

BLOGS IN DISTANCE EDUCATION: An Analysis of Physical Educators' Perceptions of Learning

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ABSTRACT

The flexibility of open and on line learning in meeting different kinds of needs in a variety of ways and the need for planners to make appropriate choices, taking a number of factors into account indicates the need to find out more about the evaluation of teacher training through on line distance education. In recent years web 2.0 technologies such as blogs enable sharing and collaboration between geographically remote users and offer the opportunity for new forms of student-centered pedagogic practices. The purpose of this study was to examine the physical educators' perception of learning toward three blog courses, carrying on during an eight week period, in order to enhance their professional development and their skills in effective teaching. In each blog a different cooperative teaching method was applied (STAND, COOP and ICL). Participants were fifty four (n=54) physical educators who teach in elementary and secondary schools of different Greek regions, with an experience of 1.67 to 21.75 years.

Data was collected using an online questionnaire after the education programme was completed. Overall, participants' responses in the perceived learning questions supported the benefits of use asynchronous web 2 tools in distance education programmes. Their perception of learning using blogs appears to be positively increased regarding the regulation of the applied cooperative procedure.

Keywords: Distance education, blog, learning, physical education.

INTRODUCTION

Teachers to be able to respond to their responsibilities over time cannot be sufficient equipped by the undergraduate curriculum. It is required constant informing on developments in both their subject matter and the science of education, updating their knowledge (Creed & Perraton, 2001). In Greece, educational training programs carried out mainly in the capitals of prefectures and as a result, teachers of all specialties confront the difficulty of access to them (Emmanouilidou, Antoniou & Derri, 2010; Papadouris, 2001). Moreover, the shortage of resources for conventional approaches to continuing education, and the capacity of distance approaches to reach scattered or large audiences, has led to its extensive use for teachers' continuing education (Creed & Perraton, 2001). Although continuing professional development is characterized by a diversification of provision, in terms of programmes' types, duration, management,

technology to deliver the educational material, feedback issues, it is an area in which distance education can play a significant role.

The flexibility of open and distance on line learning in meeting different kinds of needs in a variety of ways and the need for planners to make appropriate choices, taking a number of factors into account (for example, appropriate and affordable media, needs of audience, purposes of provision, instructors role etc), also indicates the need to find out more about the evaluation of teacher training through on line distance education (UNESCO, 2001).

In recent years web 2.0 technologies such as blogs have harnessed the social networking and community-building potential of the distance online learning environment (O'Reilly, 2005). These innovations enable sharing and collaboration between geographically remote users and offer the opportunity for new forms of student-centered pedagogic practices (Instone, 2005). Additionally, traditional teacher-centered versus student-centered education often criticized for depriving the student of opportunities for self reflection, diminished engagement, stifling interest, growth and encouraging dysfunctional practices such as plagiarism (Forster & Tam, 2004). Considering that our models of teaching reflect in great part the technologies that have enable contemporary education, new web 2.0 technologies, such as blogs, might enable new forms of effective teaching and student-centered learning (Downes, 2004).

There is a high percentage of Greek teachers wishing to train or participate in postgraduate programs (Dimou, 2003), as well as reportedly to the official statistical data, a rapid developing of using blogs in education is occurring (<http://blogs.sch.gr>). Vivitsou and Gerouki (2008) pointed out that blogs can be used as effective educational tools, if sated in a proper pedagogical pattern. In another Greek study, teachers' posts into 20 blogs were analyzed and blogging was reported as a powerful reflective teaching tool (Antoniou & Maheridou, 2009).

In the field of physical educators' training, Antoniou and Siskos (2007) explored perceptions for the learning environment of a training program in which synchronous and asynchronous technologies were used and the results showed that it met the expectations of the 24 participants for active participation and collaborative learning. Additionally, the results of a more recent study showed that physical educators believe that synchronous online training reinforces the interaction and cooperation, without creating feelings of isolation due to lack of physical presence (Emmanouilidou, Antoniou & Derri, 2010). Despite their growing popularity and the positive clues (Antoniou & Maheridou, 2009; Downes, 2004; Vivitsou & Gerouki, 2008; Williams & Jacobs, 2004) at our knowledge there is no study evaluating blogs, as asynchronous web 2 tools, in teachers or physical educators' distance education.

