

## Community of Inquiry Development in a Blended Learning Course for In-service Teachers

Dimitra Theodosiadou<sup>1\*</sup> Angelos Konstantinidis<sup>2</sup> Christos Pappos<sup>3</sup> Nikos Papadopoulos<sup>3</sup>  
Eirini Marna<sup>4</sup>

1. 13<sup>th</sup> Primary School, Drama, Greece

2. School of Cultures, Languages and Area Studies, University of Nottingham

3. Directorate of Secondary Education, Drama, Greece

4. Alistrati Kindergarten School, Serres, Greece

### Abstract

The paper presents the course design and evaluation methods of an online community of inquiry that is developed in a blended learning training course for in-service teachers working in public K-6 schools in Greece. The course content is about digital storytelling, its educational value, and the use of supportive web 2.0 tools for developing digital stories. It lasts four weeks and is carried out mostly online with two face-to-face meetings, one at the beginning and one at the end of the course. The instructional design and evaluation of the course is based on the community of inquiry model of Garrison, Anderson & Archer (2000). Based on the preliminary findings, since the course is still in progress, the course design is found to be sound and in line with the relevant literature.

**Keywords:** community of inquiry model, digital storytelling, professional development, teacher training, online learning

### 1. Introduction

Advancing of information and communication technologies has brought major changes in the ways that knowledge is communicated in all levels of school education and adult training (Frazier & Boehm, 2012). During the last couple of decades, the need of educational reform is situated in the center of national and international discussions among educational policy makers and scholars. Factors that influence this need for reform are multilateral but ending up to the foundations of the educational system, the teachers (Alton-Lee, 2003; Borko, 2004). At the same time, school environments and the demands placed upon teachers are increasingly complex. Students may arrive in classroom from an increasingly wide range of cultural, national, language, and educational backgrounds and may have a very broad range of abilities while teachers are expected to equip them with a wide range of skills that will help them take their place in a constantly evolving world.

In this context, even initial teacher education of the highest quality is not sufficient since there is an imminent and growing need for continuing in-service training and ongoing opportunities for professional development to keep teachers up-to-date with the knowledge and skills required in a fast-changing, interconnected world. This need is far from being met, nonetheless. According to a recent international survey administered by OECD (2009), over half of the teachers reported that they wanted more professional development than they actually received in the previous 18 months. This does not necessarily imply that provision of professional development activities is in short supply rather that certain barriers prevent teachers from undertaking professional development, such as conflict with work schedule, no suitable professional development, family responsibilities, and cost (OECD, 2009). It is these barriers, thus, that should be dealt with in order to increase teachers' access to professional development activities and subsequently teachers' continuing professional development. Apart from the barrier related to whether the professional development opportunity is considered suitable by the teachers, the rest of these barriers are inherent to a significant extent to traditional forms of education, whereas online forms of education provide more flexibility in class scheduling, require less or no travel to and from class, and, generally, are more cost efficient. An effective way to overcome most of the aforementioned barriers can be, therefore, the development of online professional development opportunities.

Online training courses are increasingly being adopted in the field of teacher training and education, few studies, nonetheless, have investigated trainees' satisfaction over the design and methodology of the delivered courses (Smart & Cappel, 2006). The presented research aims to bridge this gap by examining how the Garrison, Anderson & Archer's (2000) model of Community of Inquiry (CoI) can be used for the design and evaluation of a short-term blended learning training course on digital storytelling for in-service K-6 school teachers. The CoI model has been selected as the framework for this study for it is a process model that defines the core elements and the dynamics of an online educational experience.

The rest of the paper is organized as follows. First, the core elements of the CoI model are presented and briefly discussed. Next, the course is described and the profile of the participants is reported. We continue by presenting and discussing our methodology in designing a blended learning training course for teachers that adheres to the CoI model as well as the methods for evaluating participants' acquired knowledge and skills and

the overall effectiveness of the course with reference to the CoI model. Lastly, the preliminary results from the course are briefly reported.

## 2. The Community of Inquiry model (CoI)

The CoI model has been developed by Garrison et al. (2000) and refers to a learning community as a context in which members are involved in collaborative, interrelated discussions and reflection over learning that will lead them to the construction of personal meaning and confirmation of mutual understanding. The key participants in the educational process of a community of inquiry are the teachers and the students.

