Chapter 1

A Blended Learning Course for Teachers' Ongoing Professional Development in Greece

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ABSTRACT

The purpose of this chapter is to describe the design, implementation and evaluation of a professional development program for teachers initiated by the Greek Ministry of Education and Religious Affairs in cooperation with the National and Kapodistrian University of Athens. The course focused on multicultural education and bullying in schools as it was realized through blended learning whereas the methodology applied was a face-to-face meeting and 250-hour web-based learning. The evaluation process aimed to involved teachers' perceptions toward different aspects of the blended training process. The quantitative and qualitative results indicate that the teachers were satisfied both with the opportunity to learn at home at their own pace as with the opportunity to develop knowledge and skills in relation to their work. The results brought to light arguments, controversies, and problems related to the course. Finally, some recommendations that would improve the effectiveness of courses employing blended learning methodologies are given.

INTRODUCTION

Teachers' professional development is integrally related to the quality of education and is closely linked to improved learning outcomes and school environment (Meiers, 2004; Snoek, Uzerli, & Schratz, 2008). Recent studies offer compelling evidence that professional development offers skills

and knowledge that enable teachers to improve their instructional and intervention practices and to deal effectively with local community needs (Darling-Hammond et al., 2005; OECD, 2005). Teachers' professional development encompasses different types of facilitated learning opportunities, ranging from a single workshop to a full-semester academic course, and varying widely in the content and the form of the learning experiences involved (Borko, 2004; National Professional Development Center

on Inclusion, 2008). The rapid development in Information and Communication Technology (ICT) has provided more flexible and effective ways for professional development for teachers, not possible in traditional in-class education (Dede, et al. 2006).

Recognizing the importance of ICT, the majority of the countries in the world have developed open and distance learning methods supported by (ICT) to facilitate teachers' networking and to provide online learning experiences (Jung, 2005). Academics, education researchers, political and policy driven motivators have also begun to support the development of online professional development not only in distance education settings, but also in courses, which combine features of online learning with traditional classroom-based learning (Owston, et. al., 2008; Simkins, et. al. 2009). These courses are often referred to as 'blended learning', combining various types of pedagogy with different tools for interaction and discussion (Lord & Lomicka, 2008). Research evidence suggests that blended learning courses reap the benefits of both face-to-face and online learning such as flexibility, convenience, scalability and adaptability, enabling teachers to become more directly involved in their own learning and their professional growth (Rovai & Jordan 2004).

Based on the assumption that professional development should be an integral part of daily practice for all teachers, the European Commission supports policies for improving teacher competences and qualifications under the 'Education and Training 2010' programme (European Commission, 2007; Zgaga, 2008). In this context, the Greek Ministry of Education and Religious Affairs with the support of the European Commission initiated a teachers' professional development course under the name "A Web-based teachers' training to enhance teaching and learning". The course was developed in cooperation with the National and Kapodistrian University of Athens and combined both a face-to-face meeting and web-based learning, supported by facilitators. A total of 187 teachers employed in state schools, primarily from the rural areas of northern Greece, participated in the course, which lasted from October to November 2008.

This chapter aims to describe the components of the teachers' professional development course and to investigate the teachers' personal experience of the blended learning process. The findings of this study offer further understanding of the specific contexts, conditions, and practices that contribute to the success of blended learning for teachers' professional development courses.

BACKGROUND

Current literature provides varying definitions of blended learning, reflecting the diversity of instructional practices, pedagogic approaches and technology modes (Stacey & Gerbic, 2009; Martyn, 2003). Although there are different points of view regarding the various components of blended learning, educational theorists and practitioners seem to agree that the essential nature of blended learning is the on-line delivery of instructional content with the on-site implementation of instructional strategies (Graham 2006; Osguthorpe & Graham 2003). In teachers' professional development setting blended learning is viewed generally as a combination of face-to-face and distance learning methods offered to develop teachers' knowledge and skills and provide them with additional qualifications (Hellmig, 2008). Research evidence suggests that the blended learning approaches increase teachers' access to training, improve teachers' flexibility and convenience, and facilitate effective pedagogical strategies to develop teachers' knowledge and skills (Fiege, Peacock & Geelan, 2004; Hojsholt-Poulsen, 2007; Samarawickrema, 2009).

To date, much of the research examining blended learning has been done with researchers who are involved in national projects designed to support teachers' on-going professional de-

velopment (Makey, 2008; Polhemus & Jennings, 2005). Although several of these projects have commonalities regarding the instructional system design, the alternation and variation of delivery mechanisms, each project offers insight into course structuring and blended learning efficiency. In particular, Wideman, Owston, & Sinitskaya (2007) presented a comparative analysis of the evaluation findings from three major multi-jurisdictional teacher professional development projects that used a blended model for delivery incorporating both online and face-to-face components. Their findings revealed several factors which had an impact on the level of success of these blended initiatives including the substantial face-to-face contact, the reliability and the simplicity of the software tools employed in the project, the adequate support from the administrators, and the on-going mentoring provided by the facilitators.

Similarly, Sinclair & Owston (2006) described a two-year professional development course consisting of a day long face-to-face session, an eight-week online session, and a final face-to-face session at the end of the course. Their results concluded that the course affected teacher attitudes and knowledge positively and motivated them to transform their classroom practices. However, lack of cohesion in the online session and the failing rate of the participation suggest the need to rethink some aspects of the design of blended learning environments. Henderson (2007) on the other hand, explored the role of community of practice in sustaining teachers' participation in a blended learning professional development course which consisted of face-to-face and online learning components. He suggested that teachers' participation in the learning process can be sustained by supporting teachers to work in small groups.

