OPERATIONAL EFFICIENCY OF INTERACTIVE E-LEARNING AMONG POST-GRADUATION STUDENTS IN TEACHER EDUCATION

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ABSTRACT

This study is set in the context of a Post Graduate course for Teacher Education where the participants were exposed to a systematic reflective learning strategy facilitated by a structured interactive e-learning platform. The e-platform was used for students to share, reflect and they had demonstration of skills in class. The researcher intended to develop generic skills as well as the professional skills of a teacher. e-platform illustrates the roles of students' participation and its impact over the development of both personal and professional skills. The reflections of the students before and after the program reveal the achievement of learning outcomes. It envisages the recommendations of NCFTE (National Curriculum for Teacher Education, 2009) and OECD (2013) at global level. The findings reveal the skill development of the students in terms of generic skills (critical thinking, analytic reasoning, problem solving and written communication) as well as professional skills (knowledge on advanced methods of teaching and delivery in classroom).

Keywords: Reflection, Learning Environment, E-platform and Blog.

INTRODUCTION

At global level, the much-sensitized issue is development of thinking skills such as critical thinking and problem solving for the youth to face the challenges. It demands learning environment that support learners in development of such skills. Such learning environments are the design outcomes of a largely constructivist pedagogical philosophy, adoption of a deep approach to learning and a learner-centered approach to teaching, and outcomes-centered subject design (Phillips, 2005). National Curriculum Framework states such environment for Teacher Education (NCFTE, 2009) as teaching is not on didactic communication but on non-didactic and dialogical explorations. Further, it recommends Teacher-educators to evoke responses from students to engage them with deeper discussions and reflection. Students are to be encouraged to identify and articulate issues for self-study and critical enquiry. They need to maintain reflective journals on their observations, reflections including conflicts.

The Teaching and Learning International Survey (TALIS, 2013) framework is based on the concept of effective teaching and learning conditions. In the case of TALIS,

effective teaching and learning environments are the environments that contribute to positive student learning. They recognized the need to identify the right mix of skills that will be needed for strong, sustainable and balanced growth in the 21st century. One type of skill they indicate is Generic skills. However, learner motivation is a critical factor. Teasing out how best to design for learning is always complex and involves a degree of compromise (Goodyear, 2009). The teacher needs to design flexible learning experiences that support learners with varied capacities. Learning experiences are embedded with learning tasks, which have interactions between a learner and a learning environment (optionally involving other learners, practitioners, resources, tools and services) to achieve a planned outcome. Under this definition, task, content and context are fundamentally inseparable (Beetham, 2004).

Generally the learning tasks are planned in terms of achieving the prescribed learning outcomes or the specified objectives of the course. Educators argue that, whether it is an outcome-led design or it emphasizes on input and process. Whatever it may be, teachers need to think of the basic components of learning such as the learning environment designed for learners to use, the

learning processes used by students (how they learn); and the learning outcomes that students can demonstrate (what they learn) (Rob Phillips, Carmel McNaught and Gregor Kennedy, 2012).

Research reflections

Ferguson, Leila Eve & Braten, Ivar (2013), Barzilai, Sarit, Zohar, Anat (2012), Pate, Michael, Miller, Greg (2011) Kendeou, Panayiota, Muis, Krista R., Fulton, Sandra (2011), Mason, Lucia, Ariasi, Nicola; n, Angela (2011) state that, epistemic thinking plays an important role in inquiry learning. Students possess epistemic cognition and they seek justification for knowing by different sources, that most participants spontaneously activated beliefs about all four dimensions identified in the literature, which are simplicity/complexity, certainty/uncertainty, justification, and source of knowledge, at different levels of sophistication. Most epistemic reflections were about the source of knowledge.