In order for a higher educational experience to be achieved within a CoI, there are three fundamental elements deemed as crucial prerequisites: cognitive, social, and teaching presence.

The element that is considered the most important for successful learning, especially in higher education, is the element of cognitive presence. By this is meant the ability of participants in a CoI to construct meaningful learning via existing communication and reflection (Garrison & Arbaugh, 2007). Cognitive presence is grounded in the critical thinking literature and it is seen as developing through the practical inquiry process, a series of four cyclical phases. These phases are: (a) a triggering event, where some issue or problem is identified for further inquiry; (b) exploration, where students explore the issue both individually and collaboratively through reflection, question, information exchange, and brainstorm; (c) integration, where students construct meaning from the ideas developed during exploration; and (d) resolution, where students apply and test the newly gained knowledge to educational contexts or workplace settings.

By social presence is defined the ability of participants to project themselves, their personal characteristics within the community and to other community members in the sense of a “real person” (Garrison et al., 2000). The social presence facilitates the community members in their critical thinking process thus supporting the cognitive presence in the CoI. The simultaneous existence of cognitive and affective objectives in the learning process, as the participants enjoy their presence and contribution in the community and experience fulfillment by their peer interaction within the group, raises the value of social presence for a successful learning experience.

According to Garrison & Arbaugh (2007), although social and cognitive components are apparent and vividly interacting within a CoI, they are not adequate in providing and supporting online learning. Teaching presence is a prerequisite as it designates the parameters of the learning subject and focuses on the design and facilitation of interactions that guide the participants towards meaningful educational outcomes. Teaching presence consists of the design, direct instruction, and facilitation of the educational experience. These components can be carried out by any member in the CoI, yet they are mostly the tutor’s function and responsibility. The instructional design includes the selection, planning and introductory presentation of content, along with course design and development of learning activities and assessment whereas direct instruction includes general guidance and presentation of learning material reassuring that this was understood by the participants. Facilitation in an educational experience is a feature that is shared between the teacher and learners and usually is found in computer mediated communication. Overall, the role of teaching presence is to support the other two elements of social and cognitive presence with final goal to reach the desired educational outcomes.

## 3. Methodology

In this section the course is briefly described and the demographics of the participants in the course are reported. The rest of the section discusses how the course design strengthens the presence of the three core elements of the CoI and presents the evaluation methods.

### 3.1 Course outline

The course, titled ‘Digital storytelling: a multipurpose tool for learning’ and addressing to K-6 school teachers was designed to last for four weeks during November-December 2016. Two face-to-face meetings were included, one at the beginning and one at the end of the course, while the main training was delivered fully online through a Moodle virtual learning environment. There were four separate learning units, one for each week, where digital storytelling was approached from a different perspective.

The focus for the first week was on how to convey information or the desired message through the interplay of text and image. The digital comic strip creation procedure can scaffold visualized expression skills and organization of thought while assist users in improving their comprehensive and concise wording. Storyboard that was selected for this purpose as it is an easy-to-use web 2.0 tool with a large selection of images, scenes and characters that make the creation of comic strips a catching and enjoyable task for students.

On the second week oral narration was approached in combination with the creation or selection procedure for the suitable images that will boost a story. This process nurtures critical thinking and spontaneous oral presentation, especially in young students. The Utellstory software was selected as it allows telling and sharing stories that combine photos, videos, voice, music and words at the same time.

Sparking imagination through artwork was the content of the third week. Elaborated writing can be cultivated, supported and inspired by the vast selection of artistic drawing from the rich tank of Storybird. The creation of digital long-form or multi-chapter books in many languages or even small but impressive stories can be the outcome of introducing this tool into classroom.

During the fourth week the emphasis was on collaborative narratives and their importance in the educational process with examples of collaborative research on topics such as biographies, historical events, natural phenomena and so forth. Padlet was deemed as a good choice since it is user-friendly and a flexible web 2.0 tool that facilitates collaboration among teachers and students or peers without the necessity of students having an account.