Likewise, Berger, Eylon and Bagno (2008) outlined a blended professional development course designed for physics teachers. The course had nine face-to-face meetings as well as continuous online exchanges between facilitator and teachers through a Website. Results revealed that both, face-to-face meetings and the Web-based environment played different and complementary roles in the teachers' learning. Combining the findings of three teachers' professional development courses Owston, et al (2008) found that blended learning methodologies were effective in providing teachers with an opportunity for learning on the job and collaborating with other teachers. These findings revealed several of the factors which had an impact on the level of success of blended initiatives. Since evidence from professional development courses support the on-going acquisition of knowledge, further research is needed to understand more specific factors affecting the teaching and learning effectiveness in courses employing blended learning models. As Stacey & Gerbic (2009) noted "the literature to date indicates that attention in the teaching and learning area of blended environments has focused on understanding the aspects of the virtual and physical environments which are valuable for learning and how to integrate them so that they work in complementary fashion" (p.10).

THE PROGRAM DESCRIPTION

Bullying is a significant pedagogic issue connected to education, psychological well being and the social behavior of the students as the negative consequences affecting the young victims of intimidation and bullying are multiple and long-lasting (Anderson, 2005). The role of the teacher is of utmost importance, on the one hand for the social development of the students and the conveyance of the principles and rules that permeate the acceptable social behavior and, on the other hand, for the management of the relationship among the students and the treatment of possible problems that might lead to a manifestation of derailing behavior (Houndoymani & Pateraki, 2001).

At the same time, the ever increasing attendance in Greek schools of foreign students creates new problems for the schools and renders certain

requirements allowing equal opportunities to all students of all levels a necessity (Georgiadis, & Zisimos, 2005). Within this framework, the need to sensitize the educational society and train the teachers for the prevention and management of the problems to arise due to the co-existence of various cultural influences within the school environment is deemed necessary (Govaris et al, 2003; Demetriou, 2004). The access given to all teachers as regards the continuous improvement programs relevant to their qualifications and skills in a way that reflects their daily needs comprises the focal point for the scientific community and the bodies involved in the further education of the teachers.

Within the aforementioned framework, the adoption of methods for distance learning with the support of information technology and communication promises the creation of continuous education structures in an effective, flexible and reliable way irrespective of the teachers' residence and location of work. The training program which

is presented in this study was a blended learning program targeting multicultural education and bullying in schools. The main objectives of the program were to: (a) Help teachers acquire knowledge, attitudes, and skills needed to interact, negotiate, and communicate with students from diverse groups;, and (b) Advise teachers on how to confront and prevent bullying in schools. A total of 187 teachers employed in state schools primarily from the rural areas of northern Greece participated in the course (see Figure 1).

The teachers' professional development program included four components: (a) the program's content, (b) the web-based environment, (c) the face-to-face meeting and (d) the online learning process. These components are described below.

The Programs' Content and the Material

In the preparatory phase of the program, the modification/formation of the analytic program's

Figure 1. Map showing the two regions northern of Greece engaged in the course: Iperous, East Macethonia-Thrace

content was completed in addition to the writing of the material. The content of both the prevention of bullying and the management of multiculturalism in the school environment was divided into thirteen modules (Table 1).

The online learning material which was used to support the content was organized in lessons (5-7 lessons for each module). Each lesson included 10-15 pages of online text (Figure 2.)

The material was developed from the basic principles of open distance learning. In particular, the main features of the material were: (a) clearly stated objectives in each lesson, (b) examples and activities that illustrated functions and key issues of the subjects throughout every lesson, (c) self-assessment tests to help teachers check their own progress, (d) final tests and assignments to assess teachers' knowledge, and (e) resources including files in .pdf format and links to other resources. The material also included manuals and guides for the face-to-face meeting (see below). This material consisted of a study calendar, a prortfolio of programs' evidence and a web-based environment manual.

The Web-Based Environment

The second stage included the design of the web-based environment which was used to support the distance training process. The web-based environment was based on an open-code Learning Management System (www.istos.sch.gr) and the registered teachers had access to the lessons as well as a calendar (see Figure 3). The teachers

Table 1. The programs' subjects and modules

Subject	Modules
A. Prevention of bullying	1. Behavioral issues. 2. Bullying/ the bullying phenomenon. 3. Characteristics of children with behavioral issues. 4. Aggressive behavioral patterns at school. 5. Reasons and factors that enhance bullying. 6. Educational intervention for the prevention and management of bullying. 7. Intervention programs for the resolution of conflicts
B. Management of multiculturalism	8. Globalization and education. 9. Educational policy on multiculturalism. 10. Xenophobia, racism. 11. Analysis of experiences from countries with a history in the managements of relevant educational issues. 12. Principles of cross-cultural education. 13. Examples of educational application of the principles of cross-cultural education.

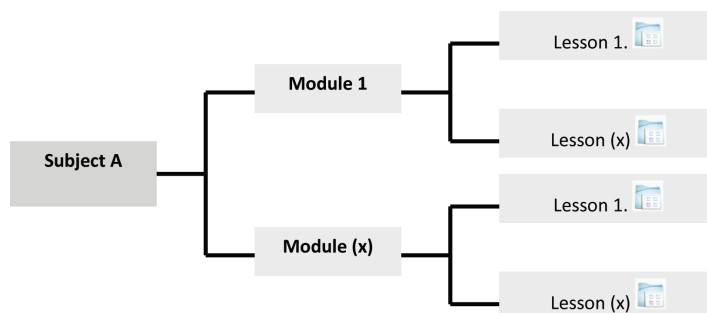*Figure 2. The structure of the online learning material*

Figure 3. The user-interface of the web-based environment: (1) login account, (2) online users, (3) classes, (4) program's subjects, (5) material, (6) calendar

who participated in the program had their own personal account in the system and all program materials were available to them through login on the web site. All the interaction between the teachers and the facilitator took place through e-mails during the program.

Following this, the modification of the material according to the standard SCROM 1.2 was completed so as to be used in a web-based environment. The material modification in each of the program lessons was specifically structured and was divided in the following units/chapters: purpose, expected results, key concepts, introductory notes, contents of the lesson, summary, bibliography and tasks-activities (see figure 4.). In addition, the participants had the opportunity to download additional resources in.pdf files format.

