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The Mechanics of new media (science) writing
Articulation, Design, Hospitality, and Electracy

Design Podcast Transcript (Christopher)

[0:10 sounds from Buddha machine]

Christopher: [:10] [Buddha machine noises throughout] Hi, My name is Christopher Grabau, Instructional Designer for the Reinert Center at Saint Louis University. As the Instructional Designer for the New Media Science Writing course, I worked with Dr. Nathaniel Rivers on both the course design process as well as provided in-class technical support.

In this podcast, I will discuss how a constructivist approach to course design helped provide effective conditions for learning as well as compliment the overall goals for articulation through the use of new media technology within the field of science writing.

[0:45 sounds from Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [:50] At Saint Louis University, a Catholic Jesuit institution, the approach to instructional design is a bit different from what can be found at other institutions ("Statement of Practice," 2013). While some Instructional Designers may find their work tied exclusively to the technical construction of a course—creating new websites or building online courses within a Learning Management System like Blackboard—my work as an Instructional Designer at the university is one of a co-investigator working along with faculty to explore both the technology and evidence-based instructional approaches that help create what Weimer (2013) described as a learner-centered teaching environment. At its core, this co-investigation is a pursuit to help better *articulate* the connections between teaching and learning, and it is a pursuit that often compliments the Ignatian tenets of *context, experience, reflection, action,* and *evaluation* the university identifies as its educational mission.

Christopher: [1:50] In 2012, The Reinert Center (Slu.edu, 2014c) awarded Dr. Nathaniel Rivers an Innovative Teaching Fellowship to teach his New Media in Science Writing class in the Learning Studio, Saint Louis University's high tech, highly flexible, learning environment (Slu.edu, 2014b).

While the studio provides an opportunity to explore new learning technologies, the fellowship allows faculty to explore new approaches to teaching by offering a chance to work with an Instructional Designer on the design of their course for one semester prior to teaching in the studio. The fellowship is a very competitive opportunity, with only a 50% acceptance rate.

Nathaniel's application was unique in that it successfully detailed how the New Media Science Writing course would provide new opportunities to utilize educational technology in order to help redefine student engagement and learning.

[2:38 sounds from Buddha machine/ 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [2:50] While utilizing educational technology is something that is not new, the context for *why* new media was to be utilized created an exciting pedagogical and theoretical framework.

It is one that complements what DeVoss, Cushman, and Grabill (2005), referred to as an investigation of "infrastructural dynamics"—one where new media creates space for "reflection and change within institutional structures and networks" (p. 37).

DeVoss et al. (2005) believed that writing programs must develop a productive and activist understanding for how to negotiate and navigate technology. Not only did the Learning Studio provide an opportunity to explore that relationship, it was the perfect setting to investigate how new media can have an impact on student engagement at an institution where context and reflection are a part of its core values.

It was quickly evident to see how the Learning Studio would be a perfect location to support Rivers' course in New Media and Science Writing. The studio is large enough to support multiple new media options but small enough to have small group instruction. Technically, the Learning Studio has a wide assortment of computer equipment including both PC- and Apple-based computing options, a large multi-input video wall, iPads, built-in video cameras and several other features that support a technology-based approach to learning. Most of the furniture in the Learning Studio sits on rollers which enables the instructor to reconfigure the room in a way that best supports their course.

[4:20 sounds from Buddha machine]

Christopher: [4:30] In mid-2012, Rivers and I started meeting to discuss how he would like to approach the course. My background is not in teaching composition or rhetorical theory but instead, educational psychology, media creation, and learning space design. Therefore, I needed to ask several questions in order to gain a better understanding for how Rivers intended to achieve his objectives for the course through incorporating media technology. What I quickly found was that my questions helped Rivers and I explore how both the learning environment and instructional approach can support using media technology for science writing and composition. It was an exciting and fun process that I believe complemented the overall goals for the course.

Rivers expressed interest in taking a differentiated, project-based learning approach to the course, which allowed students to both develop their skills in composition while—at the same time—provide an opportunity to hone their technical skills of media creation. This was a quite different approach than the traditional "sage on a stage" model of instruction where students sit idly by, receiving instruction while the teacher lectures at the front of the room (King, 1993).

