The Scholarship of Teaching and Learning at EMU

Volume 2 *Making Learning Visible* Article 11

10-23-2009

Conclusion: Making Learning Visible - A Cyclical Process

Karen V. Busch
Eastern Michigan University, kbusch@emich.edu

Conclusion

Making Learning Visible: A Cyclical Process

Karen V. Busch
Director
Bruce k. Nelson Faculty Development Center

One of the joys of doing research is the never ending cycle of questions that it poses. It usually begins with a relatively broad question that, over time, gets narrowed down into a "doable" set of research questions. These become fleshed out into a research plan with a methodology or set of methodologies in which various forms and shapes of data are specified to be collected. However, during the data collection process, many things happen. It turns out, research, especially educational research, is not a neat, linear line. It becomes messy as both students and teachers "live" in the moment. As the data are analyzed, reflection is used to make sense of the results. Some questions get answered, but they generate an entirely new set of questions. Complexity returns—and leads to the planning of a new research project.

A similar process happens in teaching/learning. We narrow down what we will teach and what we can rightfully expect students to learn into chunks that fit fixed amounts of time per class and per course. We plan how we will achieve our own teaching outcomes and student learning outcomes. Then the richness and surprises of the interactions in the classroom (or online) during the teaching/learning occur. Finally we reflect on what was taught and learned—and a new set of questions arise about its effectiveness. There appear to be three main phases in the life of a course where teachers have influence: one is

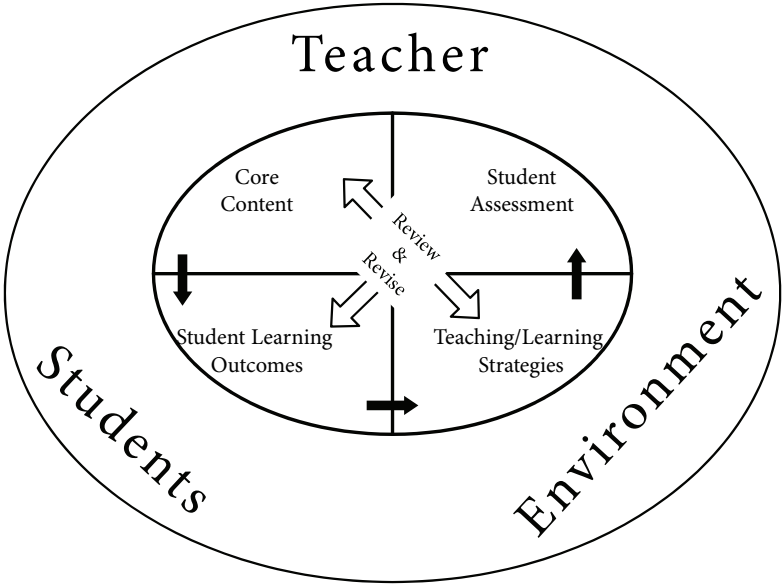
in the specific curriculum or course design process which includes all of the choices the teacher (and her curricular peers) make in the planning phase-before coming to class, or starting the term. The second is the lived experience, the interactions, the implementation of what was planned—during the term, in class, or online. Third is the process of reflection after, and sometimes during, class. This includes what went well, who learned and didn't learn, what they learned and why, how the next class can be improved, what will need to be reviewed, etc.

In both research and educational decision making, I shall call these phases: Planning, Implementation and Reflections. All of the authors whose works are presented here have, to one extent or another, been through this process--and have bravely written about their own and their students' triumphs and challenges. I will begin by reviewing what the authors PLANNED, before they started their research and teaching. Then—I will review some of the more interesting aspects of what happened during IMPLEMENTATION of their research/teaching/learning projects. Finally, I will conclude by exploring their REFLECTIONS and plans for the future. How will they take this learning and make it visible? These are the lessons they provide for all of us—whether we are currently teaching or not.

Within these three phases, there are many variables involved. Teachers have (somewhat) direct control over the specific content of a course, and the teaching/learning and assessment strategies. Of course, these days, with more accountability, general education programs, and professional accrediting bodies, many faculty would argue that they have less and less "direct" control. In addition, there are factors that the teacher does NOT control: who the students are and how much they have learned prior to coming to the course or class; and the physical and governing environments in which the class is taught. These variables must be examined, as they circumscribe the authors' research, teaching, and student outcomes.

In one of the early sessions of our SOTL seminar last fall, I introduced a streamlined model of curriculum or course design (see Figure 9-1). I find this model to be particularly helpful with faculty who are coming from disciplines where there has been little to no exposure to educational curriculum design or learning theory. The model be-

Figure 9-1: Course/Curriculum Model



gins with disciplinary content. It asks faculty to create a concept map of the key disciplinary concepts, principles or theories that they want students to use when they leave the course. As is apparent even in this volume, several of the faculty selected research topics that revolved around better ways to reach/teach students their disciplinary content.