Face-to-Face Meetings

The training process began with two six- hour face-to-face meetings held on the first two weeks of October, one for the teachers from the region of East Macethonia/Macedonia – Thrace held in Komotini and one for the teachers from the region of Ipirous held in Ioannina. During these face-to-face meetings the training process and the asynchronous distance learning platform were explained to the teachers as well as the purpose and the targets of the program. There followed a discussion where the teachers posed their questions concerning the administration of the educational process.

The Online Learning Process

The distance training process lasted for six weeks (October-November 2008). The trainees were grouped into 'classes' of between 16 and 25 teachers who each received support from their facilitators. Each teacher used his personal username and password to access the material and participate in the educational process. This process was based on the study of the contents by the teacher (self-directed learning). During the training process the teachers were engaged in online tests in order to confirm that the learning targets were met. In particular, these activities

Figure 4. The main features of the program's material in each lesson: (1) list of content, (2) title of subject, (3) title of module, (4) introductory notes, (5) examples and activities, (6) online text, and (7) recourses in.pdf format

Table 2. The assignments

Prevention of bullying	Management of multiculturalism
Please describe a bullying case and suggest ways to manage the problem at a school level and through cooperation with the family and environment of the students.	Please describe an educational activity dealing with multicultural issues, defining the potential problems during the implementation phase and suggest ways for their resolution.

included:

- Self-evaluation tests which were given at the end of each lesson and a final test, where the teachers had to answer a group of questions that covered all the modules of the program. The tests included the following question and answer types (a) yes/no questions, (b) multiple choice questions, and (c) open-ended activities (submitted in.doc or.excel files format)
- A written assignment for each module of the training program (one for bullying in schools and one for multicultural education).

Throughout the educational process, a facilitator was responsible for monitoring and supporting each class of teachers while the teacher could address via electronic mail his facilitator for the resolution of questions as regards the lessons and the assessment exercises. In particular, the facilitator's responsibility concerned: (a) the informing of the teachers regarding the timetable of the educational activities, (b) the correction and assessment of the open-ended activities, (c) the support – elaboration of the assignments and their evaluation, (d) the communication with the teachers on a 24hour basis and the response to their messages providing instructions, advice and assistance, and (e) the reporting of the open-ended activities and assignments marks.

Figure 5. A multiple choice question in a self-assessment test

Figure 6. The pedagogy of the teachers' professional development program
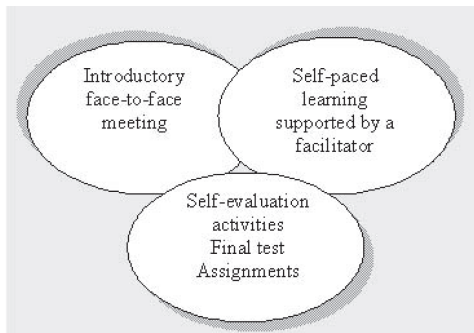
The Program's Evaluation

Sample

Of the 187 teachers initially enrolled in the training program, 132 participated in the evaluation process, resulting in a 70.6 percent participation rate. The gender and age profile of the sample is presented in Figure 7 and Figure 8 respectively. The majority of the teachers who participated in the evaluation process was secondary education teachers (64.4%, n=85) with primary education teachers comprising the remaining 35.6% (n=47).

More than half of the respondents (n=76, 57.6%) reported that they already had more than 10 years of teaching experience, while 27.3% (N=36) reported that they had between 5-10 years, and 15.2% (N=20) reported that they had less than 5 years of teaching experience.

Instrumentation

A questionnaire was developed to investigate teachers' perceptions on the blended learning program. Apart from demographics and background information sections (i.e. gender, age, job status, and teaching experience in years) there were 7 scales, each containing from 3 to 7 items, in the questionnaire. All the scales and the items used to measure the participants' perceptions were adapted from prior studies with modification to fit the specific context of the teachers' professional development program. In particular, the scales of personal relevance, active learning, facilitator, and satisfaction were adapted from Walker's (2002) work on Distance Education Learning Environments Survey (DELLES) while the scales of the material was adapted from Clayton's (2007) work on online learning environment survey (OLLES) and the scale of web-based
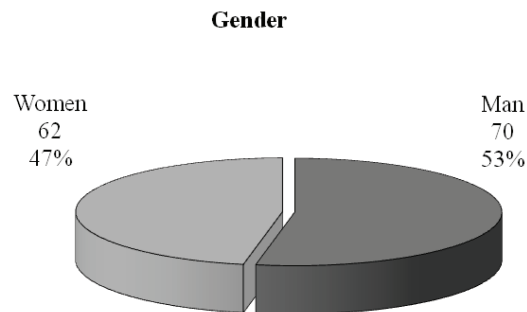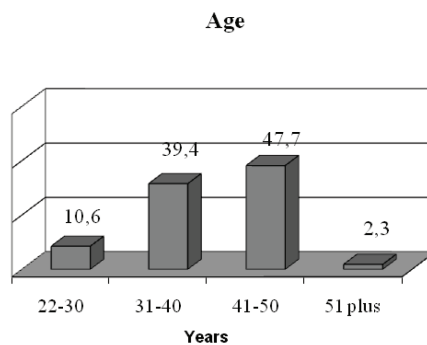
Figure 7. Gender profile of the sample

Gender

Figure 8. Age profile of the sample

Age

environment was adapted from Chang and Fisher's (2001) work on Web based Learning Environment Instrument (WEBLEI). In addition, three items were used to measure the teachers' perceptions toward the face-to-face meetings (Garrison & Vaughan, 2008). The description of the scales is presented in Table 3.

