LEARNING TO STIMULATE ACTIVE LEARNING IN CLASSROOM SETTINGS: AN ACTION RESEARCH PROJECT

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ABSTRACT

Learning has to be active so that students can make connections between what they already know and what they are about to learn. Yet many students come to class assuming a passive mindset. Teachers, on the other hand, tend to continue to reinforce learning as a spectator sport. The result is a classroom and overall learning environment that is mostly limited to transmission of information rather than meaningful construction and application of knowledge. A group of college lecturers set out to change this, at least within the context of their own classrooms. In order to do so, the teachers formed a community of practice which began with discussions on how to stimulate active learning in their classrooms. For most members of the community, the lecture-based method has been the dominant approach. The others have had a number of years of implementing active learning strategies at varying degrees. This article will describe the process, successes and challenges based on the experience and data collected by this community of practice functioning as an action research team.

KEY WORDS

Active learning, Community of practice, Action research

INTRODUCTION

It has happened to many of us. The students come into class at the beginning of the semester, sit in their chairs, and almost automatically assume a passive mindset as they settle into what Chickering and Gamson (1987) refer to as their roles as “spectators” of learning. What is worse, we as teachers frequently allow, if not encourage, learning to be a spectator sport. In between numerous sincere but often ineffective attempts to facilitate discussions, we expect them to sit passively and learn.

Well, we wanted to put this to an end (at least, in our own classrooms). Learning has to be active so that students can make connections between what they already know and what they are about to learn (Driscoll, 2002, 2004; Bransford, et al., 2000). So the main purpose of this paper is to highlight the process and the initial findings of an action research project of college lecturers learning how to stimulate active learning in their classrooms.
**Research Objective**

Six college lecturers got together and expressed a collective concern of how much learning actually takes place in their largely lecture-based classrooms. The students were generally contented to be passive recipients of the teacher’s lectures, but it was hard to ignore that much of what was learned remained largely inert. These concerns made us look into active learning strategies as our past experience about good practices in teaching and learning had exposed us to benefits of active learning strategies (Chickering & Gamson, 1987). In attempts to justify our continual use of largely lecture-based methods, many of us argued that we were bound by our immediate needs to “comply, survive, conform or meet a time constraint” (Finley, 2000) to complete the syllabus, prepare the students for examination and produce a “bell curve” result at the end of the term.

Ultimately, we still recognized a need for change in our pedagogical approach. The students must learn to talk and write critically about what they are learning, relate it to past experiences, and apply it to their daily and future lives (Chickering & Gamson, 1987; Driscoll, 2002, 2004). But where do we begin? How do we begin to engage students in active learning? And how do we go about learning how to stimulate active learning experiences? These questions guided the discussions of a community of practice, which also functioned as an action research team.

**Methodology**

The project team relied primarily on action research methods to guide and capture the changes in the teaching and learning processes implemented in classroom settings (McNiff, 2002). It has been a reflective as well as an active process of progressive problem solving as individuals working together within a community of practice learn how to better stimulate active learning in their own classrooms. Data was captured in the form of individual and group reflection exercises during regular face-to-face meetings, as well as synchronous and asynchronous communications online via web conferencing, wikis, and email. Student feedback and unobtrusive data sets such as students’ assignments and lesson plans were also collected. The action research project is being carried out at three institutions of higher learning.

**LITERATURE REVIEW**

Many academicians and researchers have been urging teachers to promote active and more student-centered learning (Chickering & Gamson, 1987; Bonwell & Eison, 1991; Christensen et al., 1991; Meyers & Jones, 1993; Kloss, 1994; Silberman, 1996). To learn something well, students need to hear it, see it, ask questions about it, discuss it with others, and to act on it (Silberman, 1996). Organizations today are seeking individuals who exhibit both effective communication and analytical, critical, and creative problem-solving skills as drivers of success in today’s ever-changing conditions. These skills and abilities can be cultivated in the educational setting if students are given the opportunity to engage in learning more actively (O’Brien & Hart, 1999; Merritt, 2001).
Bonwell and Eison (1991) define active learning as “instructional activity involving students in doing things and thinking about what they are doing.” Instructional activities include problem-solving exercises, informal small groups, simulations, case studies, role-playing, and other activities that focus on developing not only students’ knowledge but also their skills and abilities by providing opportunities “to talk and listen, read, write, and reflect as they approach course content” (Meyers & Jones, 1993).

Through this application, students are able to grasp relevant theories and concepts they learn and also develop transferable skills they need to excel within dynamic working environments. Though methods of active learning may vary, it can encourage and engage students to think more critically (Kane, 2004). Positive recalling and learning, commitment and personal growth of students are also fostered once they are involved in active learning (Braxon et al., 2000).

The role of teachers would then be as facilitators rather than transmitters of knowledge (Vega & Tayler, 2005). They present themselves as model learners, display enthusiasm for their subject, acknowledge limitation of their knowledge and remain open to new ideas (Silberman, 1996). Due to this, the significance aspect of learning responsibility shifts to learners since pacing of learning is placed on them (Kane, 2004). Students become active participants, engaging in a dialog with their peers and with the instructor.

