FACILITATING STUDENT TEACHERS DURING PRACTICUM: A CASE STUDY USING A WEB 2.0 ONLINE COMMUNITY

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Abstract

An Information and Communication Technologies (ICT) based community was designed, operated, and evaluated, to support student teachers during their practical work (practicum) in the department of Education in the University of the Aegean.

A Web 2.0 social network was used as collaborative non-formal learning space among educators and students that worked on open and closed activities. The research framework was based on: (a) the exploration of reflection levels and perceptions of professional identity of student teachers during practicum, through their participation in an online community setting; and (b) on evaluating the impact of Web 2.0 spaces on teachers' practicum during an academic semester. In this paper, we discuss the research settings and the processes and present some preliminary results.

Introduction

Technology is undoubtedly a key point in pre-service teachers' training programs worldwide. Scholars and policy makers have advocated and argued upon the potential benefits of using and embedding technology within the practice of teaching and learning (Russell, Bebell, O'Dwyer, & O'Conner, 2003; Tsoulis, Tsolakidis, & Vratsalis, 2012).

Thinking about the impact of ICT in teacher's education institutions during the last three decades, research reveals three successive phases in integrating technology into teacher education (Flick & Bell, 2000; Gomez, Sherin, Griesdom, & Fin, 2008):

1. **Technology Acquisition**: During this phase, the main goal of the institutions was to purchase technology, hoping that through its presence learners will work differently.

2. **Process/product Relationships**: This was a more aggressive form of integration based on the approach of the instrumental control of technology by student teachers (… thinking about the power of ICT in terms of the products they produce).

3. **Shaping Social Relationships & Arrangements**: New pervasive ICT enable new social arrangements (intra-institutional, inter-institutional and trans-institutional) supporting one of the main missions of pre-service institutions, i.e., to create a social fabric for teacher education and later professional practice based on relationships.

During this latest on-going phase, there are four main implications for teacher education (Gomez et al., 2008):

- Create *technically literate* education professionals.

- Enhance the *theory-practice* connection.

- Provide more *practice-based* curriculum.

- Reflect into the *scholarship and practice* of teaching.

Based on this ascertainment and the educational affordance of Web 2.0, our research framework mainly focuses on the impact of social networking spaces on the teacher's practicum. In this paper, we discuss the research process and setting and present some preliminary results.

Educational Affordance of Web 2.0

In general, the term **Web 2.0** refers to a more personalized, communicative form of the World Wide Web ("*Read-Write Web*") shifting focus on active participation, connectivity, collaboration and sharing of knowledge and ideas among users (Richardson, 2006). Moreover, the term **social software** may be broadly defined (Boyd, 2007; McLoughlin & Lee, 2007) as software that:

- Supports group interaction, feedback, conversation and networking, and

- Is endowed with the flexibility and modularity that enables *collaborative remixability,* information and media organized and shared by peers that can be re-organized/combined in order to produce new concepts, ideas, forms, mash ups and services.

Following Kirschner (2002) who defines the concept of educational affordance and Anderson (2004) who frames the educational affordance of Web 1.0 based on the profound and multifaceted increase in communication and interaction capabilities of the Net, McLoughlin & Lee (2007) report the following as paradigms of **educational affordance**s of social software and Web 2.0 applications:

- Connectivity and social rapport.

- Collaborative information discovery and sharing.

- Content creation.

- Knowledge and information aggregation and content modification.

This approach entails what McLoughlin & Lee (2007) refer to as ***Pedagogy 2.0*** where the interdependence between ideas, peer individuals, communities and information networks, supported by ICT, stimulate the development of a participatory culture with underpinning principles such as:

- Urge for inquiry-based approach and collaboration.

- Learning as a socio-cultural system.

- Active participation between peers, instructors, experts.

- Development of dynamic communities of learning and practice.