All items used a five-point Likert-type scale with anchors from 1 to 5 (1=strongly disagree, 2=disagree, 3=undecided, 4=agree, 5=strongly agree). Several of the items used negative undertones (i.e not) in order to detect acquiescent response sets that occur when the respondent supports items without regarding the actual content. Cronbach's coefficient test (a) was used to indicate if there was internal consistency of the questionnaire. The summary statistics of the item analysis for homogeneity and reliability indices

reveal that the questionnaire reached a high alpha coefficient (a=.94) in all of the 34 intended items. The interval statistics concerning consistency reliability, ranged from.94 to.82 for the seven scales:.92 for personal development,.87 for active learning,.94 for the facilitator,.93 for the material,.91 for the web-based environment.82 for face-to-face meeting, and.88 for satisfaction. According to Kaplan & Sacuzzo (1993, 126) "it has been suggested that reliability estimates in the range of.70 to.80 are good enough for most purposes in basic research". Therefore, the alpha values will be considered acceptable for the objectives of this study.

Finally, the questionnaire included two open-ended questions to collect each teacher's perceptions about the blended learning program. These questions were:

Table 3. Description of the scales used to measure participants perceptions

Scale	Description	Number of Items	Example Item
Personal development	Extent to which teachers have opportunities for self-enhancement, development and knowledge achievement (Walker, 2002)	6	"I have the opportunity to work with authentic examples"
Active learning	Extent to which learners were engaged actively in the learning process (Walker, 2002).	4	"I am allowed to work during times I find convenient"
Facilitator support	The extent to which the facilitator guides teachers and provides comprehensive feedback and support (Clayton, 2007)	7	"The facilitator provides timely assessment on my assignment"
Material	Extent to which class materials are well structured and organised (Clayton, 2007)	5	"The content is well-organized and easy to follow"
Web-based environment	Extent to which the web-based environment is reliable and user friendly (Chang & Fisher, 2001)	4	"The web based learning environment held my interest throughout my course of study"
Face-to-face meeting	Extent to which face-to-face activities support students in their learning	3	"Face-face-meeting helps me to understand the concept and the goals of the course"
Satisfaction	Extent to which students enjoyed training and expressed positive attitudes toward the blended learning (Walker, 2002).	5	"I would better enjoy my professional development if more courses were offered through blended learning"

1. What did you like or dislike about the blended learning program?
2. Do you have any suggestions for improving the teachers' professional development program?

Data Collection and Data Analysis

The questionnaire was administered as an online form at the end of the training program. The teachers who agreed to participate in the evaluation survey completed the questionnaire anonymously. The researchers assumed that the participants in the evaluation study composed a representative sample of the program participants. It was further assumed that these participants provided truthful responses in the survey items. As far as the data analysis method is concerned, descriptive statistics methods were used for the quantitative data retrieved from the first and the second section of the questionnaire (frequency counts and percentages). In addition, content analysis method was used for the qualitative data retrieved from the open-ended questions of the questionnaire (teachers' comments analyzed and grouped according to similar responses).

ISSUES, CONTROVERSIES AND PROBLEMS

The results of the study highlight several issues affecting the teachers' perceptions regarding the main aspects of the blended training process. The results of the descriptive statistics regarding the items of personal development scale indicate that the majority of the teachers (75.8%) agree or strongly agree with the item that the program offered them the opportunity to work with cases drawn from their personal school experiences. A large percentage of the teachers also rated positively the items related to the opportunities they had to apply what they learned in their every day work (77.3%) as well as in their out-of-school

life experience (75.5%). These findings are consistent with other studies demonstrating that teachers display readiness to learn when they have a perceived need, and they desire immediate application of new skills and knowledge (Nguyen and Katz, 2007). The results of this study also indicate that the teachers reported lower percentages of agreement in the items regarding the opportunities provided by the program's content to work with authentic examples and with realistic scenarios about practice of multicultural education and bullying prevention in schools (56.8% and 56.5% respectively). These findings reveal that further to the theoretical knowledge based on which the content was formed, the examples of school children behavioral problems and their treatment scenario at a school level did not fully cover the teacher's needs. As far as the organization of the training program are concerned, the results from the first open-ended question of the questionnaire indicate that the duration of the training process (the program lasted 6 weeks) was the most negative feature of the program. Many teachers responded that they did not have enough time to absorb the amount of information given (62 responses) and complete the online tests and assignments successfully (42 responses).

As far as the opportunities for active learning are concerned, the results indicate that the majority of the teachers appreciated the opportunity they had to explore their personal strategies for learning (79.5%). A majority of the teachers (77.7%) agree or strongly agree that the "anytime" and the "anywhere" features of the program provided them with the opportunity to plan their activities whenever and wherever it was most convenient for them. The results of this study also indicate that fewer teachers (60.6%) reported that during the program they felt confident of taking control of their learning as well as to incorporate their ideas into the learning process. A possible explanation for the relatively lower rate of teachers' confidence is that many of them did not have the appropriate required skills and attitudes to engage

in self-directed learning. Previous research has shown that although online learning is a flexible and comfortable approach, many questions have been raised about the validity of self-directed learning for adults because many of them are not predisposed to take control of their learning and this is one important caveat regarding the distance learning process (Brookfield, 1995).

An examination of the first open-ended question demonstrates that some teachers (29 responses) claimed that although the program used some active learning approaches (open-ended activities, self-evaluation test and assessments), the nature of the program content, in general, demands teachers to take a more passive role in the acquisition of information on the web-based environment. As far as the teachers' perceptions of the material are concerned, the analysis of the quantitative data indicate that the majority of the teachers perceived that the assignments and the online tests were valuable for their learning (68.9% and 75.7% respectively). Many teachers also thought that the online texts were easy to read (61.4%) and the information was presented in a structured manner that was easy to follow (Figure 9).

