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Cover Page Footnote
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The notion that there is a gap between educational research and classroom practice is well established (Korthagen, 2007; Lagemann, 2000; Nuthall, 2004). Pine (2009) claims that teacher action research has the potential to close the gap and serve as "an approach for improving teaching and learning and for building a knowledge democracy" (p. 27). Hubbard and Power (2003) provide a convincing rationale for why teachers need to accept the challenge of developing their own knowledge base:

> *We teacher researchers bring to our work an important element that outside researchers lack—a sense of place, a sense of history in the schools in which we work. Because of our presence over time at our research sites, we teachers bring a depth of awareness to our data that outside researchers cannot begin to match. We know our schools, our students, our colleagues, and our learning agendas. Our research is grounded in this rich resource base.* (p. xiv)

Advanced teacher education programs have the potential to transform practitioners into teacher researchers. The Master of Arts in Education (MAE) Degree Program at Otterbein College, established in 1989, is a program for licensed/certified teachers who want to attend graduate school part-time while they continue to work full-time. The program theme, *professional empowerment through study, research, and reflection,* guides course design, candidate assessment, and exit requirements *(http://www.otterbein.edu/GradEd/mae.asp).*

Teacher as Inquirer is one of five core courses in the MAE program. The catalogue description reads as follows: *This course will focus on teacher research and provide an introduction to techniques useful for the type of classroom inquiry required in the MAE Capstone Project. In order to provide a basis for discussion, students will read relevant research on learning, cognition, and socio-cultural aspects of instruction.* In *Teacher as Inquirer,* candidates begin a classroom inquiry project that they complete during a capstone seminar taken in their final term of enrollment.

While the course goals and content have remained essentially the same since the program began over twenty years ago, the students have not. Graduate candidates are no longer there by choice; a masters degree (or equivalent) is now required in Ohio. Otterbein's demographic profile reflects this new mandate. A majority of candidates are teachers at

the beginning of their careers who need to earn a graduate degree before their tenth year of teaching. In the early years of the program, classes were likely to include teachers across the career continuum. Over the past ten years, they have been populated primarily by young teachers who are required to get masters degrees, often feel overwhelmed by the demands of teaching, and have limited intellectual or emotional energy to devote to their studies.

I have taught the *Teacher as Inquirer* course for over a decade. My major course objective is to get students started on the path to becoming teacher researchers. Lei (2008) found that research self-efficacy is enhanced when students have the opportunity to apply newly acquired skills in practice settings. While I knew what needed to happen, I was having trouble making it happen. An email that I sent to the Director of the Center for Teaching and Learning captured my dissatisfaction:

> *Does the course lose focus because I give into students who want the course to address policies and procedures related to the MAE program and still cover action research? Is it because I want the teachers to develop a habit of mind that will include ongoing inquiry, and they just want to get through the MAE program? Is it because I want them to be part of a community of practice, and they just want to work on their own projects? Is it because ten weeks is too short a period of time for students to learn to do action research? Is it because the students take the course at the "wrong" time, either too early or too late in their courses of study?* (March 28, 2008)

Even after changing texts, activities and assignments year after year, I still felt that students were simply going through the motions and that the course had to be redesigned if I wanted to create conditions that would be conducive to what L. Dee Fink describes as "significant learning" (2003). One key component of significant learning is engagement. However, absenteeism was a problem. How can students report on insights gained from classroom inquiry and act as critical friends for one another if they are not in class? On average, because of school or personal commitments, students were missing two or three out of ten classes per quarter. With the realization that weekly attendance at face-to-face meetings would not be possible for most of the students, I had to consider online alternatives.

CONCEPTUAL FRAMEWORK

The Promise of Technology

Scholarship of teaching and learning conducted as part of the Visible Knowledge Project (2004-2008) informed my design experiment (Brown, 1992). The Visible Knowledge Project involved seventy faculty members from twenty-two institutions across the United States over a five year period. Participating campuses and independent scholars investigated the role that new media played in course innovation and student learning. In

January, 2009, eighteen case studies and a project synthesis were made available on the Academic Commons site (http://www.academiccommons.org/issue/january-2009). Three themes emerged from the work of these teacher-researchers: pedagogies of adaptive expertise, embodied pedagogies and socially situated learning.

