Ανοικτή Εκπαίδευση: το περιοδικό για την Ανοικτή και εξ Αποστάσεως Εκπαίδευση και την Εκπαιδευτική Τεχνολογία

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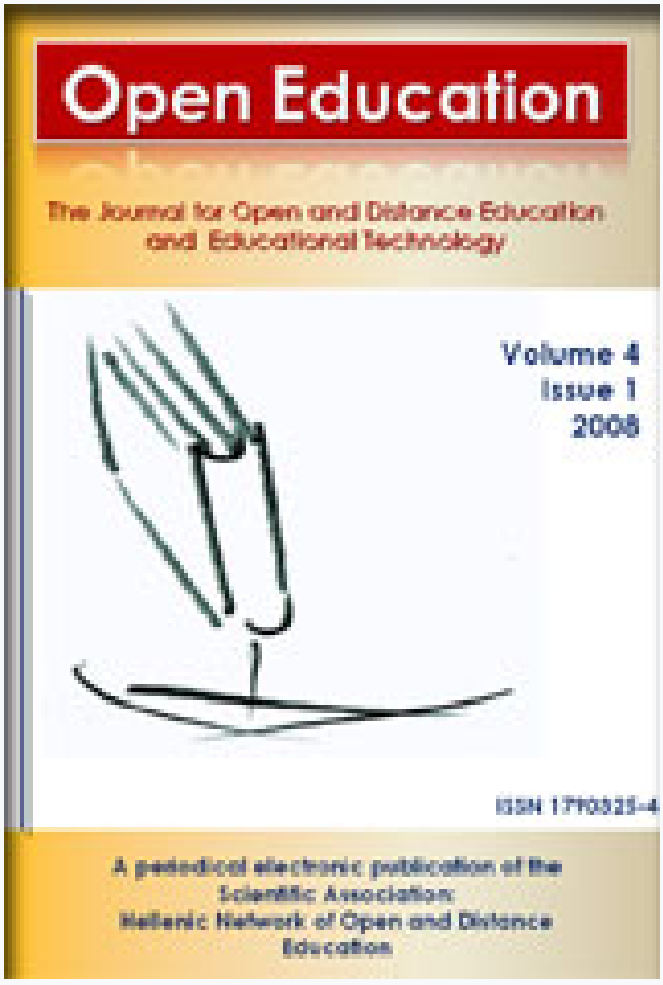

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Blended Collaborative Learning for Action Research Training

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Abstract
This action research study investigated the application and use of a blended collaborative learning model as a vehicle for developing in-service teachers' action research skills in a field-based Master's program. It also explored the roles of the instructor through the lens of the 'four hats' metaphor (Bonk et al., 2001). Research results endorsed the tremendous potential of both the collaborative and blended aspects of the selected instructional approach towards the creation of an interactive community of learners, as well as the development of deeply reflective thinking skills. From the course design perspective, this instructional approach facilitated the transformation of an action research training course to what Laurillard (2002) calls the "reflective practicum". For this transition to occur, three highly significant conditions need be in place and work in parallel, namely the students' own motivation and drive to achieve professional growth as opposed to those students that just wanted to complete the degree; as well as a positive student-instructor relationship, and the instructor's continuous support, input and guidance.

Key words: Blended Learning, Action Research, CMC, Collaborative Learning, Higher Education

Blended Learning

Blended learning courses (also known as *hybrid*) constitute a popular dimension of Web-enhanced instruction, as along an instructional delivery continuum they find themselves right in the middle, between courses delivered fully online, and those that are implemented solely through face-to-face (f2f), traditional instruction. Many definitions exist for *blended learning,* but Graham's (2006) seems to be the one that most accurately reflects the historical emergence of blended learning systems, which originated as a combination of traditional f2f and distributed learning systems. According to Graham, "*blended learning systems* combine f2f instruction with computer-mediated instruction" (2006, p.5). He also goes on to note that this definition "emphasizes the central role of computer-based technologies in blended learning" (p. 5).

Dabbagh & Bannan-Ritland (2005) explain that in the context of a hybrid course, online learning complements classroom instruction, combining online and f2f learning activities. In keeping with the Sloan definition (Seaman, 2003), a course is defined as hybrid/blended when a 30 to 80% of course instructional design and implementation, both on a content and delivery level, are performed online.