ICT-Based Communities for Pre-service Teachers

Pre-service teachers, while participating in their preparation program, usually receive support from their university supervisors, school-based cooperating teachers and their fellow classmates. However, peer interaction and collegial support fades out as soon as school placement begins during practicum (Huberman, 1995; Moir & Gless, 2001), because student teachers: (a) find themselves alone in the classroom with only minimal support, (b) are overwhelmed with new responsibilities, and (c) have little time to collaborate with colleagues.

Teacher preparation programs have responded to these concerns and challenges by employing a variety of reflective, collaborative practices in order to facilitate support during student's practicum placement in schools. One approach towards this direction was the establishment of pre-professional communities of learning, which has long been recognized as a need, contrasting to the school's climate, that could include isolation and competition (Johnson, 1992; Hargreaves, 2000; Beijaard, Korthagen, & Verloop, 2007). Moreover, the use of ICT-based communities (Nicholson & Nathan, 2003; Duncan-Howell, 2010; Lieberman & Mace, 2010; Kostas & Sofos, 2012; Kostas, Kaseris, Sofos, Tsolakidis, & Bratsalis, 2013) can play an integral role in the development of pre-service teachers in terms of:

- Time, space and geographical issues.

- Emotional and intellectual support.

- Fostering a sense of community.

Establishment and operation of ICT-based communities has long been facilitated by a range of technological infrastructures, from simple email and bulletin systems to Learning Management Systems (LMS) and Web 2.0 services, taking into account the educational affordances of Web 1.0 and Web 2.0 tools and services.

Among other researchers who studied the impact of participation of student teachers in virtual communities during practicum, Deng and Yeun (2011) studied

the use of blogs as a mean for sharing ideas, self-expression, substantiation of experiences and professional reflection, Davie and Berlach (2010) proposed Wiki as a tool for communication/collaboration και monitoring of students' progress, Rideout, Briunsma, Hull, & Modayil (2007) studied the use of Learning Management Systems (LMS) during practicum, Wright (2010) tried to overcome teacher's isolation effect via micro-blogging (Twitter), English and Duncan-Howell (2011) proposed Facebook as a means to support teachers during school placement and Reich, Levinson, & Hohnston. (2011) used a Ning-based social network setting in order to foster pre-service teachers participation in a networked community of praxis.

These research initiatives have revealed the positive impact of ICT-based communities as well as various problems and obstacles during their application in real educational settings, such as lack of participation and interest, low level of interaction, users' exhaustion, etc. Moreover, those initiatives revealed an emerging research field with demanding open issues and questions.

Research Setting

Following the evidence of educational affordance of Web 2.0 tools, a social network was set up as an *electronic Community of Teachers Practicum* **(eCTP),** in order to provide a non-formal learning and collaborative space among educators and students (See Figure 1 below).
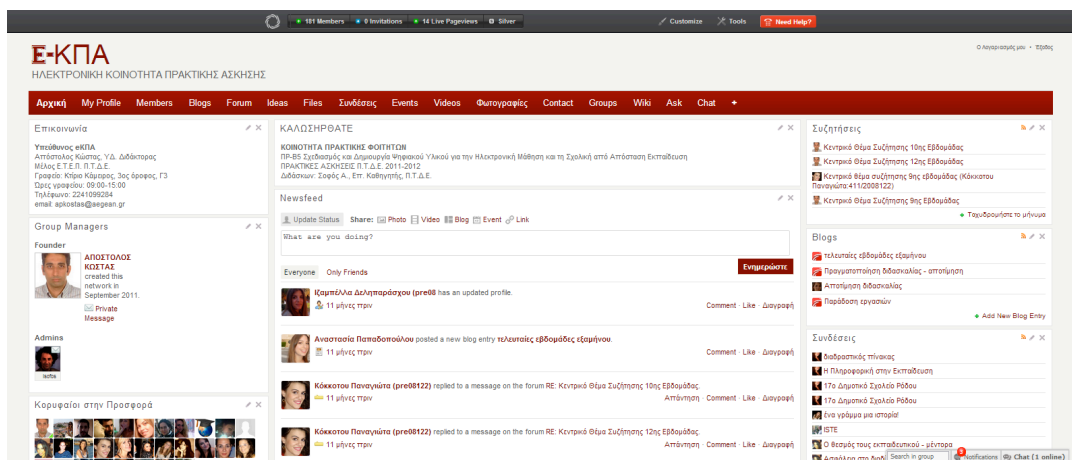