**CASE REPORT**

We started off by forming a community of practice (CoP) that comprised of instructors from diverse backgrounds: business, computing, physics, English, and education. In this, we saw an opportunity to grow professionally as teachers and learners, supported by a community of critically questioning, caring colleagues (McNiff, 2002). This network helped prepare and support us for the initial experimentation of active learning methods to complement the lecture method we used in the classroom. We have met regularly for more than 3 months (and continue to do so) to share our lesson plans and our classroom experiences, obtained ideas and constructive feedback from the CoP members, and improvised our lessons based on these interactions to improve the learning engagement among our learners.

As the goals and vision of the community of practice took form, we began to look into the active learning (AL) literature to better understand what is AL, why and how it could be implemented into our teaching and learning. We began to talk about different ways to encourage the students to talk and write critically about what they are learning, relate it to past experiences, and learn to apply it to their daily and future lives (Chickering & Gamson, 1987; Bonwell & Eison, 1991; Driscoll, 2002, 2004; Silberman, 1996).

We considered different ways to engage students in active learning processes, both physically and cognitively. This could be done by focusing our classroom activities that allow various levels of self-empowered learning. Such activities include pause technique, case study, think-pair share, and round-robin. These created opportunities for students to work independently and collaboratively to solve problems as well as to propose new ideas (Auster & Wylie, 2006).
Each member of the community chose an AL method that we were comfortable with and which we thought would best meet the desired learning outcomes. The most common methods used by most of us were mind-mapping and group discussion, followed by pause method, reverse mind-mapping and self-assessment and written critical reflections. Other methods that were attempted include peer assessment, round robin, pair discussion, debate, video recording, student-led discussions, hands-on-experiments, problem-based learning (PBL), summarizing and interviewing. Thus, we did not restrict ourselves with just one method. Instead we started with the method we individually were most comfortable and familiar with, and which we thought would supplement our in-class lecture to actively engage students as they learn in the college classroom. At the same time, we did not want to introduce overly drastic changes to substitute the lecture method since we weren’t sure how the students might respond.

*Extending Our Professional Knowledge and Practice*

As a community engaging in action research, we actively learned with and from each other. In this regard, we looked forward to regular interactions but faced challenges in terms of finding a common time and location to meet. To overcome these, we used Wikispace as a forum for discussion and feedback. We posted our questions and queries about the method we intended to use in the classroom and we gave feedback, suggestions and tips together with related literature to aid in the implementation of the method. While Wikispace was helpful, it alone was not sufficient to completely replace a live and dynamic discussion. Thus, we met face-to-face periodically in addition to using Wikispace. Our face-to-face meetings were used as a platform to pick others’ brains on using a particular method, and to find ways of overcoming challenges faced in the implementation of active learning methods.

During our implementation of AL methods in our class, we faced successes and challenges in engaging the students cognitively. The following discussion provides more descriptive details of how we extended our own professional knowledge and practice of active learning strategies.

*Mind-mapping.* One of the instructors had doubts about using AL strategy in her class because it involved a group of students who had weak academic history. Her concerns were mainly whether these students would be willing to engage in experimental exercises and more importantly whether she could ensure that learning takes place. After some discussion, the CoP members assured her that AL can take place at any level (Sutherland & Bonwell, 1996). We then suggested that she could start off with mind-mapping strategy as recall and comprehension are highly needed with this group of students (Bloom, 1956). With such support, she confidently decided to use mind mapping strategy for the first time in her class. Contrary to her initial concerns, students were excited and fully engaged in the activity. However, students began to lose interest after the same approach was used several times. She shared this reflection with the CoP at one of the meetings. During discussion, one of the members of community shared the ideas of using reverse mind-mapping. As the name suggests, it basically calls for students to put key terms that they can remember on the board, and then have them make and explain the connections between the key terms. The instructor went back to the class and implemented it where she noticed significant student engagement and participation.
Think-pair-share. One of the instructors attempted using think-pair-share to solve case studies in a final year class with 14 students. At the end of the lecture, she asked the students to select their own pair to do the activity. She then gave clear instructions to the students and set the time limit to solve the problem in the case study. After the first round she realized that not all students were actively engaged in the discussion. Some pairs were sitting quietly and observing other pairs discussing the case. When the instructor questioned them on the lack of participation, the response was that they were not able to solve the problem by themselves and that they prefer to work in a bigger group where they feel more comfortable. She reflected on the method and decided to change it from think-pair-share to group discussions and she found the students to be more responsive.

Round robin. One of the instructors who used the round robin method – where each student in a group takes a turn sharing for a preset amount of time – in her final year class of 9 students. After two slow rounds that required instructor guidance, the students began to think and ask relevant questions to solve the problems. This experience made us more aware that with right motivation and guidance students would be willing to participate and take responsibility of their learning (Chickering & Gamson, 1987). But most importantly, we have to be persistent and patient to enable them to realize the benefit of learning from each other rather than solely depending on the instructor.

