

Reflective practice in lesson design

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This paper recounts our reflections on the design and delivery of a unit of study at masters level. Information Technology and Teaching-Learning Process was delivered in a blended approach with the combination of face-to-face meetings and online sessions. The paper describes how the instructors engaged in “reflection on action” advocated by Schön and their efforts in bridging the gap between the standpoints of the students and that of the instructors by elaborating the rationales behind the design, providing technical support, modelling, creating opportunities for reflection and constantly making adjustments to meet the students’ needs. Through continuous reflections, the instructors gained deeper understanding of the curriculum.

Keywords: reflective practice, teacher education, constructivist learning, teacher learning

The ability to reflect is often regarded as an important attribute of an effective teacher (Posner, 1996; Borko, Michalec, Timmons & Siddle, 1997). When teachers model thoughtful and collaborative inquiry through reflection on their own practice, they are in a better position of meeting students’ needs (Loughran & Russell, 1997). Reflective practice also helps teachers to be critical of their assumptions and open to examining new beliefs and practices. This paper reports our learning journey of designing and delivering a core unit of study at master’s level. The discussion is based on the class that the authors co-taught in the first semester 2006.

Theoretical framework

The importance of reflection in teaching has been documented extensively in the literature (LaBoskey, 1994; Zeichner & Liston, 1996). Reflection, as defined by Dewey (1933), is “turning a subject over in the mind and giving it serious and consecutive consideration,” and it enables us “to act in a deliberate and intentional fashion” (p.3).

Schön (1990) indicates that reflection develops in a hierarchical manner. He makes the distinction between “reflection on action” and “reflection in action”. “Reflection on action” refers to thinking that occurs either before or after a lesson, whereas “reflection in action” is thinking during the act of teaching. Reflective practice is thought to open up the possibility for greater understanding of the complexities of classroom life and thereby provide the basis for improvements in teaching (Schön, 1987; Zeichner & Liston, 1996).

Context

Information Technology and Teaching-Learning Process is a core unit of study for the master’s degree in education at the University of Sydney. The aims of the course are to help students to develop a basic understanding of the impact of various learning theories on the design of information communication technology (ICT) mediated teaching/learning activities. By relating their own practice of using ICT to research literature, students learn theories and are prepared for meaningful ICT integration. In the first semester 2006, seven students enrolled in this unit of study. Although it is not a new unit of study, it was the first time that the two authors taught it and also first time to work together.

Two different standpoints

When it comes to learning, teachers and learners may have very different aims, meanings and values, or different standpoints (Dewey, 1900). Our students were mostly classroom teachers, and they signed up this unit of study for practical reasons. Some expected to learn specific technical skills. Others wished that we would teach them specific ICT integration strategies that they could immediately apply to their classrooms.

We, the instructors, on the other hand, had a different standpoint. We support the notion that the teachers who actively integrate ICT into teaching/learning are more constructivist in philosophy and practice (Becker & Riel, 2000). We believe that the best way of preparing our students for ICT integration would be introducing them to the paradigm of constructivist learning and exposing them to the works developed from such a paradigm. Instead of devoting the class time to lecturing theories and teaching technical skills, we believed that the theories and skills should be learned through engagement in activities using ICT.

Bridging the gap

Apparently, we needed to convey our rationale to the students and bridge the gap separating our standpoint from that of the students. At our first face-to-face meeting, we explained to the students about the reasons behind our intended approaches. Up to this point, most of our students had no prior experiences in constructivist learning; therefore, the initial explanations did not make much sense to them. To continuously communicate our intentions to the students, we had an asynchronous online forum open the entire semester inviting the students to provide comments, and raise questions and concerns about how the unit of study was designed and delivered. In addition, we asked the students to answer a reflective questionnaire every other week. By having these communication channels open, we welcomed the students to evaluate our standpoint and at the same reflect on their own.

Reflecting on belief systems

We followed the suggestion by Dewey (1900) that teachers should help learners make sense of the curriculum in the context of their current knowledge and experiences. As classroom teachers, our students brought with them valuable classroom teaching experiences. We prompted them to share the stories of their attempts in integrating ICT into teaching while surveying the literature on teachers' belief systems. As the discussion went on, the students reached a consensus that the way they used ICT was closely related to their beliefs on what teaching/learning was all about and how they viewed the potentials of ICT for teaching/learning. Our subsequent discussion on constructivism and its implication for teaching/learning with ICT became natural and made sense to the students.