The first theme, *pedagogies of adaptive expertise*, was of particular interest to me. I wanted to model adaptive expert characteristics with the intent of getting my students to adopt them, thereby increasing their research self-efficacy. Bransford, Derry, Berliner, and Hammerness (2005) provide a description of what cognitive psychologists have defined as two types of experts: routine experts and adaptive experts. Routine experts learn to do something well and continue to use the same approach with greater efficiency over time. Adaptive experts, in contrast, are willing to change their "core competencies" (p. 49). Visible Knowledge Project investigators found that new media provided windows into "intermediate thinking processes...in novice learners…especially for abilities associated with adaptive expertise that allow practitioners (and learners) to make flexible use of knowledge in self-regulated ways" (Bass & Enyon, 2008, para.2).

The second theme, *embodied learning pedagogies*, caused me to reject my assumption that online instruction, by its very nature, is devoid of an affective dimension. Embodied learning pedagogies engage the whole person. Interactive capabilities (i.e., online discussions) as well as easy access to multimedia heightened rather than diminished opportunities for emotional engagement in the Visible Knowledge case studies. I realized that I could enhance my teaching by using technology to increase student engagement.

The third theme, *socially situated learning*, forced me to re-examine some basic beliefs I held about the relational aspects of instruction. I had assumed that rapport and a sense of community established in face-to-face interactions would be hard to replicate in an online environment. The Visible Knowledge scholars convinced me that social networking tools offered new ways for students to interact and collaborate with one another. In their case studies, the teacher-researchers demonstrated that the use of Web 2.0 tools could enhance authentic communication.

METHODOLOGY

Hybrid courses have the potential to offer graduate students the flexibility that they need and the traditional classroom encounters that they want. Using *Moodle* as the course management system, I wanted to explore both the possibilities and the challenges created by running parallel class meetings (one virtual, one physical) each week in a course focused on research methods. Since there were enough students enrolled to justify two sections, one of my colleagues volunteered to team teach the course with me. The Director of our Center for Teaching and Learning agreed to serve as a "critical friend" (McNiff and Whitehead, 2010, p. 61) throughout the planning and implementation stages.

The initial research questions were: What is the impact of choice (virtual versus actual class meetings) on student learning and student satisfaction in an introductory level

graduate course focused on teacher research? How will students respond if asked to collaborate in its construction throughout the term?

Self-Study of Teaching Practices

While self-study shares some attributes with other types of qualitative research, there are unique characteristics as well (LaBoskey, 1994). The original impetus for self-study is likely to be a "disconnect" between beliefs and actions. The teacher-researcher mines her personal history, delves into the professional literature, converses with colleagues and listens to students in order to make sense of the "living contradiction" (McNiff & Whitehead, 2010, p. 93) that prompted the inquiry. Self-study is intensely personal in that it involves taking risks and admitting to weaknesses, fears and biases. However, to qualify as scholarship, it must resonate with others and add to the knowledge base about teaching and teacher education (Loughran, 2007).

What was my "living contradiction" in the teacher inquiry course? While I believed that instructors need to be inclusive and responsive, I was not acting in inclusive or responsive ways when I became irritated with my graduate students who sent me emails about classes that they had to miss or when they failed to see how teacher research could make them better teachers. I came to the realization that I was teaching a time and space-bound course that made it difficult for practicing teachers to engage fully with the content, with me, and with one another.

Design Experiment

The project integrated self-study methodology into a design experiment (Brown, 1992). "Design experiments are pragmatic as well as theoretical in orientation in that the study of function—both of the design and of the resulting ecology of learning—is at the heart of the methodology"(Cobb, Confrey, diSessa, Lehrer and Schauble, 2003, p. 9). Design elements for the experiment (syllabus, rubrics, *Moodle* site architecture, and a student resource folio) can be accessed at: http://www.taskstream.com/ts/fayne/TeacherasInquirerCoursePortfolio.html.

The *Moodle* site included all course materials. Assignments were submitted electronically, and grades as well as instructor comments were communicated through and archived on the site. There were specific requirements each week for individuals who elected the online class; these submissions were used to award participation points. Students who attended face-to-face classes earned their participation points by interacting with their peers in large class discussions or small group activities.