Maheridou, Antoniou, Kourtessis & Avgerinos (2010) pointed out the weakness to determinate the criterions -and so the blog's constructional principals- as efficient web 2 teaching tools. So there is need of systematic experimental studies aiming to clarify which are the most efficient pedagogical strategies, when using blogs as an asynchronous online learning environment.

The question that arises is: Which pedagogical pattern is the most benefit for learning when blogs are used to support student-centered learning in teachers and especially physical educators' distance educational programmes?

Thus, the purpose of this study was to ascertain how physical educators' perceived learning after participating in a blog course training programme, in order to enhance their professional development and their skills in effective teaching.

The extent of any differences is likely to be related to the influence of the three different cooperative instructional methods which was applied in each blog course.

TEACHERS' DISTANCE EDUCATION

For the continuing professional development of teachers distance education's most significant advantage may be its reach and ability to provide teachers with learning resources. Where teachers are strengthening their own general education, or taking a higher degree, the effects are likely to be long-term, or may be felt when they move on to a new job, rather than be immediately applicable. By the nature of their work, teachers are often isolated. In-service programmes based on communications media are sometimes the only way of reaching them without bringing them away from home, and probably work, and diverting funding from education to transport and accommodation. Provided media are chosen that are appropriate to the scale of the problem, distance-teaching approaches have the capacity to operate at lower unit costs than those of more conventional methods. Beyond these practical benefits, a programme that reaches teachers in their working place should make it possible for the learners to integrate what they learn with their day-to-day practice in school (Robinson & Latchem, 2003).

According to Hara, Bonk and Angeli (1998) the asynchronous or delayed capabilities of e-learning tools, allows learners some control, while increasing "wait-time" and general opportunities for reflective learning, and processing of information. In addition, the combined interactivity and asynchronous nature of computer-mediated communication encourages learners to reflect on their own perspectives, express their ideas, and learn from the content of the interaction itself. Such technology provides a permanent record of one's thoughts for later student reflection and debate. When learners' comments are logged, they can be reused later as an instructional tool to model expected answers and discourse patterns, as well as provide a lasting class or group legacy.

The latest generation of collaborative web-based tools, such as blogs, offers many unique and powerful information sharing and collaboration features. If effectively deployed, could offer a way to enhance students' learning experiences, and deepen levels of learners' engagement and collaboration within digital learning environments. Therefore, research should be conducted to determine the best ways to integrate these tools into existing e-learning programmes. Among the disadvantages web 2 tools are sometimes prone to vandalism and, as a result, to serious quality issues, because of their free form nature and the (relative/potential) lack of control over their content, though this can also be their very strength. Of particular importance is research into novel integrative applications, to serve as the "glue" to bind the different forms of web-based collaboration were synergistically in order to provide a coherent wholesome learning experience (Boulos, Maramba & Wheeler, 2006).

LEARNING THEORIES AND BLOGS

According to Anderson and Elloumi (2004) the design of online learning materials -so and the different ways software tools are used to deliver it to the student- can include principles from behaviorist, cognitivist, and constructivist approaches to learning.

Blogs often reported as social software tools, as they support a variety of ways of learning: sharing of resources, collaborative learning, problem-based and inquiry-based learning, reflective learning, and peer-to-peer learning (Minocha, 2009; O'Reilly, 2005). Students gain transferable skills of team working, online collaboration, negotiation, and communication, individual and group reflection, and managing. The educator's role is changing from being a provider of information to a facilitator or moderator, which raises training needs, workload issues, and adjusting to a new way of teaching (Minocha, 2009).

Additionally, to integrate the social dimension into the pedagogy of online learning environments, the synthesis of the cognitive constructivist and socio-constructive approaches was recently proposed (Mödrtscher, 2006).

In this cognitive constructivist approach, the focus is on cognition that occurs in the mind of the individual, with the learner making intellectual sense of the materials on their own. This approach emphasizes the socially and culturally situated context of cognition, in which knowledge is constructed through shared efforts, as the interactions through collaborations or discussions on educational blogs, enable knowledge to be constructed individually but mediated socially (Minocha, 2009).

The experiences of on line social interaction can be facilitated through interactive activities such as small-group discussions, simulation games, project-based work, and collaborative problem-solving activities (Driver, 2002; Yu, 2009). Likewise, according to several studies blogs support reflective practice and active student-centered teaching (Forster & Tam, 2004). However, it is also pointed out that even with increased "learner centeredness", there will still be significant demands on teachers to provide structure and facilitate the learning (Crook et al., 2008).