Rivers wanted the New Media in Science Writing course to be mostly free from lectures, leaving class time to provide mostly technical assistance within an experiential learning environment.

Christopher: [5:51] Students were allowed to move around the studio throughout class time and were even allowed to leave the studio to capture new footage or to work as a small group.

This differentiated approach to instruction can be a precarious balance between teaching the subject matter and providing technical instruction. If either course content or technical assistance are overemphasized, students may become confused over the aims for the course.

At best, the course objectives can be diminished; at worst, they can disappear behind the process of providing technical support. Both Rivers and I were aware of the pitfalls of this design, and a lot of considerations were made to in order to ensure a healthy balance between subject-matter

instruction and technical instruction. We spent many hours discussing how to provide technical instruction in a manner that was efficient but substantive. From determining the best media capture tools[1] to determining how the room might be arranged, Rivers and I strived to approach technical instruction in a way that was *ambient*. Students did not see technical instruction as a hurdle before the *real* instruction of writing and composition would occur. But rather, it was an all-encompassing aesthetic throughout the course.

Christopher: [7:04] There were moments during the planning discussions where our conversations about the ambience of technical instruction would veer off into exciting and unexpected ideas that went well beyond writing composition and media technology.

At one point, we were even discussing introducing into the studio a Buddha Machine (Fm3buddhamachine.com, 2014), [7:20 - sounds from Buddha machine] a small battery-powered device that creates ambient noises, we thought it might help create what Brian Eno called "a sense of place that complements and alters your environment" (Tamm, 1989, pp. 53-54).

Christopher: [7:36] While adding an ambient noise machine into the classroom may seem like a strange element to introduce into a composition course, I believe it illustrates the same multilayered approach to articulation we strived to create within his course design. It is an approach that places the student experience—or the intended audience—as a key element in the construction of learning. Rivers' approach created an environment where the coursework gave the students the freedom to construct meaning as well as develop their own authentic voice through their class experiences. Ultimately, his course struck a balance where the coursework, the educational environment, and the student experience all became essential components to learning.

[8:15 sounds from Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [8:20] There are many learning principles that help articulate the relationship between design, environment, and the student experience; however, each principle can be distilled into a definition of learning that strives to identify how a *process* creates *change* through *experience* (Ambrose, 2010). For example, Driscoll (2002) proposed people learn in ways that are *contextual, active, social in nature,* and *reflective*.

While not formally introduced to the course, Driscoll's (2002) articulation of how people learn is a nice framework to help illustrate how the course design helped establish an opportunity where science writing can be experienced, honed, and articulated through new media technology. Each of the four components of Driscoll's (2002) framework helps illustrate the many ways in which Rivers and I carefully planned and coordinated efforts throughout the course design process as well as throughout the rest of the semester.

[9:18 sounds from Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [9:33] Driscoll's (2002) first framework—learning is contextual—complements Rivers' goal to "to cultivate the habits of a successful professional communicator working in an

[1] To help support the New Media in Science Writing course, The Reinert Center created media kits to help students easily capture video and audio. The kits include a Zoom Q3HD SD-based handheld camera. The camera is easy to use and can capture HD video as well as stereo audio. The kits are now available for other media construction type of courses.

increasingly collaborative, freeform, and mediated work environment." Over the last few decades, educational technology has become more adept at providing real world contexts for learning.

By utilizing new media technology (podcasts / vidcast) as a process to help students "develop an understanding of how rhetoric shapes science," the course provided a context where (now) common computer tools, help create an opportunity to look at how the construction, production, and distribution of scientific research can be articulated. Therefore, one of the key learning contexts for the course investigated how approaching scientific writing through new media technology created the need for students to sharpen technical skills, refine articulate writing abilities, collaborate with others, and to effectively reach an intended audience.

[10:37 sounds from Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [10:53] Driscoll's (2002) second framework proposes that learning should be active. Throughout the planning of the course and during the entire semester, I noticed how Rivers made a conscious decision to ensure that the New Media in Science Writing class remain a hands-on course where students worked throughout class time. The *experience* of utilizing new media technology to articulate science writing remained the key design constraint throughout the semester. Class time was designated to become studio work, in which students would collaborate, seek technical advice, and learn from their peers. Ultimately, the course became more than a series teaching moments but, instead, an immersive learning-centered environment where students, faculty, and graduate assistants worked simultaneously (Barr and Tagg, 1995).