Participants

Thirty-three graduate students (4 male, 29 female) enrolled in the Autumn Term, 2008 *Teacher as Inquirer* class. Five taught less than one year, twenty-one taught between one and five years, and seven taught for six or more years. Of the twenty-eight employed full-time in P-12 classrooms, seven were high school teachers, four were working with

youngsters in grades 4-9, and seventeen were teaching in early childhood settings. The remaining five students were either substitute teaching or working as coaches at the collegiate level. Licensure areas included Early Childhood, Teaching English as a Second Language, Language Arts, Mathematics, Social Studies, Health, Physical Education, and Special Education.

Data Collection

Data collection was extensive and varied. To gauge student attitudes, we used: 1) a "critical incident" online survey (probing reactions to the week three class); 2) focus groups that involved a midterm "instructional diagnosis" conducted by the Center for Teaching and Learning director during week five; and 3) a Wiki that required that all students post a response to the dilemma statement (see Data Analysis section below) during week nine. Participation patterns and student learning were assessed on the basis of attendance records, student work, instructor comments, and grades archived on the *Moodle* site. Instructor blog postings and course-related email correspondence were also considered to be data sources. In order to get an outsider perspective, we enlisted a doctoral candidate in educational psychology to attend a face-to-face class and conduct a formal class observation.

Data Analysis

Data analysis methods were selected from the "toolkit" in Altrichter, Feldman, Posch, and Somekh (2008), the assigned text for the course. The overarching technique employed was dilemma analysis (Winter, 1982). In dilemma analysis, the action researcher identifies a situation that requires a choice and then uses data to make an informed decision. The instructors shared the following dilemma statement with students during the first class and continued to refer back to it throughout the term:

> *Based on your experience in this course, help us to make a decision:*
>
> - *On the one hand...we could go back to offering this course without allowing students to attend class virtually.*
> - *On the other hand...we could convert the class entirely to an online course.*
> - *Or...we could keep trying to work with hybrid course design.*

Instructor blog entries, emails, student responses to attitude probes (Week Three Survey, Week Five Focus Group, and Week Nine Wiki), work samples, and the written report prepared by the external observer were analyzed and coded using the three deductive and two inductive categories referred to in the Data Analysis section. The deductive codes (pedagogies of adaptive expertise, embodied learning pedagogies, and socially situated learning) had been identified by Bass and Eynon (2009) as major themes in their synthesis of findings from the Visual Knowledge Project case studies. Two inductive codes (grading practices and technological glitches) emerged during the course as the two instructors reflected on each class, made adjustments based on these reflections and student feedback, and recorded the refinements.

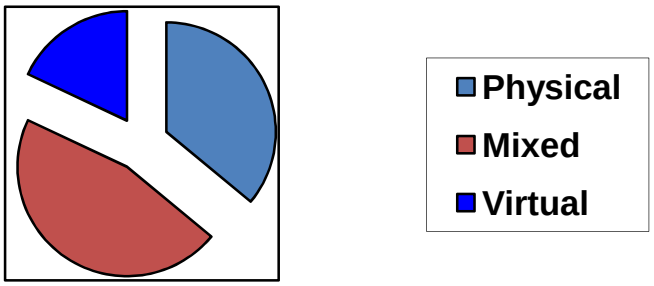
Quantification can help to describe a practice situation in terms that are easily understood by others. Attendance records and grades were two measurable data sources. It was helpful to be able to make comparisons between the two sections involved in the design experiment and section from the prior year that had prompted the study.

RESULTS

Attendance Options: Impact on Student Learning and Satisfaction

An examination of attendance records revealed that only six students elected to take the class entirely online. The majority (82%) either attended face-to-face classes regularly or took advantage of the hybrid format (see Figure 1).

Figure 1. Relative Proportion of Students Choosing One of Three Attendance Patterns



Note: Physical--Attended 9-10 Face-to-Face Classes (36%); Mixed--Attended 3-8 Face-to-Face Classes (46%); Virtual--Attended 0-2 Face-to-Face Classes (18%)

Attendance patterns would lend support for the conclusion that students found the face-to-face format to be more conducive to significant learning. However, the online survey that asked participants to respond to a series of prompts about the class held during the third week of the term provided evidence that this might not be the case. Both the discussion forums held online and the small group interactions held in class were regarded positively.