### 3.2 Participants

Twenty three in-service K-6 school teachers, male (N=6) and female (N=17), working in different cities of northern Greece, were randomly selected to participate in the course after the formal applying procedure. Most of the participants were 31-50 years of age with 11-30 years of prior teaching experience, having satisfactory knowledge of English language (B2 level or higher) and relatively good or very good ICT skills.

### 3.3 Course design

Our primary goal in designing the course has been to strengthen the three core presences. What follows is a presentation of the strategies that we employed to achieve this goal.

Cultivating *cognitive presence* was based on three strategic components: (a) authentic activities that promote learning, self-regulation, and collaboration, (b) discourse over course content, and (c) reflection.

Tasks and activities play a major role in how students approach learning. Activities that require students simply to memorize facts or to select from predefined responses favour surface approaches to learning. Contrarily, activities that ask students to construct their own responses and replicate real-world challenges engage them in deep learning. All the activities were designed in a way that participants could adapt and integrate them into their own teaching context. Except one general guideline for each activity, that a sort of story should be created with the use of the introduced Web 2.0 tool, participants were free to select the topic as well as other specifics of the activity, such as the type of storytelling, the length or duration of the story, and so on, and to plan how they would perform the activity. The activity description encouraged participants to reflect on the process of creation, write their thoughts on the course forums, and discuss their experience with their peers. Moreover, an optional pair activity was set out in the third week and a small group activity in the last week of the course which sparked additional interest in the group and engaged participants in peer learning. Tutors' role was crucial in facilitating and encouraging participants' reflection process with constructive comments and exploratory questions on forum discussions.

Acknowledging that participation in a blended learning training course where students and teachers rarely meet face to face, can potentially be a quite lonely, isolating, and somehow bewildering experience we tried to enhance feelings of *social presence*. There are four main methods that we employed to fulfill this goal. First, from the very beginning of the course, we eschewed formalities both in language and in the design of the virtual learning environment as much as possible. Hence, for instance, we used emoticons to transfer feelings and we employed images to make course content more appealing. Second, an atmosphere of equal relations among all group members was cultivated in the course; there was no distinction between the roles of tutors and students - both were usually referred to as 'participants' in the course - and tutors most often used the inclusive 'we' for addressing the group. Third, participants were encouraged to offer assistance and feedback to their peers. This cultivated a supportive climate and strengthened participants' bonds with the group. Fourth, self-disclosure was encouraged throughout the course as a way of promoting intimacy within the group. In the first face-to-face meeting participants received guidance from the tutors on how to build their personal profile on Moodle and upload a personal photo. This disclosing of information helped participants to learn something about each other and feel more connected. Additionally, participants shared information about their own teaching context when they uploaded on the course forum their digital story along with their reflection on how they would employ it in their class.

While designing the course major attention has been placed on establishing strong *teaching presence*. A variety of methods have been used to achieve this:

- (a) The course material was carefully selected and the course was fully designed by the tutors.
- (b) During the first face-to-face meeting a lecture about the theoretical framework of the course and the principles of distance learning took place and answers were given to participants' questions regarding the course content and context, thus giving the opportunity to participants to receive answers on their queries and to the tutors to make sure that the course content/structure had been fully understood.
- (c) On the online phase all technical questions were planned to be answered as soon as possible (within less than 6 hours) either by tutors or by peers.

- (d) One of the tutors was announcing the weekly subject, the reading material, and related activities at the beginning of each unit.
- (e) The same tutor was summarizing the discussions and assignments completed during the week on the forum at the end of each week.
- (f) Two of the tutors undertook the responsibility to provide timely constructive feedback on participants' assignments and encourage their contribution in meaningful discussions aiming knowledge construction.
- (g) The participants were constantly encouraged in providing constructive comments to peers.

### 3.4 Assessment methods on acquired knowledge and skills on digital storytelling

Assessment of knowledge and skills acquired by the participants through the course was designed to be measured with the combination of three methods: (a) quantitative analysis of participants' responses to a self-assessment questionnaire before and after the course, (b) qualitative analysis of peer discussions in the course forums, and (c) qualitative analysis of participants' weekly submitted assignments.