EVALUATION OF LEARNING

Hiltz and Wellman (1997) reported that student grades are the most prevalent measure of learning outcomes. On the other hand, the use of students' perceived learning as a measure of on line learning was based on several assumptions. Among them is the fact that instructors evaluation of students work can vary from instructor to instructor, as well as grades don't necessarily reflect how much students feel they have accomplished during an educational programme (Jiank & Ting, 2000). Moreover, Rovai and Barnum (2003) supported that the use of grades to operationalize learning may not always provide the best results. Classroom test grades or final course grades tend to have restricted ranges, that is, they tend to reflect uniformly superior achievement, thus severely limiting their use in any correlation study. Whenever the range of a variable is restricted, any correlation involving that variable is artificially reduced and the statistical results are not trustworthy.

In addition, grades may have little relationship to what students have learned. Students may already know the material when they enrol or their grade may be more related to class participation, work turned in late, or attendance than to learning. Furthermore, grades may not be a reliable measure of learning, particularly for the authentic performance tests that are valued in constructivist and cooperative learning environments, as different teachers and even the same teachers over time are unlikely to assign grades consistently. Therefore, using grades as a measure of cognitive learning can be problematic (Rovai & Barnum, 2003).

Research evidence suggests that self-reports can be a valid measure of learning and that students' perceptions may be more important than "reality", as decisions about learning are often based on perceptions. Pace (1990, as cited in Terrell, 2004) supported the validity of students' self-reports of learning based on research evidence that suggested consistency of results over time and across different populations. Corrallo (1994, as cited in Lindholm-Leary, 2005) concluded that self reports of cognitive gain are indicative of results obtained through more direct forms of assessment. In the more recent years other researchers used students self-reports in order to evaluate on line learning outcomes (Rovai & Barnum, 2003). Accordingly, the present study uses self reports to operationalize learning.

METHOD

Participants

Sixty physical educators were the initial number of participants to an eight week distance training programme, whose context related to the effective physical education teaching in school environment. During a two week period six of them dropped out, forced by unexpected family obligations, according to their reports. Thus, the participants included in this study were fifty four physical educators (N=54) who teach in elementary and secondary schools of different Greek regions, with experience of 1.67 to 21.75 years (M=7.72, SD=4.45). The educators' participation was voluntary, without any gain but the experience and knowledge on issues of their professional interest in an innovative way motivated them. The anonymity of responses and their confidentiality as participants were explained before distributing the instruments. From the participants randomly were formed three member groups STAD (n=20), COOP (n=19), and ICL (n=15). Each group followed the training programme through three blog courses, in every which a different cooperative teaching method was applied.

Instrumentation

Perceived learning was measured by physical educators' self-reports of their learning. The instrument employed was first used by Richmond et al. (1987) and has since been used in other studies related to learning. The authors (McCroskey et al., 1996; Rovai & Barnum, 2003) reported that test-retest reliability over a five-day period was .85 in a study of 162 adult learners. They also reported that a sample of 365 university students at West Virginia University enrolled in various traditional courses responded to the perceived learning question with M=6.0 and SD=2.0.

For the present study, Rovai's and Barnum's instrument version (2003) was used. Participants were asked to respond to the following three items:

- (Perceived learning in the present course) "On a scale of 0 to 9, with 0 meaning you learned nothing and 9 meaning you learned more than in any other course you've had, how much did you learn in this course?"
- (Perceived learning if taught in a traditional classroom) "On a scale of 0 to 9, with 0 meaning you learned nothing and 9 meaning you learned more than in any other course you've had, how much do you think you could have learned in this course if it had been a traditional face-to-face course that met regularly in a classroom?"
- (Perceived learning if taught by the ideal instructor) "On a scale of 0 to 9, with 0 meaning you learned nothing and 9 meaning you learned more than in any other course you've had, how much do you think you could have learned in this course if you had the ideal instructor?"

Data Collection

Data was collected using an online questionnaire, immediately after the training program was completed. An online questionnaire was the more efficient and economical way of collecting data from the participants because all of them teach in schools of different Greek regions and were avid users of the web. It was designed in such a way that before the participants first clicked on the link to the questionnaire, they were shown an informed consent letter explaining the purpose of the questionnaire, their rights as participants, as well as any possible risk involved in participation of this research. The participants were also given the email address of the researcher in case there were other questions regarding the research that a participant wished to clarify. The email could also be used if a participant was interested in knowing the results of the research study. It was determined that participants would need approximately 5-8 minutes to complete the three questions of this instrument.