> *I enjoyed and was most engaged in class when allowed to see both sides of the action research plan that was presented. I enjoyed and was engaged when asked to: "Argue with me." I think this is a non-threatening way to engage in learning.*
>
> *I found the general feel of the forums to be refreshing. I particularly enjoy floating from post to post and reading the conversations that are taking place and then getting involved in the particular conversations that interest me most.*

The notion of self-regulated learning (a key component in adaptive expertise) emerged in Wiki posts. Students felt that instructors were demonstrating sensitivity to the needs of adult learners by providing options:

> *I think the advantages to a hybrid course design is that it gives students the opportunity to manage their own learning--to decide when they need a face-to-face meeting to meet their learning objectives and goals and when a more-self-directed model might be beneficial.*
>
> *I was incredibly grateful that we had the online option. I become frustrated when, as a working adult, my professors are not willing to consider their students' outside lives. So when I did have a conflict, it was so helpful to be able to know that I could just "attend class" online.*
>
> *I know my attendance was based on whether I understood the projects enough looking ahead. It also was determined by crises at school that needed my attention.*
>
> *Going over Chapter 6, "Data Analysis," more than once was when I was really learning...for example, I spent a lot of time studying explanations on theoretical notes, data summaries, data coding, and that was time well spent. I don't think I would have learned as much from attending the class in person. I am the kind of person who likes to take ownership of my own learning. I have noticed that I would often get distracted by listening to other people's dilemmas. Other students do not.*

Despite the fact that a majority did not use the virtual option regularly, students consistently indicated that they appreciated having it available to them. Fifteen of the 25 students who participated in focus groups during week five mentioned the hybrid approach when asked: *What helps your learning in this class?* Why would students value an option that they tended not to use? One student's Wiki posting is illustrative of the thinking of many of the participants:

> *I agree with many of the other postings that this class should definitely remain a hybrid course. While I am a person that enjoys going to class, it was nice to know that I would not be penalized for not being able to be at class on occasion. With the extra demands on teachers today, it really helps to have a class set up to be flexible. As a result, I was able to focus more on what I was learning rather than be stressed out about missing classes. However, I agree that I learned more from physically being in class rather than utilizing the on-line option.*

Did students attend the face-to-face class because they were afraid that their grades would suffer if they did not? One student's Wiki posting indicates that, at least for her, this might have been the case.

> *In the class, I feel that the main issue among the students is the disconnection between the online participants and what happens in class. Students who choose to or need to participate via the internet may have difficulty with the field assignments and participation activities because they missed the material covered in class.*

Was this student's perspective valid? There was some indication that those who attended the physical classes on a regular basis were more likely to earn exemplary grades than their peers who took greater advantage of the online option (see Table 1). Evaluation issues and technological glitches that emerged across the term may have privileged face-to-face over online participation (see next section for further explication of these themes).

Table 1
Academic Performance Categorized by Attendance Pattern

	Physical	Mixed	Virtual
A	11	9	3
A-	1	2	2
B+	0	1	0
B	0	3	0
B-	0	0	0
C	0	0	1

However, in general, students in the 2008 design experiment section earned high grades with greater frequency than had been the case for students in the 2007 section (see Table 2).

Table 2
Frequency Distributions for Two Sections of Teacher as Inquirer Course

	2008 (N=33)	2007 (N= 20)
A	70%	35%
A-	15%	15%
B+	3%	20%
B	9%	10%
B-	0%	10%
C	3%	0%
D	0%	10%

Students as Course Co-Designers: Emergent Themes

We were asking our students to behave in some very risky ways. First, we wanted them to share their own problems of practice. Secondly, we encouraged them to critique the work of the instructors who would be grading them. Third, we allowed them to make choices about class attendance that might or might not result in successful learning outcomes.

Evaluation Issues. Grading issues posed a threat to the spirit of collegiality that we had hoped to develop across the term. During the fifth week, students participated in focus groups that we labeled "an instructional diagnosis." They were asked to identify elements that were presenting obstacles as well as those that facilitated learning. The obstacles noted were remarkably similar across respondents. Students were unhappy with what they perceived to be unclear directions, vague rubric descriptions, and a rigid grading scale. Sue, my teammate, posted the following reflection on her blog (10/8/08):

> *So far, we have read and evaluated three different field assignments. Each time, following the grading of assignments, we have received feedback from 1-2 students—polite, but pointed—indicating that the grades students received did not reflect the assignment criteria outlined on the field assignment rubric. Because we view this class as our own action research, it is important to us that we think carefully about the feedback we're getting. We want the passion that is reflected in student assignments to continue and would hate for concern about grades/scores to dampen students' enthusiasm for learning. At the same time, we are committed to providing students with honest*