[11:38 - 11:42 - no audio]

Christopher: [11:42] Although there were moments where I occasionally showed students an overview of audio or video production, most of their learning experience centered around the work they performed together.

Christopher: [11:52] Driscoll's (2002) third framework—that learning should be social—is a nice complement to Albert Bandura's social learning theory (1977). It describes how learning occurs through direct experience, assimilation, modeling, reinforcement, and interaction within one's environment. The structure of *this* course was one where students learned from one another within an environment they helped create. As mentioned, the course was conducted in the Learning Studio, a flexible high-tech learning space which provided students the opportunity to move around and use technology as they needed (Learning Studio, 2013). The studio is a stark contrast from traditional rows of desks and chairs typically seen in a classroom. It gave students an opportunity to interact and to learn from one another in formal and informal ways.

Throughout the semester, Rivers and I watched as the class created a social environment where they would continuously interact, brainstorm, and collaborate. Students were encouraged to work as they needed, moving white boards around, and utilizing technology whenever they saw fit.

[12:55 sounds from Buddha machine]

Christopher: [12:59] As a result, learning was not a single-source event, but rather an immersive learning environment, one where differentiated instruction established a culture for high expectations.

Throughout the semester, each group of students drafted several versions of their projects. Each draft demonstrated significant growth in writing and composition as well as growth in using media technology. Each draft also demonstrated how the students developed and supported a learning environment that thrives on collaboration, effective communication, and good time management skills.

[13:33 sounds from a Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [13:42] Driscoll's (2002) fourth framework—learning is reflective—complements the core mission for the university. As the second oldest Jesuit institution in the United States, Saint Louis University's core academic missions is the Ignatian Pedagogy—an underlying set of principles, values, and actions found within the Spiritual Exercises of St. Ignatius of Loyola, founder of the Jesuits (Slu.edu, 2014a). The components of the Ignatian pedagogy offer a way of understanding how deep, transformative learning can occur by identifying learning as a process that includes context, experience, reflection, action, and evaluation. Since the course was offered at a university that values tenets of the Ignatian pedagogy, it should come as no surprise that reflection was one of the key components for the New Media in Science class.

Throughout the semester, students completed field journals that tracked their progress on their projects. Although the journals provided an opportunity to measure and assess student work, they were more than just a writing assignment. They allowed an opportunity for students to stay on track with their projects as well as identify areas for growth in their own writing and technical skill. The journals enabled students to refocus their work in a more thoughtful way. They created a place for critical reflection, for synthesis and refocusing that were crucial components to the success of the course.

[15:10 sounds from Buddha machine / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [15:22] The perfect blend of context, active learning, social collaboration, and personal reflection established in this course helped make the student learning experience align perfectly with the overall course objectives. So much so that when I think of how successful each of these learning elements were incorporated into the New Media class, I think about a concept developed by Hungarian psychologist Mihaly Csikszentmihalyi (CHEEK-sent-mə-HY-ee) (Cgu.edu, 2014) called the optimal experience. In his book *Flow: The Psychology of Optimal Experience* (1990), Csikszentmihalyi discussed how flow is an event where an individual's abilities are perfectly aligned with both the environmental conditions and the task at hand. Like an athlete who performs with such precision they are considered to be in the zone, or a state of effortless centration, an optimal experience is an event where a person can successfully apply their skills to the best of their abilities (Csikszentmihalyi, 1990). I often thought about Csikszentmihalyi's (1990) flow theory while I was observing the class and thought that many of the considerations Rivers and I made during the planning of the course helped create an optimal experience for the students. It became quite evident to me when I witnessed students, some of whom were utilizing new media tools for the first time, progress from being a novice at using media technology to creating sophisticated scientific pieces that were both apt in technical skill as well as articulate in content.

[16:48 sound of Buddha machine swelling noise / 12-string electric guitar arpeggio - by Christopher Grabau]

Christopher: [16:51] I believe the intentional planning and thoughtful execution of the course helped create an optimal experience to support the articulation of scientific writing through new

media technologies. As the Instructional Designer for the course, it was an exhilarating thing to be a part of.

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