In their comments on the first open-ended question, the teachers identified some negative features of the material regarding the self-evaluation tests. In particular, the teachers quite frequently commented that some questions in the self-evaluation tests presented errors or problems that affected the correct answers (29 responses). Some teachers also noted that the material would promote an active learning if the texts were designed carefully to integrate various media (textual and audiovisual) in an environment based on hypertext and hypermedia (27 responses).

As far as the role of the facilitator is concerned, although the 54.4% of the teachers appreciated the autonomy they had to ask the facilitator about issues they did not understand, the same percentage of teachers (55.6%) were neutral about or did not feel that the feedback they received from their facilitator was comprehensive. Similarly, 57.9% of

Figure 9. "The content information is well-organized and easy to follow"
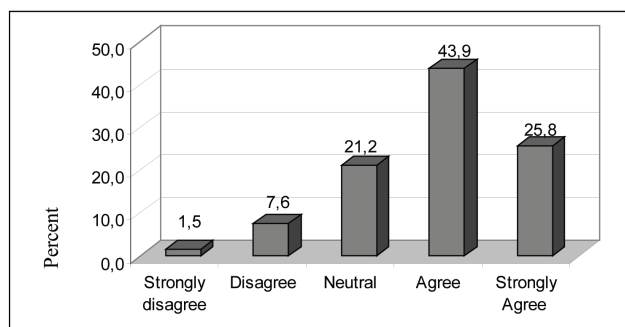
the teachers were either neutral or disagreed with the statement that the facilitator offered timely assessment on their assignments. About half of the teachers also strongly disagreed or disagreed with the item that the facilitator encouraged every teacher to participate by asking questions and exploring issues and ideas in depth (Figure 10). Relevant literature indicates the while participation is an obvious goal in face-to-face courses that include frequent discussions and small-group work, it is also important in a blended learning course (Garisson & Vaughen, 2008). In order to promote a learners' participation, the facilitator should encourage collaboration in small groups by utilising anywhere, anytime access to communication tools and facilitate the use of engaging assessment, utilising online web technologies for discussion, interaction, research, submission and/or reflection (Meyer, 2003; Webb et al., 2005).
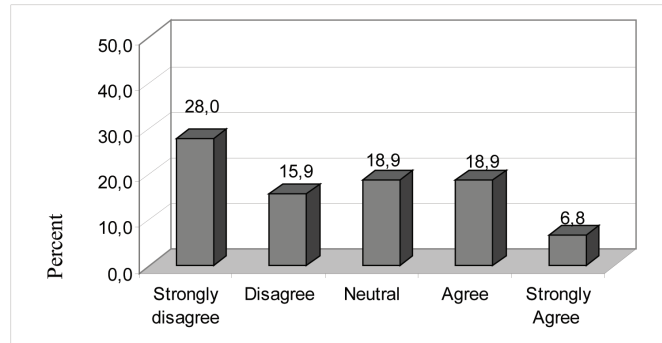
In the open-ended questions of the questionnaire the teachers remarked frequently that their facilitator delayed evaluating their assignments and informing them about their scores (26 responses). Some teachers also expressed negative feelings about the absence of collaborative and cooperative learning during the learning process (21 responses). These findings confirm previous research on blended learning that emphasizes the ability of the facilitator to support learners through individual feedback in their written work (Wright et al., 2006). Equally important for the

facilitator's role is to develop skills in facilitating online communities where peer-to-peer interactions provide a vital learning environment (Ziob and Mosher, 2006).

The results of this study reveal that the web-based environment held the teachers' interest throughout the program (71.2%) and enhanced their learning (69.7%). The results also indicate that a lower percentage of teachers claimed that they had no difficulty using the web-based environment (58.3%) and accessed the materials on their own (60.6%). The teachers commented on the first open-ended question of the questionnaire that many delays occurred in uploading the online texts (36 responses). Many teachers also complained that sometimes they were unable to open sources delivered through files in.pdf format (21 responses). Furthermore, the teachers also reported that the use of the web-based environment did not provide them with the necessary tools for real-time interaction and communication with their facilitator and other teachers (17 responses).

As far as the teachers' perceptions of the face-to-face meeting are concerned, the results of this study reveal that over half of the teachers reported that the meeting offered valuable information that helped them to understand the concept and the objectives of the program (Figure 11). A large percentage of teachers were neutral or disagreed with the idea that the introductory meeting did not provide them with the skills necessary to use the

*Figure 10. "The facilitator encourages my participation"*

web-based platform effectively or that it did not provide them with specific directions on how to deal with the online test and complete the assessments (71.3% and 79.5% respectively).

In their comments on the first open-ended question the teachers suggested that during the face-to-face meeting a lot of time and effort was needed in order to get specific guidance on how to do their work in the web-based environment (27 responses). The findings of this study are consistent with results from other studies which indicate that blended learning must be supported by face-to-face interaction, especially at the early stages of the teachers' encounter with technology (Cashion and Palmieri, 2002). Evidence from these studies have shown that while the flexibility of the online environments allows learners to access the material most convenient to them, learners identify

face-to-face interactions with their facilitators as the most desirable elements of blended learning courses (Kante, 2002).