> *feedback. If we give students full credit, regardless of whether or not we think the assignment merits it, we feel like we're misleading them. We need to look at our rubrics. So now we're going to try revising the rubrics to make them more specific. Hopefully this will help to clarify for students what we are looking for.*

While the two instructors revised the rubrics, allowed students to re-do three assignments, and clarified directions as the term progressed, the sense that students who attended the physical class were at a distinct advantage over those who participated online never disappeared. Wiki postings at the end of the term consistently referred to the ability to get instructors' explanation of assignments, to ask questions, and to hear answers to questions posed by peers as reasons to keep the face-to-face classes in the future.

Technology Glitches: False Starts and Good Intentions. An excerpt from my blog (11/14/08) documented an interchange that occurred after asking the class to go to a lab and get started on the Wiki assignment. When all of the students tried to post simultaneously, error messages filled computer screens.

> *One student's comment when I again said mea culpa: "We are pretty forgiving..." They are. Why is this? Sometimes students seem so hyper-critical. Why did the climate in this class encourage grad students to be kinder and gentler? Is it that we kept admitting our mistakes and encouraging students to co-design the course with us as we went along?*

Flurries of unnecessary emails, online submission tools that did not allow students to complete an assignment in the way outlined in directions, and discussion boards that lacked posts when eager students wanted to get on and respond to another's ideas are a few examples of the technological missteps that characterized the first iteration of the hybrid course. I suspected that because both instructors were vigilant about responding to emails and making the necessary adjustments (including a number of cumbersome work-around solutions) to ensure that problems were addressed in a timely fashion, students handled their frustrations in a good-humored fashion.

CONCLUSIONS AND NEXT STEPS

In the self-study described in this article, it was my intention to address two research questions. The first was: *What is the impact of choice (virtual versus actual class meetings) on student learning and student satisfaction in an introductory level graduate course focused on teacher research?* Responses to attitude probes during weeks three, five and nine were consistent; students enrolled in the two sections of *Teacher as Inquirer* that served as the basis for the design experiment liked the freedom and flexibility that the hybrid redesign offered. If grades are a measure of student learning (and arguably they should be), then the fact that 70% earned A's when in the prior year only 35% had done so provides support for the conclusion that the redesign not only had a positive impact on attitudes but on learning outcomes as well.

To answer the second research question, *How will students respond if asked to collaborate in course construction throughout the term?,* I returned to the three Visual Learning Project themes—pedagogies of adaptive expertise, embodied learning pedagogies, and socially situated learning—and reflected about whether or not I had been able to integrate them into the course design. The students, who were novice researchers, were able to appreciate the recursive, cyclical nature of action research by collaborating on the self-study project. More importantly, they witnessed how valuable student voice can be in improving teaching practices. I felt that I had been able to model adaptive expertise effectively. In contrast, I was less successful at incorporating embodied learning pedagogies and socially situated learning, particularly in the online classes. Web 2.0 tools were not employed skillfully enough to ensure that physical and online participants felt equally confident and included. The course had been more successful at encouraging self-determination than it had been at creating a sense of community among all participants.

Future students will benefit from the excellent suggestions made by students in the first iteration of the hybrid course. These include: 1) holding chat room office hours; 2) requiring all students to participate in online discussion forums; 3) using only one or two easy-to-use online submission protocols; and 4) providing models of excellent work for at least some of the assignments. By incorporating these improvements, it is likely that students will feel better served regardless of the class delivery system that they elect to use.

I engaged in self-study because I was experiencing a "living contradiction" between my beliefs and actions. While the hybrid model, with some significant refinements, can help me to be more responsive and inclusive, there are still tensions that arise whenever I try to reconcile the notion of self-directed learning with students' need for clear expectations. Online delivery may, in fact, have exacerbated problems that arise in my classes whenever I attempt to create conditions that foster divergent, creative thinking and my students look to me for right answers and predictable routines. Ironically, teachers in my graduate classes are as likely to fall into the trap of focusing on "what it takes to earn an A" as are students who they complain about in their own classrooms. Balancing clarity with openness, explicit standards with abstract learning goals, and careful planning with serendipity remains a challenge worthy of further exploration.

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