Abstract

In this study, aim was to provide pre-service mathematics student teachers with a new learning and teaching experience while they were playing two roles as learners and teachers within a arranging and publishing blog environment. The question of study was to investigate how a blog-mathematics course affected the ideas pre-service mathematics student teachers as a result of their experiences within that environment. The study showed that participants were:

• Willing to implement blog construction activities about geometry lessons for their students;
• Willing to develop new methodology and strategies for conceptual geometry lessons; and to gain new perspectives on developing a blog as a teacher;
• Able to discover the importance of good team communication and appreciate developing a product for their students.
• Willing to use social software (wikipedia, wiktionary etc.)

It was concluded that the mathematical thinking process may be improved as a result of preparing a blog page in mathematics teaching. Thus by considering the positive effects of blog page instruction, we suggest that the philosophical aspects and dynamics behind instructional technology should be clearly understood by teachers. Therefore educational faculties need to perform more research in this field.

Keywords: Instructional technology, geometry teaching, Blog prepare

1. Introduction

The purpose of training process theories of learning and teaching is to help improve students learning experiences. The use of technology in classrooms and other learning environments does not directly increase the level of learning. However, it may provide rich learning possibilities for students.

Pre-service teaching in teacher education is not only theoretical framework. There is also need to learn information relating to the provision of this information as applied to learning tools and techniques, and principles as needed to implement these tools and techniques technologically. The development and availability of social software applications sets new challenges and opportunities for the pre-service mathematics teacher. The term “social
software” refers to computer network software applications systematically used from 1999 in order to include applications such as forums, wikis, blogs, online multi-user games etc. Modern learning theories, especially the case for constructionist (Paper, 1993) and social constructivism theory (Ernest, 1998) that emphasize the importance of learners’ active participation to social activities during learning.

Shulman (1987) identified three categories of teachers’ knowledge: subject-matter knowledge, pedagogical content knowledge, and curricular knowledge. According to Shulman, subject-matter or content knowledge is the set of fundamental assumptions, definitions, concepts and procedures that constitute the ideas to learned. Pedagogical content knowledge (PCK) includes useful forms of representation of those ideas, powerful analogies, examples, and explanations concerning a subject; insights into what makes learning of specific topics easy or difficult, and the conceptions that students of different ages and backgrounds bring with them to the learning of topic. Curricular knowledge involves an understanding of how the topics are arranged over time. More recently, scholars have begun to assert the importance of connecting technology, pedagogy, content in teacher preparation and professional development (Koehler & Mishra, 2008; Mishra & Koehler, 2006; Zhao, 2003).

To assist educators in understanding the interplay of content, pedagogy, and technology Koehler & Mishra (2008) have developed a framework that extends Shulman’s notion of PCK with technology—Technological Pedagogical Content Knowledge (TPCK). Koehler & Mishra (2008) argue that the intersections in each of these three areas must be explored and delineated in the context of specific content areas (Koehler & Mishra, 2008; Mishra & Koehler, 2006; Zhao, 2003).

The relevant literature includes a rather small number of published studies concerning Mathematics education training using blog (Fessakis, Tatsis & Dimitracopoulou, 2008).

In this study was aimed to investigate the following questions?

1- What are pre-service mathematics student teachers' views on preparing a blog page?
2- How have pre-service mathematics student teachers' opinions changed at the end of the study?

2. Blog Software

A quick web search for “blogging software” reveals a wide spectrum of choices, from free hosted packages, requiring nothing more than an e-mail address and a blog name, to packages offering advanced features and also specific technical skills.

For our purposes we chose Blogger, a free, hosted blogging tool. This tool is about the simplest one around, and, though free, nonetheless has an impressive array of features.

3. Theoretical framework

Blogs Created by groups of five people (which can be examined);


The topics of Euclidean geometry angles, triangles, circles and the concept of curriculum and content knowledge at the level of junior high school and high school are discussed in the study. Figures were drawn with dynamic geometry software GeoGebra 4.0. Shapes, concept definition and concept image were formed (Tall & Vinner, 1981). In this course, of all blogs focussed on the basic concepts of geometry issues in middle and high school: angle, triangles and circles. To undergraduate education students, doing this may seemed like a complicated project, but an objective of undergraduate education is to develop the skills to communicate with different disciplines.
4. Educational features of blogs

In an educational technology wiki hosted at http://edutechwiki.unige.ch/, it is suggested that students can use blogs in order to:

- take notes from the classes, collect learning resources and share ideas and experiences, log notes and observations during an inquiry learning activity, manage a Project, publish news and information about the course, like course syllabus, calendar, handouts etc., develop dialogue like in an online forum, reflect and communicate with teachers and peers-students, improve their writing skills, develop collaboration and social skills, obtain the motivation of writing for readers who comment you in order to participate more actively in the course and run online school newspapers.