Procedure

Learning to socio-contractive learning approach and different cooperative instructional strategies, three course blogs were developed, in order to be used and evaluated in physical educators' training. In this paper, we focus in presenting the learning effects of the teaching processes, than the educational blog's context or blogs' affordances. However, we should mention that educational material was designed to be the same in all three blogs, over the Teacher's Performance Assessment Instrument-Revised (TPAIR) thematic units (Flowers, Testerman, Hancock & Algozzine, 2002). Additionally, in all blog courses the education material was delivered by the same instructor, as far as the course duration, on-line support services and the blogs' user interface (picture 1) were held constant.

The image shows a screenshot of a course blog user interface. At the top, there is a navigation bar with several tabs: 'Αρχική', 'Χρήσιμες οδηγίες', 'Εκπαιδευτικές ενότητες', 'Χώρος συνεργασίας', 'Εργασίες', and 'e-Συζήτηση...'. Below the navigation bar is a banner with the title 'Περί Φυσικής Αγωγής ο λόγος...' and a photo of children playing sports. A search bar and RSS feed link are also present. The main content area features a sidebar with 'Σελίδες' (Pages) listing various educational resources, a central article titled 'Καλό μήνα!' (Happy month!) with a cartoon illustration of a teacher and text about online teaching, and a right sidebar with a calendar for July 2010, an 'Αρχείο' (Archive) section, and a 'Βιβλιοθήκη' (Library) section.

Figure: 1
Course blogs user interface.

The three cooperative teaching methods that were applied were: Student Teams Achievement Divisions (STAD), Co-op Co-op (COOP) and Informal Cooperative Learning (ICL) (Kagan, 1994; Streeter, 1999). The detailed teaching procedure in each one of them is presented in table 1. Participants had access to a virtual classroom (blog) using their personal codes, where the educational material was uploaded and participating in to group discussions with their mates and other blog members.

Table: 1
Cooperative procedures during the blog courses.

1st blog (STAD)	2st blog (COOP)	3st blog (ICL)
Providing the participants with detailed instructions, about the educational procedures, course content and blog's management tools.		Providing the participants with general instructions, about blog's management tools.
	Group discussion on the thematic units that follows. Instructor's encouragement to express participant's personal experience and opinions.	
Sectional presenting the course material, per thematic unit (weekly basis).		
Group discussion during the whole course.		
Long term, heterogeneous groups of 4-5 (*participants work together during the whole course to achieve shared learning goals and complete specific tasks).	Temporary ad-hoc, heterogeneous groups of 4-5 (*participants work together to achieve a joint learning goal in differently formed groups every thematic unit/week).	Free participating during the educational procedures (group forming, managing course material etc).
Working groups are formed by the instructor.	Working groups are formed by the participants.	
In every thematic unit, the course material is delivered by the instructor.	In every thematic unit, the course material is delivered by the instructor, divided into sub-themes. Different sub-theme is assigned to every group.	
Project work (the same project is assigned in all groups). Different participants' roles (leader, presenter etc) are assigned by the instructor.	Project work (different project is assigned to every group). Different participants' roles (leader, presenter etc) decide by the participants themselves.	
Presentation/announcement every group's projects. Individual self evaluation quizzes. Team recognition.		

The trainings' programme duration was eight weeks. In the beginning of every week a new thematic session was released. The educational material (in accordance with the possibilities offered by the blog provider) was presented using PowerPoint slides

(included plain text, drawings, pictures), printable scripts (.pdf), videos, references to literature for further information and hyperlinks to relevant websites

The communication between participants and instructor-participants was carrying out through the option "post" or "replay" in regard to blog technology. The instructor had only a moderator role and no feedback regarding the personal progress was given. During the training programme, the participants were split into small subgroups in order to conduct weekly cooperative assignments; a project drafting cooperative work were at the end of the week announced to all the blog members by the leader of each subgroup.

RESULTS

Descriptions of the statistical procedures utilized in analyzing the data collected for this investigation are presented in this section. Data analysis was conducted using SPSS version 17 statistical software. The statistical analysis included both descriptive statistics and inferential statistics. Descriptive statistics were provided to summarize the data and include measures of central tendency: mean, median, mode, and measures of variability (i.e., range, standard deviation). Inferential statistics were based on the compare means and an alpha level of .05 was established prior to data analysis. One-way multivariate analysis of variance (MANOVA) was performed to evaluate the differences in perceived cognitive learning by blog course (cooperative method). The independent variable consisted of the three blog courses in the present study. The dependent variables were the three measures of perceived learning. Significant differences were found among the three blog courses on the dependent measures, suggesting that were heterogeneous regarding perceived learning (Wilk's Lambda = .21, $F_{(6,98)}=18.93$, $p<.001$).