But, why blend? Why would any instructor select blended learning over other teaching and learning options? Graham (2006) identifies three major reasons, (1)

improved pedagogy, (2) increased access and flexibility, and (3) increased cost-effectiveness. Osguthorpe and Graham (2003, as cited in Graham, 2006) also include social interaction, personal agency, and ease of revision. In addition, research studies at the Universities of Tennessee and Stanford (Singh & Reed, 2001) have found that blended learning may result in improved learning effectiveness "by providing a better match between how a learner wants to learn and the learning program that is offered" (p. 6).

Finally, let us not lose sight of the fact that blended learning may allegedly combine the best of both traditional and distributed learning, but when instructional design and delivery are not pedagogy-driven, appropriate for a particular learning context, or simply not well executed, then blended learning can also reflect the worst of both worlds.

Let us emphasize that in order to make an informed, pedagogically sound decision as to whether or not adopt blended learning for one's teaching context, an instructor must compare the potential strengths and weaknesses of f2f and asynchronous (not concurrent) online communication, and consider how each type of delivery will serve her teaching and pedagogical goals for her class (Table 1).

TABLE 1.
Strengths and weaknesses of f2f and online discussions (adapted from Graham, 2006)

	Online (Asynchronous) Discussions	F2F Discussions
Strengths	a. Flexibility—student participation takes place at a time and place convenient for the student b. Participation—all students participate due to lack of time and place constraints c. Depth of reflection—students have more time to consider their responses more carefully and more comprehensively	a. Human connection—easy to bond and develop social presence and trust in f2f environments b. Spontaneity—rapid chains of associated ideas and serendipitous discoveries are encouraged c. Participation—not everybody may participate due to time, and personality constraints
Weaknesses	a. Spontaneity—rapid chains of associated ideas and serendipitous discoveries are not encouraged b. Procrastination—students may procrastinate participating online c. Human connection—not as easy to bond and develop social presence and trust online	a. Flexibility—due to time limit, the instructor may not be able to reach the desired depth of discussion

Computer-Mediated Collaborative Learning

Group, and personal communication both between individual students, and between students and their instructor, can occur through a variety of electronic multimedia, including e-mail, synchronous (chat) and asynchronous conferences. In order to be successful in a computer-mediated collaborative learning environment, students are usually required to apply higher order cognitive skills—in particular critical thinking and problem-solving—as well as to discuss and negotiate their individual points of view with the view to arriving at unanimously agreed upon group decisions. Therefore, the potential of computer-mediated collaborative learning experiences appears rather remarkable, and equally beneficial as that of f2f communication, for the development and further enhancement of critical thinking and problem solving skills.

Needless to point out that according to Graham's model (2006), an instructor contemplating to incorporate computer-mediated experiences into her teaching should first compare their potential pedagogical benefit to that of a comparable f2f experience. For instance, some learning activities are more suited to a f2f delivery due to their requiring immediacy and a higher degree of student interaction in order to be successfully executed. Once creating a computer-mediated experience has been decided, the following step surely should be to consider and weigh the associated strengths (flexibility, student participation, depth of reflection) against the weaknesses (spontaneity, student procrastination, human connection), and how these fit into the overall instructional design of a particular class.

Computer-mediated collaborative learning is an instructional strategy in which normally students work together in small or medium size groups toward an as far as possible clearly assigned task while at the same time their effort is supported by various computer-based applications. Social interaction is highly emphasized in this context. In addition, and particularly when collaboration is required within a problem-based learning framework, students must depend on each other to reach the learning objectives (positive interdependence) thus successfully completing the learning task (Johnson & Johnson, 2006). Bernard et al. (2004) have found that active learning (e.g. problem-based learning) that includes (or induces) some degree of collaboration among students appears to foster better achievement and attitude outcomes in asynchronous distance education contexts.

Research documents the effectiveness of collaborative learning for developing problem solving skills in various content areas and grade levels (Chen & Caropreso, 2004; Johnson & Johnson, 1999). From a teaching philosophy perspective, collaborative learning is consistent with constructivism primarily due to the role of social interaction: advocates argue that learners co-construct more powerful understandings than individuals can construct alone (Eggen & Kauchak, 2001).