During the process of constructing the questionnaire, two of the researchers created a series of self-assessment question items related to knowledge and skills in digital storytelling which were then examined by two other researchers for their face validity. Based on peer comments, the questionnaire (see Table 1) was improved and finalized to twelve Likert question items (very well/well/a little/little/not at all/no answer) with reference to digital storytelling, its basic traits, and methods of its pedagogical use, eight Likert question items related to the web 2.0 tools taught in the course, and one open-ended question.

Table 1. Diagnostic questionnaire of digital storytelling knowledge and skills and of attitudes towards digital storytelling

1. I know what digital storytelling is
2. I know the elements which make a narrative more interesting
3. I believe that I can use these elements appropriately to create a digital storytelling
4. I know which are the types of storytelling
5. I believe I can use the appropriate type of storytelling to achieve my teaching goals
6. I know the strategies for the development of a narrative
7. I believe that I can apply some basic designing strategies to create a digital storytelling
8. I believe that I use the digital storytelling theory in pedagogically sound ways
9. I believe that digital storytelling is a useful tool for a teacher
10. I believe that the use of digital storytelling can improve my teaching practice
11. I believe that the use of digital storytelling can enhance students' interest in the subject
12. I believe that the use of digital storytelling can support students' understanding of the subject
13-16. I believe that I can use Storyboardthat/Utellstory/Storybird/ Padlet to create a digital storytelling
17-20. I believe that Storyboardthat/Utellstory/Storybird/Padlet is a useful tool for developing a digital storytelling

Analysis of discussions in the forums will be based on the six methodological constructs for the evaluation of the cognitive presence proposed by Kanuka & Garrison (2004): discourse, collaboration, management, reflection, monitoring and knowledge construction.

Finally, with regards to the evaluation of the assignments, an evaluation rubric was created grounded in the basic principles of digital storytelling and development of critical thinking.

### 3.5 Course evaluation methods in relation to the Col development

The course evaluation in relation to the development of the Col was designed to be measured with the following methods: (a) quantitative analysis of participants' responses to Arbaugh's et al. (2008) questionnaire translated into Greek (b) qualitative analysis of peer discussions in the course forums, and (c) qualitative analysis of participants' weekly submitted assignments.

The questionnaire of Arbaugh et al. (2008) has been tested for its validity and reliability to the measurement of CoI, but as far as we know, it has never been translated into the Greek language. Thus, two of the researchers translated the questionnaire and other two checked the face validity of the translated items.

Analysis of forum discussions will be based on the categories and indicators developed by Garrison et al. (2000).

## 4. Results

While writing the article the course was still in progress rendering data analysis and presentation of final results impossible to achieve. However, the main goal of this article is not to present the research results rather to present the methodology that was followed on planning, organizing and evaluating the course, thus offering a useful resource for researchers and educators on the field. Yet, a first evaluation of the obtained results is carried out, without being able thus far to process all anticipated data.

The cognitive presence is evident in participants' assignments and comments on the forums. Elements of storytelling have been effectively used by participants to make their stories more interesting. Participants made suggestions in forums as regards how to use these stories in real classroom settings and got feedback from their peers. It is quite interesting for the study that most of the participants actually used their digital stories with their students and reflected over their experience.

Participants' interactions in the forums reveal quite high levels of social presence. Weekly forum discussions are rich in numbers of replies to posts, which means that participants had the interest to read what other participants wrote or did and felt emotionally close enough so as to leave feedback. Furthermore, throughout the course frequent logging-in and active participation in discussions has been observed.

Lastly, the teaching presence is established through the overall instructional design of the course, which includes the careful selection and provision of related reading material, the critical choice of Web 2.0 tools suitable for creating digital stories, and the meticulous design of course activities and assignments as well as their assessment. In addition, facilitation of the learning experience occurs through the active interaction among participants and tutors and among peers.

## 5. Conclusion

In this article the pedagogical design and the evaluation methods of the online community of inquiry which is developed in a blended learning training course on digital storytelling addressed to primary teachers is discussed. The pedagogical design and the implementation progress of the course appear to be consistent with the underlying theories. No divergent or negative reactions and comments have been observed on behalf of the participants whereas the course seems to be progressing to a great extent as originally planned. Observable data thus far indicate participants' positive attitudes towards the implementation method and quality of the course content and of the acquired knowledge which are all considered to be satisfactory.

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