Finally, the results of the descriptive statistics related to the scale of satisfaction indicate that the majority of the teachers expressed a strong interest in attending blended learning courses for their professional enhancement (91.7%). The vast majority of the teachers reported that they enjoyed their participation in the blended learning process (86.4%) and suggested that they would enjoy professional development better if additional courses were offered by blended learning methodologies (84%). The teachers also expressed a desire to participate in similar course in the future (78.0%) and expressed positive attitudes toward blended learning courses. The teachers' strong preference of the blended learning model is in agreement

Figure 11. "The face-to-face meeting helps me to understand the concept and the goals of the program"
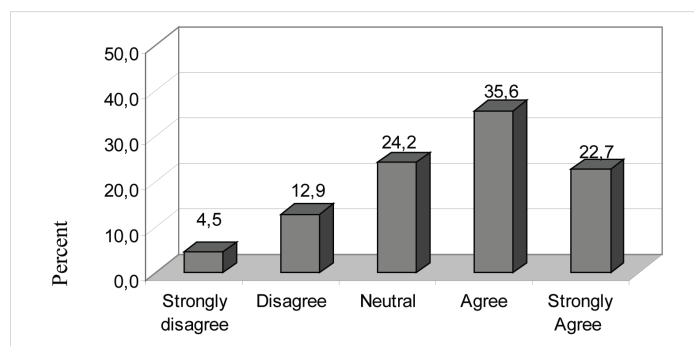
with reports from most current studies on online learning models (Bonk & Graham, 2006)

SOLUTIONS AND RECOMMENDATIONS

The goal of this section is to offer practical ideas and suggestions from the teachers' point of view on ways to improve the effectiveness of the particular professional development program. The teachers' comments on the second open-ended question of the questionnaire illustrate the need to adjust the content to the teachers' needs and their personal characteristics. Likewise, the timing and the duration of the training program should be reconsidered before deciding on the amount of information to be covered. The teachers very often noted that the present program could be restructured to last longer (10- to 15 months) in order to have enough time to study the material (45 responses) and to complete the tests and assignments effectively (32 responses). As regards the programs' structure, it should enable teachers to choose among different modules, those which meet their personal needs and interests (27 responses). Flexibility and choice in teachers' professional development courses are major issues for the majority of programs designers, namely to meet the diverse needs of trainee teachers and schools (Graham, Allen, & Ure, 2005).

Since the training program was offered mostly at distance, there were special challenges to meet in order to provide an effective pedagogical environment that motivate and support teachers to become self-directed learners (Merizow, 2004). According to the teachers' comments, the material should include additional scenario-based activities in relation to bullying in schools and multicultural education, which will lead to better learning results as well as effective professional development and reflection (25 responses). It is interesting to note that given the lack of many teachers' knowledge or experience in self-directed learning, an appro-

priate amount of face-to-face or online practice is needed before the main program begins. This practice will enhance all teachers' capability to understand the requirements of the program and thus sustain their interest, attitudes and efforts towards the program's objectives (17 responses). These findings corroborate the results of previous published research on what professional development course designers can do to promote the development of self-directed learning in distance learning environments (Garrison, 1997; Merriam, 2001;Song and Hill, 2007).

The received responses to the open-ended questions indicate that the material should include more activities catering for different learning styles, so that the teachers can select the appropriate activities based on their preferred style (29 responses). Teachers also commented that information should be presented in different formats such us textual, verbal and visual to improve their perception and attention for the learning process (21 responses). According to the teachers' views, the following modifications can improve the quality of the visual input:

- Important information and individual objects should become prominent by being placed in the centre of the screen and emphasizing different attributes of every visual object e.g. color, texture, or font (27 responses).
- Hypertext and hypermedia concepts should be used enabling teachers with diverse backgrounds and knowledge to establish their own path for learning (22 responses).
- Graphic design, tables and figures should be used to facilitate deep processing. In addition, the use of linear, hierarchical, or spider-shaped mind maps and concept maps would offer visual display of information and better understanding of relationships between objects (20 responses).
- The material should remain as reference material on the web helping other teachers

increase their knowledge in the fields of multicultural education and the prevention of bullying in schools (17 responses).

These findings of the current study are consistent with those of Ally (2004) who suggests that "information should be presented in different modes to accommodate individual differences in processing and to facilitate transfer to long-term memory. Where possible textual, verbal, and visual information should be presented to encourage encoding" (p.16).

One of the key issues which emerged from the teachers' comments on the second open-ended question pertains to the role of the facilitator and its possible suggestions for improvement. The teachers frequently noted that it would have been beneficial to them if they had more regular interaction with the facilitator (30 responses). Teachers also asked for improved timely interaction with their facilitator via the use of synchronous communication tools such as the Internet Relay Chat and the videoconference (25 responses). Interestingly, some teachers also reported needing telephone assistance available 24 hours a day (7 responses). Various improvements that were frequently noted by the teachers on the role of facilitators are the following:

- The facilitator should provide advice and guidance on tests and assignments regularly (22 responses).
- The facilitator should support collaborative and cooperative learning by giving teachers the opportunity to make use of the abilities of the other teachers (20 responses).
- The facilitator should provide prompt assistance and help the teachers spot the various online resources available (14 responses).
- The facilitator must be efficient to manage online activities effectively, support face-to-face and online contact and help teachers to complete tasks on time (13 responses).

These findings are consistent with other studies which suggest that effective facilitation skills include appropriate questioning and listening, engaging the learner in the learning process, providing direction and support to learners, and managing online discussion (Salmon, 2000). Thus, the facilitator must be knowledgeable in appropriate online support and have the ability to be innovative and experimental (Berge, 1995). The teachers' comments also demonstrate that the web-based environment should include synchronous communication tools such us chat, voice conferencing, and videoconferencing to improve timely interaction with the facilitator (31 responses). Relative research has shown that online learning activities are mediated by online learning tools (Lam, 2004). Thus, the development of interaction between the facilitator and the teachers is dependent on the facilitator's skills and features of the networked environment.

The results of this work also suggest that the web-based environment should include a forum for collaboration, conversation, discussion, exchange, and communication among the teachers (20 responses). This finding indicates the teachers' interest in collaborative learning components, such as discussion groups which is in agreement with other studies that explored the value of learners' engagement and interactivity in online groups and communities of practice (McConnel, 2006). As far as the web-based environment is concerned, the results of this work reveal that it should allow for uploading, downloading and printing of the materials without delays (29 responses). Relative literature confirms that for an web-based learning environment to be successful, learners must be able to easily focus on learning materials without having to make an effort to figure out how to access them (Chiu et al., 2005; Lohr, 2000).