The model begins with the disciplinary content or "topics," i.e., with the faculty's strength. Concept maps are particularly helpful at this stage, because once it is clear WHAT to teach, it is much easier for faculty to write student outcomes, followed by their teaching and assessment strategies. The model is cyclical in nature, and provides the ability to use the results of the assessment(s) to revise or change any other part of the curriculum design. This design model can be used to write a lesson plan for one class, a one-semester course curriculum, or the curriculum for an entire program. Once faculty have assessed student learning, they can revise, reformulate, or totally change any of the other components of the curriculum: the content, student outcomes, their teaching strategies or even the manner in which they assess student learning (and/or the content) of what they assess. Most faculty

are intuitively using some kind of implicit organizational structure to modify their own courses and daily lesson plans—this model makes it explicit.

At least three additional variables influence all of the four curriculum design components: the students, the teacher, and the setting (the physical environment and the rules, policies and governance structures of the university and beyond). Using this model, let us examine how faculty moved through both their research projects and their courses.

Planning: Revising/Restructuring or Creating the Course Curriculum

Most of the faculty authors selected one specific component of the curriculum design model to target; however, some addressed more than one. Mark Higbee focused on the students at EMU, and to some extent the physical environment in which the Reacting classes would be taught. He rearranged the physical environment to permit only 25 students per class. (I would also argue that being in classrooms without fixed seats was extremely helpful to the gaming efforts.) Mark focused in on student variables—writing and communication skills, for example, to determine if the teaching strategy (the Reacting games) would produce effective student learning outcomes. However, Mark also deliberately changed his course content. He noted that he cut down on his lectures (that is, the broad, general course content) and used the games to provide much more in-depth coverage of a certain situation or more specific period in history.

Several of the authors focused on course content: Barbara Leapard chose to determine what her students really understood about the underlying principles of mathematics in the form of fractions—as she terms it, fractional concepts. Solange Simões and Suzanne Gray added new content: a three-class section on informational literacy. Jean Bush-Bacelis created an entirely new course with content coming from several different sources.

Student outcomes usually remained the same. Most likely, this reflects the difficulty of trying to change what is officially provided to

students and is a university-approved set of curricular outcomes.

Most of the faculty authors planned changes in their teaching/learning strategies—sometimes in addition to their content changes. Jiang Lu planned two different forms of drawing for her students: free-hand, and AutoCAD. Xiaoxu Han introduced new software, Matlab™ for his students. In both of these cases, they left the content of their courses much as it had been previously, but rather dramatically changed the learning strategies—and to some extent, their teaching strategies. Jean Bush-Bacelis planned the most extensive change to the teaching/learning strategies. She planned to take her students into the wilderness and permit the challenges of living in such a "foreign" environment to provide a considerable amount of the learning.

Barbara Leapard's use of think-alouds served a dual purpose—they helped Barbara learn what her students were thinking about the content, and they provided a new teaching strategy for her pre-service teachers and her own teaching. Solange Simões planned a different form of "lived" experience for her students—academic service learning. The component of teaching/learning strategies is often the easiest place to begin planning when wish to make changes in our course designs. Such changes can be made incrementally, beginning with one class period or one short project, and build until, essentially, the teaching/learning strategies for the entire course have been revised.

While many others certainly took assessment into account as they made their plans, Jenny Kindred focused on the assessment component. How do you grade group work without giving group grades? This was truly a semester-long commitment to planned change. The grading system had to be laid out in her syllabus at the beginning of the term. Her very thorough literature review speaks to the difficulty of this issue, and her very thorough way of documenting the process.

Finally, Dibya Choudhuri planned an examination of the roles of the teacher, the students, and the content in creating a "transformative learning environment." It is fascinating to note that we do not learn much about her teaching/learning or assessment methods in the planning stage, because these were not her focus.

Implementing: The Lived Curricular/Course Experience

All of these faculty authors are well-seasoned, experienced teachers, with many years of classroom experience. They know that life happens—both in the classroom and without, and that not all students will learn the same content nor will they learn in the same way. A lot depends on how faculty taught and learned (interacted with their students) in the moment, and how their students interacted with each other and the teacher in the moment. This is one of the most illuminating themes of their making their learning visible to us. After the planning was done, and the faculty were in the process of implementing, that is, "teaching," what happened was often quite strikingly different from the original plan. The wonderful richness of these often impromptu teaching/learning experiences shine through.

Examples of the "lived" experience in these chapters are extremely thought-provoking and exciting. They explode off almost every page during the implementation phases. They also present challenges to faculty to capture the moment and make it into as much of a transformative learning experience as possible. For example, Mark Higbee conducts another half hour of "informal class" with his after-class hallway conversations. The day I visited, there were approximately 15 students actively discussing what had happened in class that day. What a bonus when one of them says, "For a moment, I felt I was Ralph Abernathy" (p. 48). Jiang Lu noted that her students used both forms of the media, depending on where they were in the design process and the newness of the design project. She also eliminated requiring the designs on the blogs because her students believed that the blogging environment was insufficiently private in the competitive class environment (p. 80).