Problem-based learning (PBL). When one of the instructors wanted to introduce a comprehensive PBL-based e-book project for his class on instructional technology, he shared his ideas and concerns in engaging the students in the activity. The CoP discussed the method and gave suggestions on getting students to participate in the project. Based on a number of discussions, the instructor designed a PBL project so that students could collaborate to write an e-book (on Wikispaces) for in-service teachers on facilitating teaching and learning with technology. In order to write this book, small groups of students were to identify a real problem, propose solutions, implement the solutions, and evaluate the quality of the solution. Each group wrote a chapter, essentially describing the going-ons of each case. In doing so, they had to write critically about what they are learning, relate it to existing literature, and learn to apply it to their teaching.

Linking theory to practice. One of the instructors assigned a take-home activity to second-year degree students that required them to link concepts of electrical circuits and motion learned during a physics class to a movie that they had recently watched (“Terminator Salvation”). About 60% of the class was able to illustrate a few examples of both concepts used in the movie. This experience taught us that by relating concepts to students’ interests outside classroom (in this case, movies) can enhance their learning experiences.

LESSONS LEARNED AND LIMITATIONS

Not everything we tried was successful. For example, one of the instructors faced significant challenges in engaging the students cognitively. At the end of a lecture, students were divided into groups to discuss the concept of cause and effect. Students picked their own group members and at the end of the discussion, they presented the material to the class. But to the amazement of the instructor, the most active and participative group got many of the causes and effects mixed up. This shows that students can have fun during an activity, but fail to achieve the learning outcome. When this issue was raised at the following CoP meeting, the
members suggested that the instructor assigned the group instead of letting them choose their own. This was to ensure that the group did not detour into unrelated personal discussion, but to be more focused on the activity. Another suggestion given was to monitor and re-mediate the students’ engagement throughout the activity (Sutherland & Bonwell, 1996). The instructor implemented both suggestions and noticed improvement in students’ responsibility in completing subsequent activities.

Through our collective experience we learnt a few truths about AL. We realized that there is no one method that fits all. We had to change the activity altogether or just make slight changes to the ongoing activity to achieve our goals. Each of us experimented with different activities during this research period and found that some activities work for some instructors and for some group of students and some did not work. For example, when two instructors tried using field trip for final year students, one instructor found that the students could associate what they saw during the trip with what they learnt in the class, but the other instructor found that the students could not relate the lesson to the trip.

**Emerging Evidence of Learning**

Despite various outcomes experienced by each of us, we wanted students to reflect what they had learned in classes and most importantly, we wanted to know if we achieved the desired learning outcomes. We wanted students to recall consciously what and how they have made sense of what they learned. We chose different means of gathering feedback, including reflection logs, learning audits, surveys, video-recordings or more traditional assessments such as projects, presentations, written assessments and exams.

We received comments on what worked and what didn’t, areas that needed improvement and how much learning learners perceived happened in the teaching and learning process. These feedbacks were then shared with the CoP. Most activities were well accepted by students, and those that were not well-received, were improved on or replaced. We also focused on how well the students were learning.

For instance, one of the instructors received feedback from her 9 students about their learning during a round-robin discussion. In individual written assignments, they were able to explain and discuss concepts based on the case study given by the instructor. They appreciated hearing the perspective of their usually “reserved classmates,” instead of hearing views only from the vocal ones. Initially, few (2 of 9 students) submitted this individual written assignments (no marks or extra credits were given). However, in subsequent classes, more individual written work was submitted and by the third attempt of a similar class activity, all students submitted their individual written work without being reminded by the instructor. The instructor gave feedback as soon as she could for these written work so that the students can begin to work on areas that they can improve on. Instructor encouraged students to maintain a portfolio of their work. This enabled them to shed light on their progress in this exercise.

Another valuable feedback was done through video-recording where students did a two-hour role-play as a trainer with a group of trainees in a Training and Development module. The “trainers” then watched and were able to evaluate their own performance. Their peers also provided constructive feedback. In this process, they learned to recognize their strengths and identified areas they needed to improve on. Perhaps as a sign that they had developed greater
confidence in their own learning, students could even laugh at their own mistakes. This activity was time consuming and required a lot of preparation from both learners and instructor, but it was well worth it as the students learned to critically evaluate themselves in the presence of, in many cases with the support of, their classmates. As this research project advances, more data will be collected to better understand if and how some methods may be more effective than others.

CONCLUSION

Action research questions usually take the form, ‘How do I improve what I am doing?’ (McNiff, 2002). In this situation, we asked ourselves, “How do I improve my teaching so that my students can learn more actively?” This question provided the necessary energy and focus for a community of practice to come into formation. This simple network allowed us to safely and effectively explore and practice numerous active learning strategies to be incorporated in our classroom teaching. Through this, we extended our own professional knowledge and practice of active learning strategies. We learned to use different strategies, including mind-mapping, think-pair-share, round robin discussions, debates, pause method, problem-based learning, student-led discussions, self-assessment and written critical reflections. We are beginning to see our students learning to talk and write critically about what they are learning, relate it to past experiences, and apply it to their daily and future lives (Chickering & Gamson, 1987; Driscoll, 2002, 2004). While the initial indicators are extremely positive, there’s still much for this community of teachers to discover and learn.

REFERENCES


