Abstract: Learning is moving beyond the recall of facts, principles, or correct procedures and into the areas of creativity, problem-solving, analysis, or evaluation. Learners need the opportunity to communicate with one another as well as with their teachers. A collaborative learning environment with the aim of inculcating collaborative skills into the learners and increasing their problem-solving and critical thinking skills. Results showed that students engaged in collaborative learning enhanced their problem-solving and critical thinking skills, learned to work in a team and became more autonomous learners.

Keywords: educational innovation; task-oriented; collaborative learning; computer support

1. Introduction

In the traditional directed instruction, the approach is essentially teacher-centred and uses rote and fact-based learning. The teacher is in control of the classroom and decides what and how much information is to be disseminated to the students. The teacher creates the values, behaviours and beliefs for the students. The students themselves are the passive recipients of the information and knowledge delivered to them by the sole authority, the teacher (Laurillard, 1993; Orlich et al., 1998).

These days, a new way towards incorporating technology, collaborative learning have begun to move into the classroom, to promote a better student learning environment. The technology used in the classroom acts as a support tool for the teacher to enhance students’ learning processes. Learning is moving beyond the recall of facts, principles, or correct procedures and into the areas of creativity, problem-solving, analysis, or evaluation (the very skills needed in the workplace in a knowledge-based economy, not to mention in life in general). Learners need the opportunity to communicate with one another as well as with their teachers. This of course includes the opportunity to question, challenge and discuss issues. Learning is as much a social as an individual activity (Bates, 2000).

This paper focuses on the creation of a collaborative learning environment in an undergraduate class in our university via a design project to promote collaborative and cooperative skills, as well as enhance students’ problem-solving and critical thinking skills.

2. A framework

In recent years, however, research has found that schools in which collaborative or collegial professional communities do exist among teachers ongoing teacher professional development is possible, coherence across teaching practices is created, and collective responsibility among teachers for student learning is cultivated.

In the theoretical framework of collaborative learning, students must play an active part in their learning process and not remain as passive learners as in the teacher-led instruction process whereby the teacher is the sole authority and distributor of knowledge. In the constructivist mode of learning, the learning process is shifted towards student-centric mode and students become active learners and take more responsibility for their own learning, and in the process, learn to construct knowledge on their own and determine their own learning outcomes.

Collaborative learning thus requires that students not only must articulate their own points of views but also to listen to the views of others in order to create knowledge and meaning together. In such a
learning environment, student-centric learning can be cultivated as the students engage in collaborative activities with their team members or peers, as well as with the instructor, who acts as a facilitator and guide to the students. By working in a group situation, students will have to tap into their group skills and use a variety of activities to accomplish the project’s overall objectives. The group, as a whole, would be responsible for managing their teamwork, resolving any group conflicts and come to an agreement on their own learning goals. In this manner, a collaborative learning experience can be gained.

Figure 1 A basic framework of collaborative learning

3. Methodology

Our research group seeks to train students that are not only skilled in the technicalities of multimedia applications but also able to develop, manage and think critically and creatively. Students are encouraged to become active learners in their learning environments. In this study, students were given this project as an introduction to groupwork and collaborative learning. Prior to this class, these students worked individually on their tasks and were competitive in their attainment of grades and assessments. By introducing collaboration and teamwork into the second semester of their university career, it was hoped to inculcate this learning mode into their educational environment to prepare them for real-life situations where collaborative working and learning is more the norm than the exception.

3.1 Participants

Participants were students in their senior year from school of economic and management. 120
students enrolled in a course on security investment. Fifteen multidisciplinary groups were formed by assigning participants by random.

3.2 Task

Participants were required to solve the “investment practice earning” case. They received the following task description: “You have been asked to manage RMB100,000 for a customer for three months, at the end of the session you are expected to come up with a viable result.”

3.3 Cross case matrices

Open-ended questions were included in the evaluation questionnaire to provide opportunities for extended feedback. The questions were divided in five categories: general issues, functional roles and task division, collaboration progress, coordination impact and assessment and supervision. Groups in the role condition answered 20 open-ended questions and students in the nonrole groups answered 17 questions. Cross case matrices were used to analyze students responses to the open-ended questions. The matrices were constructed by aggregating individual responses per group and per category. Next, individual responses were summarized at the level of the group to create a cross case matrix at the group level for each category. Finally, group level summaries were aggregated to construct cross case matrices at the level of the condition for four categories.

3.4 The role of the students

With collaborative learning, the emphasis on learning is on the students and the learning environment is student-centric. Here, the students become active participants in their own learning processes and learn to solve problems and work collaboratively with their peers. Learning takes place in a meaningful, authentic context and is a social, collaborative activity, where peers play an important role in encouraging learning.

Collaborative learning thus requires that students not only must articulate their own points of views but also to listen to the views of others in order to create knowledge and meaning together. In such a learning environment, student-centric learning can be cultivated as the students engage in collaborative activities with their team members or peers, as well as with the instructor, who acts as a facilitator and guide to the students. By working in a group situation, students will have to tap into their group skills and use a variety of activities to accomplish the project’s overall objectives. The group, as a whole, would be responsible for managing their teamwork, resolving any group conflicts and come to an agreement on their own learning goals. In this manner, a collaborative learning experience can be gained.

One student alone can only reflect on what he or she knows, but, in collaboration or communication with other students, can be introduced to varying and discrepant points of view with which to consider the merits of his or her own mental models.

Furthermore, each group was required to submit progress reports on their collaborative work every two weeks. This was to ensure that the students were following the guidelines properly and to identify any issues that may be of concern for any of the groups.

* Three progress reports, i.e. the group journals;
* The group theme and the team leader;
* Group presentations of their final work

3.5 The role of the teacher

The teacher had four main objectives to carry out. The first was to provide theoretical and technical foundations to the students. This objective was fulfilled by the students via their attendance in lectures and tutorials, where they received lectures on multimedia imaging and performed weekly tutorials in the labs. The second objective was for the teacher to carry out on-going progress checks on the students to see if they were successfully building their skills. This was done formatively and throughout the course via the tutorial assignments that the students had to do to demonstrate their technical proficiency with the software. They also had to hand in periodic group proposals which allowed the teacher to monitor
their collaborative efforts and group dynamics throughout the course period, and to target any potential conflict that might arise. Group meetings were also conducted and reported to the teacher for monitoring purposes.

4. Understandings from the study

The new educational way helped teachers improve their practice by facilitating the creation of a certain kind of learning space. They helped the teachers see themselves in new ways, connect their private worlds of practice to those of others and to broader educational issues, and develop shared norms of good teaching practice.

Creating a learning space based on authenticity, risk-taking, trust, and open doubt. At the beginning of the study, the members in struggling to find a focus for their group, had their own individual inquiries, and their common resolve to change their classroom practices. A sense of collegial learning began to pervade the members’ interactions and collaboration between members began to extend beyond the confines of the group meeting time. Through story sharing they allowed their colleagues to see into their practices and thinking. They began to share their doubts about their practices more openly and to trust each other. The group became a collaborative learning space.

5. Conclusion

Therefore, A learner-centred environment empowered students to become active participants in their learning processes and made them responsible for their own work, as evidenced by their deep reflection processes in their group journals and websites. Students learn how to compromise and reach a consensus in group decision-making situations, so as to achieve their common goals in these collaborative environments. It means collaborative learning environments enhance the student learning process and provide opportunities for the optimal intellectual and academic development of students in the institutions of higher learning. During the whole collaborative learning process, the students learn authentic skills by working in an authentic situation, thus cultivating skills that are much needed and highly valued in the workplace.

References


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