A Student Teacher Collaborative Community

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INTRODUCTION

When we walk into any schools or universities, we often find educators teaching in front of the classroom. Despite numerous theories and research of learning approaches, many teachers and academics still prefer to rely on familiar pedagogical approaches such as stand up lectures, worksheets and rote learning activities even though they might preach about other approaches to learning and teaching. Interestingly, this practice appears to be proportional to the age of the learners, that is, more commonly practiced at university level than at kindergarten level. Lecturing is the norm of teaching at universities (Biggs, 2001). Does the teacher-centered teaching approach sufficiently prepare the youngster to cope with the ever changing world?

What is Learning?

The traditional way of learning is rote learning facts and procedures where learners are assessed of their mastery of content knowledge. Vygotsky (1978) was among the pioneers who suggested a constructivist approach to learning, which emphasizes learning through social interaction which includes social relations and interactions with social artifacts such as linguistic symbols to construct their own knowledge. Bruner (1986) believes that learning is an active social process in which learners construct new ideas of concepts based on current knowledge. Lave and Wenger (1991) believe that both physical and social environment are important to the learning process. Biggs (2001) summarized learning as a way of interacting with the world. Jonassen, Peck and Wilson (1999) argue that students cannot learn without thinking. Both teachers and technologies play an important role in supporting and stimulating thinking which result in learning.

What is the Magic of Using Information Technology in Learning and Teaching?

There are numerous ways of using information technology in education and the main advantage lies with its flexibility and convenience. Information technology plays an important role supporting learning such as providing information in multiple modes, using technologies as mindtools, and scaffolding conversations virtually with anyone in the world (Jonassen, 2000; Jonassen, Peck, & Wilson, 1999). Information technologies such as e-mail and discussion forums provide a simple and convenient arena for single or multiple users to discuss asynchronously or synchronously. "We are finding that, for a small but growing percentage of people, new forms of communications, publications, and collaboration and the way data are accessed, represented and manipulated are changing the way knowledge is conceived, challenged, justified, and disseminated in their disciplines" (Batson & Bass, 1996, p. 43). However, technology is only useful when it cannot be taught more effectively using another teaching method (Keppell, Au, Ma, & Chan, 2004).

Why should we form Learning Communities?

The teacher-centered approaches were thought to be unsuitable for supporting higher order thinking and problem solving skills (McCaslin & Good, 1992). Furthermore, Scardamalia, Bereiter, Mclearn et al. (1989) suggested that schools inhibit knowledge building as it tended to focus on individual learning and abilities. Students were assessed on demonstrable knowledge, skills and activities and their knowledge was transmitted by their teachers. A number of researchers (Applefield, Huber, & Moadlem, 2000; Muukkonen, Hakkarainen, & Lakkala, 2005; Scardamalia, 2002; Woodruff, Brett, MacDonald, & Nason, 1998) proposed the creation of learning environments to facilitate student-centered learning so that they could construct knowledge in authentic and collaborative settings. Indeed, cooperative learning itself is nothing new. Johnson and Johnson (1996) document hundreds of successful studies on cooperative learning. They envisage the impact of the groupware environment for learning. In addition, Jonassen, Howland, Moore, and Marra (2003) suggested that learning is distributed among

the community. Learners' own knowledge and beliefs are "influenced by the community and their beliefs and values" (Jonassen et al., 2003).

There are a number of published successful cases involving the creation of virtual learning communities to extend learning outside the classroom. However, some of them are in K-12 school context (Barron, Vye, Zech et al., 1995; Scardamalia & Bereiter, 1996; Turkey, 2006) some are for teachers as professional development (Parr & Ward, 2005; Treweren & Lai, 2001) and some are related to business studies courses especially in information system discipline (Lee, Vogel, & Limayem, 2003; Martin, Hatzakis, & Lycett, 2004; Rutkowski, Vogel, Genuchten et al., 2002; Vestal & Lopez, 2004) but there is not much research in the specific area of student teachers education, even though it should be the sowing ground for trying out innovative teaching practices and a place to initiate cultural change.

"An irony is that, within teaching, much learning aimed at extending teachers' pedagogical content knowledge has taken outside the workplace rather than within the logical venue" (Parr & Ward, 2005). This chapter will discuss how to use a discussion forum of a learning platform to support various student-centered activities. The activities were organized according to different learning theories to enable student teachers to have an authentic experience of blending theories into practice. Tackling ill-structured problems as a group made the formation of learning communities meaningful. Koschmann (2000) suggested that teacher-educators have the obligation "to make explicit our theories of teaching and learning … that motivate our work and that are embedded in our designs."

BACKGROUND

What is Learning Environment?

Hannafin & Gall (1990) referred to learning environments as comprehensive integrated systems that prompt engagement through student-centered activities, including guided presentations, manipulations, and explorations among inter-related learning themes. Perkins (1991) suggested that technology-supported learning environments should be composed of information banks, symbol pads, construction kits, phenomena and task managers. Similarly, Hannafin (2001) further refined learning environments with four dimensions, namely, scope, content integration, user activity and educational activity and each dimension exists as a continuum. Learning environments are constructed by five core foundations namely, psychological, pedagogical, technological, cultural and pragmatic (Hannafin & Land, 1997).

Psychological foundations blend theories and research which are related to thinking and learning. Pedagogical foundations form the affordances and activities of the environment that are related to the psychological foundations. Technology foundations determine how the digital resources support, constrain or enhance the learning environment. Cultural foundations reflect the values and norms of a learning community whereas pragmatic foundations reconcile the available resources that encourage or prohibit a learning environment.

Best Practices

There are a number of student-centered learning environment practices in schools. The exemplary practices include anchored instruction (Cognition and Technology Group at Vanderbilt, 1992), cognitive apprenticeships (Collins, Brown, & Newman, 1989), project-based learning and constructivist learning environments (Jonassen et al., 1999).

Anchored instruction involves asking students to solve a fictitious problem with a realistic context. The exemplary case is the Jasper Woodbury series which consisted of fictitious situation presented in video format. The targeted students are fifth and sixth grade students. They are encouraged to tackle mathematical problems with geometry and other mathematical knowledge. For example, students are required to help to save an eagle in one episode of the series. Another episode is to help the characters Larry, Jasper, and Emily pass the final part of a contest. ASK Jasper software was later added to assist learner to explain their rationales and procedures of their design by having annotation structures such as "why" and "how to." The Cognition and Technology Group at Vanderbilt (CTGV) project also developed special multimedia arenas for refining thinking (SMART), which extended classroom learning to a learning community of 100 students (Barron et al., 1995). Students in the learning community call in answers to the problems after the programs have been broadcasted on a local television station. The fictitious problems are solved by learners both individually or collectively.

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