Hoyles, Healy and Pozzi (1992) report that use of computer-mediated learning environments foster student interaction, thus resulting in successful learning experiences. They also found (1994) that collaborative computer-based tasks can lead to higher-order thinking, hypothesis formation, and reflection—and, by implication, also improve problem-solving skills.

Enhanced social interactions within a computer-mediated collaborative learning environment, can further encourage self-regulated learning (Grabe & Grabe, 2007), as well as improve the overall classroom climate (Slavin, 1995).

Styler and Philleo (2003), and Avgerinou, Carroll, Spelman, & Hanlon (2005) recommended the use of technology to enhance reflective journaling. Based on earlier studies (Larrivee, 2000; Holly & McLoughlin, 1989; Francis, 1995; Hatton & Smith, 1995; Moon, 1999a, & b, as cited in Martin, 2005), Martin (2005) emphasizes the role of reflective (*learning*) journals in teacher education "in order to begin find out who they are as teachers, what values and beliefs underpin their actions" (p. 527).

Action Research Skills

Based on his extensive research studies, Labaree (2003) reports on some difficulties involved in the transformation of educational practitioners into educational researchers in the United States. As he explains, the teachers' own profession makes them ideal candidates to assume this new role. However, between students and their instructors in research training programs, a cultural clash may manifest itself representing the teacher

perspective on the one hand, and the researcher viewpoint on the other.

Unlike others, those involved in the training of teachers as action researchers, are faced with the aforementioned issues to a lesser extent. The underlying reason for this refers to the very nature of action research which happens to focus on and celebrate experiences that are personal, particular, and experiential. This is precisely what McNiff, Lomax, and Whitehead allude to when they advise about "putting the 'I' at the centre of the research" (2003, p. 20). Still, those personal experiences need to be looked at through a different perspective—that of the researcher. According to Mills (2003), educational "action research is systematic inquiry done by teachers (or other individuals in the teaching/learning environment) to gather information about—and subsequently improve—how their particular schools operate, how they teach, and how well students learn" (pp. 18-20). In other words, the primary emphases of the action research paradigm in any given context are "action as a fundamental process of the improvement of practice, increasing understanding about practice in a collaborative group, and improving the situation in which practice takes place" (Kongsak & Phairoth, 2003, p. 2).

Action research originates from a research tradition that emphasizes cyclical, dynamic, and collaborative approaches to investigation (Stringer, 2004). Among the most important features of action research are democratic and reflective participation and collaboration (Borgia & Schuler, 1996; Mills, 2003). Kemmis and McTaggart (1992) suggest four steps in a self-reflective spiral of action research: planning, acting, observing, and reflecting. By implication, the competencies and skills found in the arsenal of an action researcher, involve a compelling power of observation, a well-developed ability for critical, reflective inquiry, but also a strong propensity and an eagerness to collaborate effectively with those partaking in the action research process.

As is the case with other types of educational research, action research projects also necessitate "the ability and willingness to ask pertinent questions, to test assumptions, to ask for reasons and evidence to support arguments, and to engage in systematic thinking about relationships between theory and practice" (Costello, 2003, p. 18).

Returning to Labaree (2003) and the peculiarities experienced by those involved in training teachers to become educational researchers, it is important to mention at this juncture that even those specialized in action research, have to contend with, foster and support a critical transition that occurs in the teacher's conceptualization of her role in her dual capacity as a teacher, and a researcher, and her ensuing appreciation of the classroom experiences as a valuable lens for systematic exploration and discovery.

Background and Context of the Study

In an attempt to support, enhance and ultimately improve instructional design and delivery of action research theory and practice in a higher education context, Part One of this study (Avgerinou & Carter, 2005) investigated the application and use of a blended collaborative learning model as a vehicle for developing in-service teachers' action research skills in a field-based Master's program (FBMP). The particular FBMP is designed for certified employed education personnel wishing to complete a Master of Arts in Teaching and Leadership. Offered in cooperation with the Professional Development body of a large publishing house, the program is designed to provide the semester hours and student contact time of a conventional campus-based master's degree program in education under conditions convenient to practicing educators. In other

words, college instructors deliver graduate courses at the school site or district where the FBMP participants are employed as full time teachers. Students complete thirty-two semester-hours over a two-year period, while continuously applying what they learn to their lesson plans. The sequence of courses allows them to become practitioners that are more effective and better prepared to make curriculum decisions based on educational research and theory. The FBMP provides a strong foundation in significant educational research on effective schools and effective teaching. It also provides guidance on how this research is applicable to the teaching and learning process. As a result, action research lies at the foundation of the FBMP curriculum, setting one of the most significant goals of the program—that of producing teacher researchers.