Another area for improvement frequently asked for by the teachers is the need to increase face-to-face interaction with their facilitators and peers. The present findings reveal that the face-to-face meeting should increase the teachers' capability

of using the web-based environment effectively so that teachers will achieve better results and improve their learning and reflection. Given the lack of experience in distance learning environments, teachers should be given an extra amount of time during the face-to-face meeting in order to become familiar with the web-based learning process. In consensus with prior literature, results of this work suggest that online learning needs to and must be supported by face-to-face interaction, especially at the early stages of teachers' encounter with technology (Kante, 2002). Furthermore, the results of this study indicate that the teachers recognized the need for some extra face-to-face meetings with their facilitator - apart from the introductory face-to-face meeting. These meetings would help the teachers identify barriers to their learning and provide them with effective solutions (24 responses).

In particular, the teachers would like to have two more meetings during the program of about three or four hours each in order to discuss with facilitators and peers, and create a feeling of togetherness (19 responses). According to the teachers, these meetings would be more effective if the facilitator creates small individualized or collaborative activities to fill the teachers' gaps and their personal interests (16 responses). This would reduce the teachers' personal anxieties about their ability to undertake the web-based activities (14 responses). Relative research has shown that face-to-face meetings in the blended learning process allow for social presence and collaboration to be established in blended learning courses (Wiesenberg & Stacey, 2009). As Stacey and Gerbic (2009) noted "the literature to date indicates that attention in the teaching and learning area of blended environments has focused on understanding the aspects of the virtual and physical environments which are valuable for learning and how to integrate them so that they work in a complementary fashion" (p.10).

FUTURE RESEARCH DIRECTIONS

This evaluation study provided information on teachers' perceptions about both pedagogical practices (online learning, face-to-face learning, material relevance, interactivity, etc.) and technical aspects of the web-based environment (reliability, user interface, access to the material, communication tools, etc.), enriched with teachers' satisfaction level of the blended learning program. In the future, further studies taking these findings into account will need to be undertaken in order to investigate how different approaches to the design and the implementation of blended learning models can affect teachers' satisfaction, engagement, and learning. Since many teachers would prefer the convenience offered by distance professional development program without sacrificing the social interaction and human touch evident in face-to-face environments, course designers face the challenge to achieve a right balance between flexible learning options available and high-touch interactive experience. From a pedagogical standpoint, there are various quality criteria that need to be considered to design effective professional development courses. Further research is needed to investigate on:

- The content or the interactions that are best delivered conveyed be online and face-to-face components of a blended learning course.
- The best combination of the pedagogical strategies and the media (synchronous and asynchronous) necessary to address the different needs of teachers.
- The conditions under which teachers are motivated to become actively involved in and take greater responsibility of their own learning in blended learning courses.
- The amount and the type of involvement on the part of the facilitator that can affect teachers' learning and participation in live and online options of a blended course.

Since technology leads to a shift in the facilitators' role from one the sole source of knowledge to be a facilitator of self-paced teachers, many questions are raised on how the facilitator can enhance the quality of off-line and on-line learning and improve peer-to-peer interaction and collaboration.

In terms of the quality of course content and materials, more research is needed to investigate how the visual-textual layout, the navigation aids, and the interactive audio/visual components can be organised in a navigation hierarchy of hyperlinks (e.g., sequencing design, exploration design, indexed design, etc.) to take the advantage of the interactive properties of the Web. Although current learning management systems (LMS) provide us with a number of tools to develop learning environments based on principles of pedagogy, further research is needed to help us identify the strengths and weaknesses of the Web when used in such programs. In addition, blended learning provides us with the opportunity to reach large numbers of teachers from rural areas in a short period of time with consistent, semi personal content delivery, and thus it is essential to take into consideration all the costs associated with these approaches.

CONCLUSION

Blended learning approaches are increasingly transforming teachers' professional development worldwide. Owning to the newness of blended learning in teachers' professional development in Greece, this chapter aimed to identify some factors which may promote successful blended learning programs, drawing on both results of the current evaluation study and the literature on blended learning. The current study found the teachers' high satisfaction with the flexibility and convenience provided by the blended learning program. The training program provided them with the opportunities they needed to remain in their classrooms while using material and resources they might not have had access to in traditional face-to-face training modalities. Not surprisingly, the teachers expressed high levels of satisfaction with the training process and appeared to prefer blended learning modalities to fully face-to-face training programs.

From the pedagogical point of view, the results of this study indicate the program supported the development of the teachers' professional knowledge and skills in multicultural education and bullying in schools. The programs' content provided opportunities for teachers to apply theory and understand theory working with examples and problem-solving tasks. The content also provided opportunities for "hands-on" activities which are integrated into the daily life of the school. These results reinforce the widely-reported teachers' preference for content that meets their professional needs and makes their job more satisfying both professionally and personally (Kante, 2002).

The material of the blended learning program, it consisted of both texts which were related to the program's content and guides for the face-to-face meetings. As far as the material's quality is concerned, this study provides empirical confirmation of the literature regarding the features of materials for distance learning programs (Ally, 2004). The material should be developed according to the program's content and the specific needs of the teachers and also should be well-written and well-organized into the program's modules. Main principles of adult learning (work-related activities, activities that reflect teacher's interest etc.) and the learning theories (behaviorist, cognitive and constructivist strategies) should be taken into account to promote active learning and to foster higher-order thinking and meaningful knowledge (See Figure 12).