Technical support

Our online sessions were carried out by means of synchronous chat and asynchronous discussion forums through Lrnlab, a learning management system developed by the CoCo Research Centre, the University of Sydney (Ullman, Peters & Reimann, 2005). Prior to joining the class, some students had used chat for social purposes. This led to our faulty assumption that the students would automatically transfer whatever they knew about chat to the context of formal education. We were proven wrong. Our first chat session was rather disorganized and the students doubted whether online chat could be used for learning. Evidently, a different set of skills was needed when chatting for formal education in a group context, and the students' lack of such knowledge and skills prevented them from thinking critically and participating actively. At the beginning of the second chat session, we showed the students a chat protocol, which included the procedures such as "using '?' to indicate you have a question" and "using '! to mean you would like to answer the question". To our delight, most students started to use the protocol right away, and our chat session became much smoother. To help a couple of students who were still not confident in using chat, we offered additional help by inviting them to the lab during the online sessions. Making us available (face-to-face) on the online sessions brought up some concerns. We were afraid that the students would become so dependent that they would want us to use the same way to teach each new skill to be introduced in the class. It soon turned out that our worries were unnecessary. As the students became more comfortable with technology, they seemed to be less fearful of making mistakes and were more enthusiastic about trying new skills. Perhaps, knowing that we were always available to help also contributed to this change.

Modelling

In addition to synchronous and asynchronous discussion, we also introduced the students to the use of a collaborative writing tool, concept mapping tool and wiki technology. When introducing each new technology, we explicitly modelled how it could be used and integrated into teaching. We provided examples of the required performances and demonstrating the most important steps and procedures. The students imitated our performances for a while, but their imitations ceased soon after they got a hold of

the new skills. One such example was to facilitate asynchronous discussion forums. The students were told at the beginning of the semester that each one of them would moderate one asynchronous discussion forum. We, then, divided the class into two groups. Each one of us led one group discussion by modelling how a moderator could facilitate group learning process. We modelled various facilitation techniques, such as asking questions and providing guidance. Soon, the students were confident enough to take turns in moderating their own discussion forums.

Collaborative learning

An online collaborative learning environment allows for the joint construction of knowledge and sharing the cognitive load, thus facilitating higher levels of learning (Ploetzner, Dillenbourg, Preier & Traum, 1999). The possibility of exchanging multiple perspectives forces learners to engage with ideas in a deeper sense (Anderson, 2003). We believed that the students would need to taste the benefit of computer-supported collaborative learning before they would consider adopting it for their teaching. We utilised all the possible situations to create an online environment where the students felt comfortable working collaboratively. The students collaboratively created a group wiki page, which allowed them to share their perspectives on the same reading. They also had opportunity to complete a concept map using whiteboard to summarise a paper they had just read. All the students' assignments were deposited in the assignment folder on the course website which could be viewed and commented by other students. Through these hands-on experiences, the students gained new skills of using various ICT tools. More importantly, they learned how to use these tools to build a learning environment where learners could benefit from peer interaction and working collaboratively.

Reflection

Throughout the semester, two of us instructors met on weekly basis to reflect on what had happened in the class and discussed about the strategies to improve the unit of study. Frequent reflection made us aware of what was going with the students' learning, and it enabled us "to act in a deliberate and intentional fashion" (Dewey, 1933, p.3) in modifying our learning activities. Although at one point we were concerned about the students' reactions to our frequent adjustments to the original plan, worrying that the students would think we were inconsistent, we soon realised that such a concern was needless. In the contrary, the students welcomed our flexibility to meet their learning needs. Our openness modelled another way of teaching in which teachers were critical of their assumptions and open to examining new beliefs and practices.

Reflections on our journey

Looking back at our journal in designing and delivering the unit of study, we have learned a number of lessons. First, we learned that meaningful learning experience starts from synchronising the standpoints of both teachers and students. As teachers, we need to inform students of the rationale of our course design, especially when it is based on a domain unfamiliar to them. When students seek understanding of what is being learned, they are more likely to engage in deep learning. It has been proven that there is a positive relationship between perceptions of worth and a deep approach to learning (Goodyear, Jones, Asensio, Hodgson, & Steeples, 2005).

Secondly, teachers need to provide extensive modelling when introducing new concepts and the use of technologies. We should always provide opportunities for students to observe and learn new knowledge by participating in technology-rich instructional activities. Often, students only view one dimension of technologies. They see technologies as machines/tools but neglect their potentials for teaching/learning. When they have problems with technologies, they would say that they have not learned anything and that everything is going too fast. Only after they become more comfortable with technologies do they start to feel that they have learned more and the lessons are more productive. The challenges for us instructors are to provide appropriate scaffolding so that the transition between the two stages is shortened.

Thirdly, teachers should constantly reflect on action, and be observant of what is going in the classroom and with students. When we are constantly trying to improve our teaching practices, we are more critical about our lesson plans and ready to make modifications whenever necessary. Reflective practice provided us with the basis for our improvements in teaching, and it increases the chances for successful student learning.

Finally, when designing online content, it is important that we take a dynamic approach (Sims, Dobbs & Hand, 2002). Instead of adhering to prescribed content, we should be ready to redefine the online content “by participants and subsequent interpretation and construction”, and to make changes during the delivery cycle (p. 138). In other words, the design of online content should suit the context where learners are situated rather than that our particular experiences.

The experience of designing and delivering this unit of study further convinced us that constructivist learning could make learning experience more motivating and interesting. No doubt, the lessons learned in the process will help us in our future teaching activities.

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