Although the overall blended, collaborative approach adopted in Part One of the study, was without doubt successful in supporting, facilitating, and enhancing student learning, there was no significant indication that in particular the blended aspect of the selected instructional delivery method was effective in developing the action research skills of participating teachers. Meanwhile, it was strongly speculated that classroom tone and climate, sense (or lack thereof) of learning community, a latent quasi-distance learner identity, as well as extraneous factors were also in operation and to some extent could account for this finding.

As a result, Part Two of the study focused on implementing a teaching intervention which was determined and shaped by the aforementioned baseline data analysis results. The context of the study was the introductory semester of a new FBMP cycle that involved 54 in-service teachers with at least 2 years of in-service experience. None of those teachers had had formal research training prior to their FBMP studies, while the majority was very well versed with technology (advanced word-processing, power-point, web-communication skills) and only about one third of them possessed basic computer skills (word-processing, power-point, email). Participants were attached to three distinct school districts, and had therefore formed three FBMP groups that were geographically dispersed in the state of Illinois. One group (20 members) was located in the FBMP parent university's close vicinity (25 miles away). For the purposes of this study, this group is coded as *Site 1*. Another group (18 members) was located about 36 miles away from the university. This was coded as *Site 2*. The remaining group (16 members), *Site 3*, was about 64 miles away from the university's main campus. For the ten weekly meetings of the Fall Quarter, all three sites were equally exposed to a collaborative blended approach which was based on a combination of f2f and online teaching delivery, and involved a project-based collaboration of the site participants. There was no collaboration among individual research members, or groups of different sites. The author was the research instructor and advisor of all three groups.

Research Goals and Questions

The study sought to explore the effects of using blended collaborative learning in the FBMP to support, enhance, and monitor the initial action research training of participants. On a secondary level, it addressed and examined various factors operating in favor or against the creation of an overall effective learning experience; as well as the different roles of the instructor through the lens of the 'four-hats' metaphor of pedagogical, social, managerial, and technical actions (Bonk, Kirkley, Hara, & Dennen, 2001; Maor, 2003).

Accordingly, the study attempted to address the following research questions:

1. What are the effects of using blended collaborative learning in the initial action research training of FBMP participants? (primary question)
2. Which learning-related conditions are most conducive toward the transformation of teachers to teacher researchers in a blended collaborative learning environment? (secondary question)
3. What is the role of such factors as classroom tone and climate, sense (or lack thereof) of learning community, awareness (or lack thereof) of quasi-distance learner identity, as well as any curricular and/or administrative factors operating outside the instructor's locus of control? (secondary question)
4. How does the 'four-hats' teaching metaphor operate in the blended collaborative learning context of the FBMP? (secondary question)

Methodology

From a methodological standpoint, Part One of the study was qualitatively different from Part Two in that it was more evaluative in nature. Part Two was designed and executed as an action research study. The action research paradigm followed in this case, was based on Kemmis and McTaggart's model (1992) of self-reflective spiral involving the four main steps of planning, acting, observing, and reflecting.

As in Part One of the project, a predominantly qualitative design was adopted for data collection and analysis. It was hoped that this design could possibly introduce such criteria as classroom tone and climate, sense (or lack thereof) of learning community, distance learner identity, any program-related curricular and/or administrative factors that were however outside the teacher's locus of control, as well as types of delivery such as traditional f2f, and online teaching, as distinct variables against which both student perceived and actual performance would be assessed and analyzed, and ultimately shed light on the effects of the blended, collaborative learning approach on the action research training of the participating teachers.

Data was triangulated from (a) personal notes (based on instructor's class observations and reflections); (b) weekly online reflection journals (produced by students); (c) student formative (weekly f2f class brief discussions, and personal student/instructor communications), and summative (mid-term, and end-of-course) evaluation reports, (d) as well as student final research papers; (e) and course grades. Analysis of the data employed the content analysis technique for all aforementioned instruments but course grades.