Barb Leapard's students turned off the video to "work" the problem to perfection before turning the camera on, in order to present the correct version only. Jenny Kindred's students had varying reactions to the "no group grade" depending on the assignment. Jenny also noted that those students who did videotape one of their team sessions wrote much more insightful reflections. Solange Simões' students brought back their experiences from their academic service learning activities

and incorporated them into class discussion and their journals. While their observations may not have reached the full expectations of the authors, they nevertheless influenced the students sufficiently to create an affordance for doing more volunteer and service learning work.

The author who focused most exclusively on the implementation phase was Dibya Choudhuri. Both Dibya and her students wrote journals about what happened in class (and to some extent) what happened outside of class each week. Note how her students brought in their learning experiences from the grocery store, and other chance meetings. Also—Dibya pointed out the powerful ability of students to influence each other—through their remarks and actions to each other. Even chance remarks can be catalysts for learning.

During the implementation phase, the same curricular components occur: content gets changed due to class discussion or a particularly knotty concept that need more examples and further explanation. Actual student outcomes change due to the varied experiences students are having in the classroom and out. A teaching or learning strategy works really well, so more of the same is planned. Or, a teaching/learning strategy fails (who wants to read the book before coming to class?) so a different strategy is planned for next time. Finally, even the assessment strategies have to be revised to better assess what was actually covered in class.

In the SOTL seminar, we too, had a planning and implementation phase. Now that we are in the reflection phase, we have noted the abundance of comments in the chapters about the impact of the SOTL seminar conversations. I was struck by the number of authors' notations that it was some part of the conversation that we had had at a SOTL seminar in which the authors' ideas, plans, and yes--even their class surprises--had been clarified by their peers and leader. This bodes well for Jeff Bernstein's informal (yet semi-structured) teaching/learning strategy of short peer presentations, lots of open discussion and written feedback by and to all peers. However, the larger lesson to learn is that it was certainly helpful for most of these authors to have a group of peers with the process can be shared.

Reflection: Cycling Back to Planning

The planning and teaching/learning have been finished, and assessment of both teacher and students have been completed. What is left? All teachers will tell you: data analysis and reflection. The data analysis, particularly with qualitative data but even with quantitative data, often yields surprises. This then leads to reflection of one's own performance as well as student performance, and often reflection on one's environment. ("The bulb burned out on my projector today, so I had to wing it;" "there wasn't any chalk in the room, so I couldn't write on the board;" "I need to change text books; this one is out of date, etc.").

Returning to our faculty authors, how did they analyze their data and reflect? And what will they change or keep the same? From their more specific original questions that focused primarily on one curricular component, we now find that their plans for next time have increased (or, shall I say, "exploded"?) Not only are they planning to make revisions in their original component of focus (e.g., teaching/learning strategies) but most are moving ahead with even larger, more substantial course redesigns.

For example, Xiaoxu Han is not only changing textbooks, but will be adding Matlab™ homework assignments in addition to the in-class assignments. Jenny Kindred will be redesigning her grading system, but will also change some of the assignments and in class discussion to address the issues involved in team work and group assignments. Solange Simões and Suzanne Gray will focus on assignments that provide students with more opportunities to relate their research paper to their service learning projects.

In sum, the cyclical process of teaching and learning has been made visible to us all. We begin with a plan, and then we implement it. During the time together with our students (and time outside of class) we watch for the exciting interactions that tell us that learning is occurring–with or without the teacher. Finally, we reflect on how that learning did or did not occur, and we plan once more to attempt the teaching/learning cycle again. From the research of these authors, however, we are all farther ahead. It is through efforts such as theirs

that we all learn, and have the opportunity to improve our own teaching and learning, as well as that of our students. We owe them all our deep gratitude for so wonderfully exposing their teaching and students' learning to scrutiny—not only here at EMU, but nationally.

For the purposes of this conclusion, I have narrowly circumscribed the variables in the outer ring of the curriculum design model: the teacher, students and environment have been tacitly defined as the students taught by these faculty authors in this particular environment at EMU. Yet, as we know, the environment within which we teach and learn is larger than one regional state university. It is part of a larger system of higher education in the United States, and, more so every day, in the world. Some of the authors have already taken their work to the larger academic community, and I would encourage all of them to share their work as widely as possible. It is through this rich, systematic research and sharing process that we all learn.

Finally, I want to conclude with my own sincere gratitude to everyone at Eastern Michigan University who has made not just this book, but the rich learning experience of the SOTL seminar possible for all of us. In spite of difficult financial times, the Faculty Development Center (FDC) has remained a secure and steady sharing space for all of the facets representing faculty ideas and questions about teaching, learning, technology and research. Bringing a diverse group of faculty together from across campus to address difficult challenges of teaching and learning provided tremendous wealth and worth to the SOTL seminar quality. The ability of the FDC to create such opportunities speaks to the great strength and value placed on teaching/learning and research about teaching and learning at Eastern Michigan University. It is in the richness of sharing our teaching and learning that we make learning visible—not only for our students but for the world.