Figure 1. Community of Teachers Practicum: the wall.

eCTP was used as a collaborative platform in order to support and facilitate teaching practice by establishing a network of communicating peers among students and foster *reflection on action* (Schön, 1987), sharing individual or collegial experiences, problems, personal stories from the classroom, peer assessment of didactic plans, perceptions about the profession, etc.

Moreover, eCTP was designed to operate as an Internet-mediated Community of Practice (IMCoP) with a life-cycle model based on that of Cambridge & Suter

(2005) as show in Figure 2, taking into account the critical elements of IMCoP's design (Kostas & Sofos, 2012).
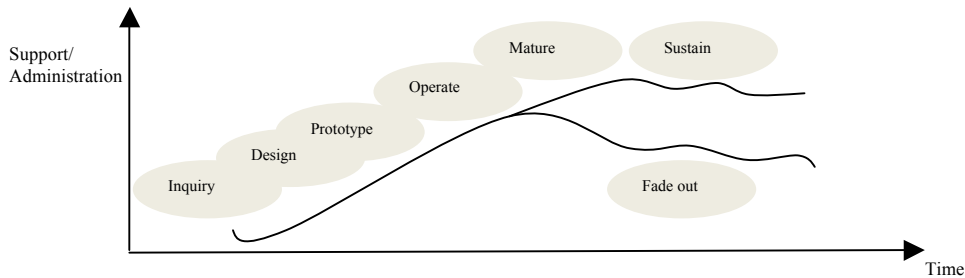

Figure 2: eCTP Life-cycle (adopted from Cambridge & Suter, 2005).

Research design, based on the literature review has adopted three essential principles during the setup of eCTP, in order to achieve a sustainable educational setting:

- Members of the ICT-based community must have access to a set of tools within a *common technological platform*, in contrast to communities mediated by a single technology (forum-oriented, blog-oriented, etc.).

- Community must be organized as an *inter-institutional* educational network.

- Participation in the community must be part of a *holistic* approach for student teachers' practicum.

The above design principles have guided the selection of Grou.ps (http://grou.ps) open platform as the underlying technological infrastructure of eCTP providing a working framework of privacy and trust among students.

This framework reinforced by a set of communication and collaboration tools, allowed student teachers to actively participate in a set of "open" and "closed" activities based on the research design process, which were guided by 3 main research axes:

1. Inquiry of reflective dialogue of student teachers while participating to eCTP.

2. Inquiry of student teachers perceptions of professional identity during school placement.

3. Evaluation of eCTP as a mean to facilitate and foster practicum.

Based on the literature review and the above research axes, an exploratory single-case research study (Yin, 2003) was set up during practicum in the Primary Education Dept., University of Aegean.

The case was defined as the "*support and facilitation via an IMCoP of the practicum*" during the academic semester 2011-12, and a cohort of 165 student teachers actively participated in the community, producing a large number of artifacts as shown in Table 1. Data collection procedure followed a mixed method approach in order to achieve complementarity among quantitative and qualitative methods for better reliability and substantiation (Creswell, 2008).

Table 1

eCTP Identity and Artifacts

Time Span	Sep 2011 – Mar 2012
Student teachers	165 (M=28, W=137)
Moderators	2
Facilitators	5
Forum posts	1295
Blog posts	719
Group Msg.	716
Private Msg.	48
File Sharing: Docs, images, Video	1244

Preliminary Outcomes & Discussion

Due to the large number of research data, in this paper we present qualitative results from a single open-ended question, which inquires about the positive and negative impacts of eCTP among student teachers during practicum. More specifically, an evaluation questionnaire was distributed to the members of the community with a total of 77 responses out of 165 peers (47%). The answers' of Question No 3: "What are the most important positive and negative aspects of being a member of eCTP during your practicum the last 6 months?" were analyzed, as shown in Table 2, using the *CAQDAS Atlas.ti 6.2* software for qualitative research.

