Barrenechea offers his own model of such a framework: a three semester class sequence that moves from “New World Writing in the Colonial Period” through “Literature and Nation-Building in the Americas” to “Hemispheric Fiction of the Global Age.” Each class, in much the same way as the novels analyzed by Barrenechea, aspires to be a “summa americana” that reincorporates the multiple languages and histories that stitch together the hemispheric fabric of American literature.

The comparatist Earl E. Fitz, like Bolton a guiding light of Barrenechea’s, claimed in the 1990s that “there is something to be gained by showing how the canonical works of New World literature reflect themes or ideas that are themselves fundamental to our better understanding of the entire inter-American experience” (*Rediscovering* xii). A quarter-century later, *America Unbound* picks up certain of those themes and ideas to show how the encyclopedic novels of Melville, Fuentes, Poulin, and Silko are reflections and prismatic refractions of the “entire inter-American experience” of what Bolton called “Greater America.” In that hemispheric and comparative light, Barrenechea’s work unquestionably constitutes a gain for scholars working across time periods, borders, and languages in the Americas.

Works Cited

- Barrenechea, Antonio. “Good Neighbor/Bad Neighbor: Boltonian Americanism and Hemispheric Studies.” *Comparative Literature* 61.3 (2009): 231–43.
- Bolton, Herbert E. “The Epic of Greater America.” *The American Historical Review* 38.3 (1933): 448–74.
- Fitz, Earl E. *Rediscovering the New World: Inter-American Literature in a Comparative Context*. Iowa City: U of Iowa P, 1991.

REVIEWS—CONTINUED

Pace, David. *The Decoding the Disciplines Paradigm: Seven Steps to Increased Student Learning*. Bloomington: Indiana University Press, 2017. 157 pp. ISBN: 978-0-253-02458-9.

Reviewed by Carol Ann Sharicz, University of Massachusetts–Boston

The Decoding the Disciplines Paradigm is an engaging book that challenges traditional understandings of student learning, proposing a model driven by an interest in “determining what students need to succeed in a particular discipline” (3). This text has already inspired reflection on the paths for learning in my own courses, particularly in its promotion of an educational paradigm that is fundamentally nonlinear.

We have all had the experience of a student in one of our classes not being able to grasp a concept, theory, or application. Sometimes, a faculty member will attribute that roadblock in learning to the student, declaring it her fault that she cannot learn the course material.

In *The Decoding the Disciplines Paradigm*, David Pace seeks to resist such declarations by asking instructors to undertake reflections on their own practices, reflections that will help determine what students need to succeed in a given discipline. He asserts that “in part, ... problem[s arise] because instructors tend to concentrate on transmitting the content of their disciplines and skip over the actual procedures used to create knowledge in the field” (34). In order to circumvent such problems, Pace proposes a method that begins when instructors identify bottlenecks in learning a discipline, those areas where the typical student might get stuck. He asks the instructor to reflect on a straightforward but sometimes challenging question: What should a student be able to *do* with a given task, insight, or application? As the instructor poses such a question to herself, she keeps the burden of responsibility for student learning in the hands of the expert faculty member, rather than pushing it onto the novice learner. The questioning thus prompts the instructor to uncover those mental operations that have become familiar to her but likely remain obscure to a struggling student. Uncovering these operations that have become invisible in their familiarity is helpful in making tacit knowledge and processes more explicit.

Every discipline, of course, will have its own unique bottlenecks, but the self-interviewing process articulated in this book will help decode those points of difficulty regardless of the discipline in hand. One worthy note of caution Pace shares regarding what is necessary for students to get past a bottleneck is that it may take a team of interviewers to elicit the knowledge of the expert. In such a case, a team would comprise not only experts in a challenging discipline, but also experts in other fields. Pace provides examples of questions useful in the sort of decoding interviews that such teams can conduct, as well as transcripts of full decoding interviews. These examples, he argues, will help readers understand how to help students in any field (23).

Among the book’s charms is that Pace shares his own journey to the sort of decoding he advocates. Given that university educators face increasing calls for measurable results and accountability with regard to what and how we teach, this book is a must-read. It will be of interest to anyone helping students overcome obstacles to learning and interested in cultivating a deep learning environment.

Works Cited

Pace, David. *The Decoding the Disciplines Paradigm: Seven Steps to Increased Student Learning*. Bloomington: Indiana University Press, 2017.

REVIEWS— CONTINUED

Manarin, Karen, et al. *Critical Reading in Higher Education: Academic Goals and Social Engagement*. Bloomington: Indiana University Press, 2015. 164 pp. Paperback ISBN: 0-253-01892-2.

Reviewed by Beth Powell, Tennessee Tech University

Critical Reading in Higher Education begins by acknowledging a familiar discussion: many university teachers lament their students' low reading comprehension skills. The authors offer this discussion as context for their endeavor, which is to conduct empirical research on their college students' reading comprehension, analytic, and critical reading skills. In addition to the common stereotype that students read very little or lack motivation to read, the authors ground their research in an impressive breadth of theory, looking at reader-response theory, the transactional model of reading, critical reading theories such as constructivist approaches and critical pedagogy, and schema theory.

Drawing on the theories mentioned above, the authors conduct research at Mount Royal University in Canada, gathering data from four classes in four different disciplines: "Controversies in Science," taught by a biologist; "Texts and Ideas—Genocide," taught by an historian; "Communities and Societies," taught by a political scientist; and "Critical Writing and Reading," taught by an English instructor. Chapter 2 of the book describes the courses, with an emphasis on the multidisciplinary nature of the study, and the methods by which they collected and analyzed their data. Moreover, and very usefully, the authors provide their protocols and rubrics in an appendix.

Chapters 2, 3, and 4 offer the authors' findings, which they have again grounded in literacy and critical reading theories. Their findings reveal that students across the board have reading comprehension skills "with at least benchmark proficiency" (page 71), but they tend to have lower skills in evaluation, analysis, and motivation to read. Moreover, they find that students fail to show development in these skills over the course of the semester. In regards to writing with sources, which requires skill in analysis and synthesis, the authors found that students failed to think critically about the source material, opting instead for patch-writing or pulling out a sentence or two from a source to fit into their paper.

Based on the findings, the authors offer recommendations in Chapter 5, including five "needs," such as "students need to be held accountable for reading," and "the quality of reading needs to be assessed," in addition to needs pertaining to assessment, writing, and making personal connections to the reading (90).

The researchers' project is admirable, though their findings merely confirm what practicing instructors (including the authors themselves) have known for a long time. For example, their results offer empirical evidence that teaching reading and writing skills in college is challenging, research papers in university classes often lack the academic rigor and spirit of inquiry that teachers expect, and teachers and students often have different goals when reading. What would be an interesting addition to the text is a discussion that moves beyond higher education, that acknowledges that students may have stronger motivations to read texts critically outside of the classroom, that school-sanctioned reading and writing tasks are often perceived by students as arbitrary, and thus students may be likely to adopt efficient methods of completing assignments that are at odds with instructor goals. Within the context of students' motivations and non-school sanctioned habits, we could begin to discuss how to create conditions within our classrooms that will encourage engagement. In addition, the text assumes that teaching critical reading skills is an important and worthy goal, with the expectation that readers will be in agreement; to make their case even stronger and for a wider audience, perhaps more theory from the field of educational psychology would be useful for outlining practical impacts of critical reading skills.

Works Cited

Manarin, Karen, Melanie Rathburn, and Miriam Carey. *Critical Reading in Higher Education: Academic Goals and Social Engagement*. Bloomington: Indiana University Press, 2015.

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