Choy, S. Chee and Oo, Pou San (2012) recommend that, teachers need to practice the four learning processes such as assumption analysis, contextual awareness, imaginative speculation and reflective skepticism which were indicative of reflection. It would be suggested that, critical thinking is practiced minimally among teachers. Boghossian, Peter (2011) provide concrete examples of actual constructivist practice and shows how a particular constructivist classroom exercise can be modified to incorporate critical thinking elements. Lilienfeld, Scott O; Ammirati, Rachel; David, Michal (2012) argued that, scientific thinking safeguard against a host of errors in thinking. Tanisli, Dilek (2011) revealed the information about the reasoning abilities of the students, in other words about their alternative ways of thinking in generalizing the correspondence relationship. Boersma, Kerst; Waarlo, Arend Jan; Klaassen, Kees (2011) insist the useful preparatory learning and teaching trajectories by proceeding with the formal introduction of systems thinking.

The researches on teaching and learning have emphasis on 'reflection' which appears to be straightforward and uncontentious. The terms critical reflection, reflective learning and reflective practice are often used interchangeably and not clearly distinguished from each other. Reflections indicate interaction with individual responses, peer responses and teacher responses. Similar descriptions are also applied to one or the other.

On the basis of the learning reflections, the researcher has made an attempt on developing discipline based skills as well as generic skills among PG students in teacher education at Pondicherry University. The e-platform was used for students to share, reflect and they had demonstration of skills in class.

The reflections of the students before and after the programme reveal the achievement of learning outcomes. As University faculty handling PG students in Teacher Education on professional development programme, reflective practice has been an interest of the researcher to make attempts on interactive learning tasks depending upon the learners' strengths and needs. The research report draws Interactive e-learning among Post-Graduation students in Teacher Education at Pondicherry University specifically. It resulted in the development of an interactive e-learning platform for professional practice. It is based on the professional development course paper titled, "Advanced Methods of Teaching" in the second semester. The curriculum for the course includes learning outcomes around knowledge on theories of learning, understanding on strategies and tactics in teaching, the available teaching models and its uses, comprehension over evaluation and assessment on teaching and learning.

Objectives

- To find out students' knowledge and understanding on the course components at entry level.

- To facilitate the comprehension of the students on the course components in relation to the classroom teaching.

- To provide an e-platform for students to interact, reflect and enhance learning.

- To develop the skills and strategies of teachers which is used to make the classroom more effective with the help of technology.

- To develop generic skills such as critical thinking, analytic reasoning, problem solving and written communication.

Methodology

The implementation of this program is done in the second semester of the academic year, 2013. As they are familiar with the syllabus, the researcher wanted to find out the level of students' perception on the course components. An Awareness tool was developed and administered. It was evident from their responses that they have only peripheral understanding, lacking in depth for classroom implications. The needed analysis proves what NCFTE (2009) states as Institutes of teacher education have become breeding grounds of academic stagnation and resistance to change. The training of teachers happens in insular, intellectually impoverished environments that are severed from ground realities as well as the aims of education they espouse. Such an intellectual isolation actively discourages educational theorization and the growth of disciplinary and interdisciplinary enquiry.

After analyzing the requirements, the researcher went for the specification of design for the learning environment. E-learning platform was chosen, as it is a necessary skill for the teacher professionals. The design of the learning platform involved how learners learn in the technology to enhance the learning environment. Another technology based need analysis revealed their ignorance over technological tools. In the face of ongoing changes in higher education, including ever increasing class size, widening access and non-traditional students, teachers and tutors must shift their focus from teaching or providing instruction to facilitating collaborative enquiry as a means of empowering students with the teaching and learning context (Stefani and Nicol, 1997). From those lines, the researcher chose Blog as a right tool for interactive learning environment.

Interactive e-learning environment

The intention of the researcher was to develop a student-centered approach to reflective learning through interactions among peers, hoping that it would develop the ability to determine themselves whether or not they have a sufficient grasp of concepts, principles or skills which they bring to bear on new situations and problems. And also the ability to decide in which ways they are sufficed with necessary competencies, in which ways they may need to acquire new skills and knowledge for new situations.