Coding of data followed the Structural Coding method which: a) applies a content-based or conceptual phrase, representing a topic of inquiry to a segment of data, b) encodes and initially categorizes the data corpus and c) is appropriate for qualitative studies with multiple participants (Saldana, 2012). Moreover, by

determining frequencies on the basis of the number of individuals who mention a particular theme, Structural Coding can identify quantitative levels of the data corpus as well (*content analysis*).

Table 2

Membership in eCTP: Positive and Negative Aspects

Themes	Categories	Frequencies	Totals
Topic of Inquiry: *Positive Aspects*			
Personal Development	- ICT familiarization - New knowledge - Professional growth - Personal growth - New perceptions about school/practicum	7 4 3 2 1	17
Interaction	- Peers collaboration - Exchange of opinions and information - Sharing of experiences, ideas, material - Personal expression - Teacher-student & student-student dialogue	19 17 8 4 4	52
Updates	- General - Curriculum obligations - Information - Practicum settings - News	20 11 10 5 4	50
Communication	- Student to student - Student to teacher	15 5	20
Socialization	- Community sharing - Common values/goals	8 5	13
Lesson Planning	- Better organization - Interesting activities - Interesting practicum setting - Focus on participation	5 4 3 3	15
Platform	- Accessibility & usability - Content organization	7 3	10
Personal Work	- Critical thinking - Better organization	7 4	11
Support	- Peer support - Teaching support - Q & A	8 8 8	24
Topic of Inquiry: *Negative Aspects*			
Procedures	- Demanding obligations between lesson and practicum	18	18
Individual's Work Planning	- Time consuming activities - Work overload - Stress – emotional overload - Tiredness - Peers contention - Information overload	17 9 9 4 3 1	43

Moreover, as part of the evaluation questionnaire, student teachers were asked to compare the common practicum settings and the ICT-based settings (facilitated via the eCTP). Results are shown in Table 3.

Table 3

Facilitated vs. Common Practicum

Comparative Dimensions	Number of responders	Percentage (%)
Interesting	43	52
Demanding	44	47
Useful	42	51
Different	35	42
Efficient	32	39
Time consuming	18	22

Note: this was a multi-choice question, so summing up is over 100%

Preliminary results based on the two previously described questions of the evaluation questionnaire, reveals that student teachers acquired an overall positive impression about their participation in eCTP. According to Sutherland, Howard, and Markauskaite (2009), participation of student teachers in communities of practice and learning, provide opportunities of engagement in a professional dialogue, which foster the formation of teachers' professional identity. From the positive feedback, it seems that students, as peer members of an ICT-based community, valued the opportunity to enter in a constant online dialog with their colleagues and be engaged in co-learning activities within an online community.

This social space turned to be an important seeding activity with various updates during the whole semester, thus limiting the isolation feeling of student teachers during their placement in schools. Students were eagerly seeking advice, support and feedback from peers, professors and moderators. Moreover, eCTP provided a place where peers could share ideas, and offer emotional and cognitive support, thus enhancing collegiality and collaboration.

However, it became clear that facilitating practicum with ICT-based community mediated by a Web 2.0 environment and guided by "open" and "closed" activities throughout the whole semester, lead to an overall amplification of students workload and emotional overload. This could be explained due to the fact that practicum settings followed a holistic model for an inquiry reflective approach, aiming at blending and combining dimensions such as didactic transformation, reflection, coaching, mentoring, coupling and ICT.

In general, researchers are convinced that eCTP, according to preliminary positive feedback from peers, proved to be a valuable supporting social space, demonstrating the educational affordance of Web 2.0 as applied in student teachers practicum. Moreover, much could be learned by analyzing and coding

the huge amount of artifacts that were produced and shared among members, towards an inquiry of reflection levels and professional identity formation observed within members of eCTP.

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