The whole project that was assigned to the students was divided in the following three phases:

**Phase 1.** Students studied some books, textbooks, articles about geometry instruction education for middle and high school classes, and the use of ICT for mathematics instruction. The duration was three weeks.

**Phase 2.** Students learned to use GeoGebra 4.0, Maple 9. The duration was four weeks.

**Phase 3.** Pre-service student teachers designed angles, triangles, similar triangles and circles learning activities issues using GeoGebra 4.0 and Maple 9. The goal of the group was to publish a common set of activities as their collaborative final product. The duration was two weeks.

Design activity was implemented during the spring semester of the academic year 2011-2012.

5. Findings

If we want to summarize the common views of the pre-service student teachers:

**Content Knowledge**

“*Definitions not what it seems to write books. How the benefits from the books, I realized that. a good dictionary is very important. English dictionary is also important”*

“*learned to use the library. Library previously did not mean much, except that a quiet environment, but now take advantage of resources is one of the biggest helpers”*.

**Pedagogical Content Knowledge**

“*tired from time to time, disappointed he did not, thanks to you owing we succeed. We spent our time full of. Teaching in the future is very useful to me in my life”*.

“*not only to know a lot of teaching, the real feat is to develop an understanding of a sample of students to look through the eyes, I saw rediscover mathematics”*.

**Technological Content Knowledge**

“*I found some terms in English in Wikipedia, Turkish-language version could not. I realized how important the meaning of terms in Mathematics”*.

**Technological Pedagogical Knowledge**

“*Students can comment on blog pages, the teacher can interact with”*.

“*English for the benefit of students in mathematics at all levels for a large number of sites, we make use of interactive, my English improved”*.

**Pedagogical Knowledge**

“*I learned many things about the use of computers and mathematics and curricula. I noticed inadequacies. First of all, I'll be the teacher and the students will need to love math I need to have a solid knowledge of mathematics. I got*
used to preparing for the university entrance examination test techniques for solving for this reason I need to tend academic books, That this assignment was”.

“I learned respect for labour”.

Technological Knowledge
“I think that the contribution of arranging blog pages. Both easy and preparing my page the other word, Power point, Math Type, Geo Gebra, maple learning how to use programs such as better”

“benefit hang out with my friends was also nice. Not a trouble using programs”,

“learned to use the link and bookmarks”.

“programs of this type when the file name long, I learned to use Turkish characters and no spaces”.

“I cannot say that I very much enjoyed the use of these programs. People who previously did not I get the computer. I could copy and paste the cut last year computer course. I would say our disposal ms-word and power point for”.

“learned to use the Internet for surfing the Wikipedia”.

“to win the technique of adding pictures. Change ms-word to pdf format.”.

“learned to use the frame and the text editing”.

“I learned how much work you want to prepare a blog. See the source code, and this code work on myself to write code similar to”.

“I took a photo on the internet how to effectively get the image that I can extract from paint or screen, and now I learned many things I had not thought. Above all, I brought a different perspective”.

“I realized that computer usage is not good. I developed.”.

Technological Pedagogical Content Knowledge
“Looking for something for me to look forward to our environment, this study provided a mathematical. Mathematics class of this work have earned this feature distinguishes us as”.

“gained; preparing blog page, benefit from and search of Wiki terms, to use effectively ms-word, to use free software GeoGebra4.0 when drawing the shapes and relevant, skills in critical look at technology used in blog pages”.

“like english web sites blog can be improved by doing the work in the form of a question-and-answer”.

“Setting up your own blog site had thought. I wish I had more time or more different things that could put”.

“I realized that computer usage is not good. I developed.”.

6. Conclusion and recommendation

Blogs can support the goals of learning and teaching environments while the specific objectives of mathematics lessons.

Törner (2000) refers to the notion of ‘objects of belief”. He has listed them under four main headings:

a. Mathematical facts as a whole, as a discipline of mathematics and mathematics
b. The relationship between a sub-field of mathematics and mathematics,
c. The relationship between the individual and the mathematics
d. Mathematics teaching itself (Quote Kayaaslan, 2006).

With regard to technology, there is a need to develop these beliefs. Teacher qualifications should be re-determined and redefined in the information age. Access to, and use, interpretation, reproduction of, information for teachers and the service is required. Pre-service student teachers need to know how to use technology and applications and learn to use the hardware and software.
References


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