As far as the blended learning approach is concerned, the results of this study indicate that the mixture of online self-paced learning with a face-to-face meeting changed their traditional

Figure 12. Features of the material for blended learning
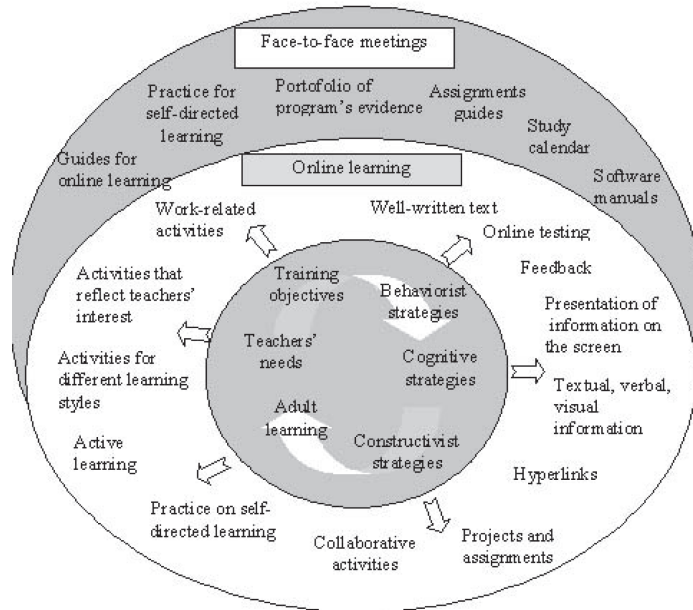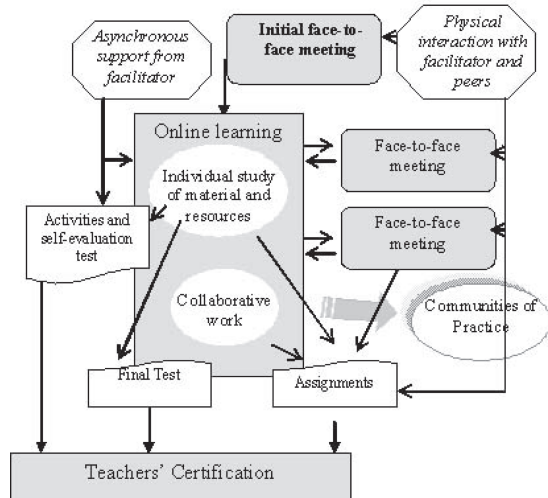

*Figure 13. The model of blended training process*

method of training and enhanced effective learning possibilities. The teachers who participated in the training program did not consider the face-to-face and the online components of the program separately, but as part of an integrated learning environment where the activity into the face-to-face setting have an influence on the online learning.

Thus, the teachers emphasise the need for more regular face-to-face meetings which would help them to resolve issues that arise during the process.

Based on teachers' perspectives, this study provides a model of a blended learning to respond to local teachers' needs of their ongoing professional development. The model, which is presented in Figure 13, involves an introductory 6-hour face-to-face meeting followed by online learning with 2 intermediate face-to-face meetings. This model advice that the online learning should progress for a minimum of 4 months, integrating a combination of individual study of the material, active learning activities, self-evaluation tests, work-related assignments, assessment as well as cooperative learning and collaborative learning. Special emphasis is given in the interaction with facilitators during both face-to-face meetings (physical interaction) and online learning (asynchronous interaction). The importance of the establishment of communities of practices among teachers is also recognized (Garrison and Vaughan's, 2008).

Figure 14. Learning activities for the face-to-face learning environment and the online learning environment
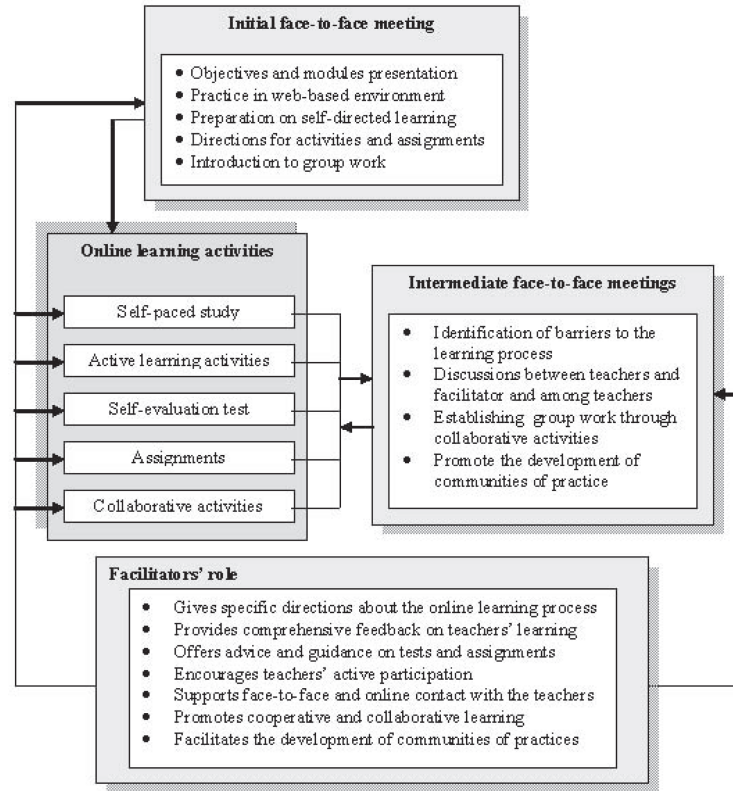
The results of this study provide also some recommendations for designing learning activities suitable for the face-to-face learning environment and the online learning environment. The activities presented in Figure 14, utilize the strength of each environment and add pedagogical value to the blended learning program. Special emphasis is given to facilitators' role. This study also indicate that the opportunity given to teachers to participate in an active and meaningful training process presupposes reliable network access, adequacy of links, pleasing and attractive layout, hyperlinks and hyper media options and synchronous and asynchronous communication tools that enhance various forms of interaction.

To conclude, this chapter explored the impact of blended learning on teachers' professional development through case study carried out by the Ministry of Education and Religious Affairs in cooperation with the National Kapodistrian University of Athens in Greece. As the need and demand for teacher professional development increase, future research is important to identify successful models of blended learning that can be adapted to create effective and flexible ongoing learning experiences in the field of ongoing teachers' professional development.

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