A blog for the class was created where students were free to reflect upon the sources they have collected; understanding of the content they have listened on that day; the critical reflection on the peer presentation of that day; and the suggestion for their development. The design of the course learning structure was fully discussed with the students and suggestions for modifications were incorporated. Most of the students were positive in their attitude to the interactive e-learning. The students who were very new to the e-tools felt happy over the opportunity to acquire new skills. The concept of personal and professional development was therefore becoming less alien to university students and there was more of recognition that there is a strong link between learning and continuous professional development.

The course paper has five units having the theoretical base for effective teaching and for an efficient teacher. The focus of the teaching design was to make the students understand the principles behind the teaching and learning, and the necessary skills to operate teacher performance in real situations applying the relevant strategies and tactics. The teaching methods throughout the programme include lectures, discussions, group work, resource finding, sharing, giving presentations in class, and reflecting on others performance in their blog. The learning tasks were continuous and happened as scheduled. The reflections helped them to come out from inhibitions, developed the drive for learning, gained positive attitude on accepting critical reflections. The presentations in class were very serious. The classes were presumed to be real class situations demonstrating their teaching skills. In addition to learning and demonstrating teaching, the evaluation component was also attended. An assessment tool was developed by discussions with students. The teaching skills of the presenter were assessed. This task developed the nuances in assessment and evaluation and took the students towards becoming efficient teachers. Other than this performance-based assessment, students were tuned to develop questions on every unit components in their blog along with their learning. It helped them to have questions exhaustively. They were dealt in

class discussions promoting comprehension. Thus the interactive learning task was on e-platform, which in turn was discussed and demonstrated in classroom. A post test was conducted to find out the effect of interactive learning. The effect of the treatment is shown in Table 1.

Table 1 shows that, there is significant mean difference between the pre-test and post-test scores of the course paper, at 0.05 level. It shows the effectiveness of interactive learning. In addition to the empirical analysis on establishing the veracity of the experiment, students' experience on learning is reflected in their reflections report.

Findings

Throughout the course, what the learners reflected depends upon the understanding of content, its applicability in classroom teaching, on peer performance, and suggestion for improvement. In addition to the reflections, they got trained in developing questions, an important skill of a teacher. There was teamwork and the interactions both in class and on e-platform encouraged individual efforts; developed the tendency to help each other; advanced in library skills and computer skills. Research shows that, teaching practices clearly convey the learning goals, maximize time spent learning, focus on meaningful interactions with the learning content, and provide students with sufficient support which are powerful tools that enhance the student learning (Hattie, 2009). From the findings, the reflective statements from students are as follows,

- We realized ourselves in the democratic class. We got enough scope and opportunity to present our self.

- You made us to present many topics which helped us to get rid of fear and the best part of it is, you respected our thoughts and ideas that made us to inspire and do something more.

- You ignited discussions both in blog and in class that helped us understand the course paper well.

N= 26	Mean	SD	t - value
Pre-test	43.85	10.821	18.520*
Post-test	84.00	10.911	

* Significant at 0.05 level

Table 1. Effectiveness of Interactive Learning

- It is unbelievable that I developed ppt; I presented papers in class;

- I am comfortable in communicating in English.

It is proved that, the operated interactive e-learning environment achieved not only the learning outcome of the course paper, but also the generic skills named by Organization for Economic Cooperation and Developments (OECD, 2013) such as critical thinking, analytic reasoning, problem solving and written communication.

Conclusion

The consistent reflections and assessment in the learning process builds up an integrity and credibility among the teacher and the students. Students develop awareness and gain self-confidence and self-esteem. The teacher is able to understand the strengths and weaknesses of the students and help them to be empowered. Peer interactions develop team building and resources sharing. The NCFTE (2009) process based learning is reflected in their performance. Reflective practice stands as a testimony to the development of future citizens. Reflective practice will bring significant improvement among students in their thinking and writing and it is a powerful tool in building self sufficient individuals.

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