Analyses of variance (ANOVA's) on the three depended variables measuring the perceived cognitive learning were also conducted. The ANOVA's using perceived learning in the present course ($F_{(2,51)}=39,71$, $p<.001$, $\eta^2=.60$), perceived learning if taught in a traditional classroom, ($F_{(2,51)}=6,53$, $p<.05$, $\eta^2=.20$), and perceived learning if taught by the ideal instructor ($F_{(2,51)}=16,16$, $p<.001$, $\eta^2=.38$) were significant. Sidak's post hoc comparisons among the three blog courses were conducted for perceived learning and provided evidence that participants of the third blog course (ICL method) thought that they learned less in the present course, or if taught in a traditional classroom, by the ideal instructor than participants of the STAND and the COOP blog course (table 2).

Table: 2
Descriptive Statistics for Measures of Perceived Cognitive Learning by Course.

Blog course/method	Present course		Traditional course		Ideal instructor	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
STAND	7.16	0.76	6.50	0.68	3.80	1.70
COOP	6.45	1.27	5.84	1.67	5.37	2.45
ICL	4.00*	1.06	7.27*	0.70	7.40*	0.91

Note. The perceived learning scales can range from a low of 0 to a high of 9.
*Significantly different after Sidaks' test ($p<.05$)

DISCUSSION

The findings of this study provided information on the physical educators' perceptions of learning, toward asynchronous distance blog courses using three cooperative teaching methods. Of particular interest was how perceptions varied by cooperative method when all blog courses were delivered by the same instructor, using the same educational material, course duration, on-line support services and blogs' user interface were held constant. The extent of the differences found is likely to be related to the influence of the cooperative instructional methods which was applied in each blog course.

The results showed that overall, participants' responses in the perceived learning questions supported the benefits of using asynchronous web 2 tools, such as blogs, in distance education programmes. Further data analysis showed that the first that STAND and COOP cooperative teaching procedures were more efficient than ICL. Likewise, although there was no statistically difference between STAND and COOP method, participants that followed the blog course towards STAND method appears to feel they learned more than those participated to the COOP course blog.

The increased level of the individuals "decisions" that physical educators had to take during the educational procedures (group forming, managing the course material etc) and the instructors' level of "absences" seem to negatively impacted on their perceptions of learning. Moreover, the weekly group project assignments, the announcement and recognition of the groups' projects and the roles participants had to undertake also facilitated them, in both STAND and COOP blog courses, to cooperate in order to achieve the e-course's aims. As a result a stronger interactive online environment was developed.

The results of the present study supported the findings of an extended meta-analysis of 164 studies, investigating eight cooperative learning methods, in which the authors concluded that the methods' effectiveness varied and increases from specific procedures to rather complex procedures that require some sophistication to use (Johnson, Johnson & Stanne, 2000). However, all the reviewed studies reported that cooperative methods they examined were effective in increasing achievement and that fact is a tribute to the power of cooperation. Moreover, according to Creed (2001) offering a wide range of subject course, modules or options during distance education programmes may become unmanageable where there is a limited organizational capacity.

On the other hand, some researchers reported that in order to promote and encourage student participation and cooperation, the instructor has to ensure that "she" or "he" does not become the center of attention (Bullen, 1998) and that in an on-line course, the student moderators are performing a substantial part of the instructors presence role (Anderson, Rourke, Garrison & Archer, 2001).

The authors refer to this element of the community of inquiry as "teaching presence" rather than "teacher presence," as the number of individuals who are not instructors often collaborate in carrying out this role.

The present study's findings supported that there is a certain limit to this point of view, since the appropriate "amount" of instructors' interventions and guidance occurred as a crucial factor relevant to the establishment of an effective cooperative on-line educational process.

In conclusion, physical educators' perception of learning using asynchronous web 2 tools such as blogs appears to be positively increased regarding the regulation of the applied cooperative procedure. However, there are clearly many more steps in valuation of adult students' learning outcomes, as far as the relation between the amount, the direction, the quality of the interaction in asynchronous distance education programmes and their perceived learning.

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