Internal Generalizability

The purpose of this action research study was to explore and understand the effects of the collaborative blended approach on the initial action research training of the participants, instead of trying to represent a larger population or emphasizing study replications (McMillan, 2004). Therefore, *translatability* and *comparability* are more appropriate than external generalizability in support of the external validity of this study. In other words, the research focus has been to provide an in-depth description of the data so that a better insight into the aforementioned phenomenon could be gained, while at the same time the research findings could be communicated in ways that are personally meaningful and relevant to those operating in similar web-based instructional

environments. According to Maxwell (1992), generalizability within the community that has been studied (*internal* generalizability) is more important to qualitative researchers since their studies typically do not make claims about the external generalizability of findings.

Educational Significance

As in Part One, the educational significance of the study was twofold. First, it was anticipated that student feedback would help guide the instructional design and implementation of future research courses. Second, analysis of the research findings was likely to determine any underlying patterns or issues in need to be addressed in order to improve and further enhance not only the research component of the FBMP, but also this instructor's understanding and execution of her own teaching practice.

Procedure

Learning Objectives of Introductory Course

During the first FBMP phase (*introductory course: facilitating action research training*), the learning objectives consisted of the student becoming aware of the salient educational research methodologies, while focusing in particular on action research in school settings. Another major learning objective that underpinned this phase was to identify the research problem and describe its context, as well as to acknowledge and discuss the extent of the problem through review of professional literature.

Developing Action Research Skills

In order to develop in-service teachers' action research skills, four research courses are taught throughout three inter-related, yet qualitatively distinct phases of the two-year FBMP program. The contribution of the instructor is instrumental in all three phases in that she needs to assume different roles depending on the learning outcomes and student needs in each one. For phase one (introductory course), the instructor acts as a facilitator of the students' training in action research. During this phase the instructor helps develop student knowledge, and deepen understanding of action research. Students are called upon to develop their research skills by seeking, finding, and evaluating various information resources. The development and application of problem-solving skills are emphasized in this phase with particular reference to the ability to effectively identify the research problem to be investigated.

While a variety of action research skills are utilized in one phase or another, there are some skills that span the entire process. These skills are critical to each of the phases. From the outset of the first phase students began to work in groups based on common problems. It was repeatedly stressed to them that collaboration, accountability, and the ability to manage time were crucial to their teamwork. To illustrate the above point, during the first two weeks of the course, the instructor projected short video-clips with informal interviews of past FBMP students. Those students would be sharing their experience and wisdom on various aspects of their research studies, including time management, significance of selecting the right team and subsequently supporting their choice, significance of selecting an interesting research topic, understanding oneself as an action researcher, etc. Incidentally, these short video-recordings which were very well received by the students, were introduced to Part Two of this study as a result of Part One recommendations toward the improvement of classroom tone and climate, and the creation of a sense of learning community.

In addition, students needed to be able to critically look at various situations, as well as information generated mainly through their literature searches, and effectively communicate observations to team members. Finally, students were encouraged to reflect upon, and evaluate their own progress through all three phases. This allowed them to pace the work accordingly, create realistic deadlines, and meet them successfully. It also helped them monitor and evaluate their own professional growth as teacher researchers.

Introducing Blended Collaborative Learning

As in Part One, blended collaborative learning was introduced at the introductory course, *Introduction to Research.* Collaboration was required both at a group, and a whole class level, and was facilitated via f2f and online (mostly asynchronous) class meetings. Students were asked to form research groups which, sharing the same research interest and focus, would develop and execute an action research project for the following two years and until the end of the FBMP studies. However, it must be noted that they were allowed to work independently in case no common research interest could be identified. At the same time, they were asked to systematically discuss and reflect upon course-related issues with the entire class, not just their research group collaborators.

A significant role of this whole-class type of online, asynchronous collaboration was held by the reflective journals that the students had to post on Blackboard on a weekly basis. Weekly prompts provided by the instructor, were semi-structured in that they helped students focus specifically but not exclusively on issues of both content, and process related thematically to weekly f2f class meetings. The journals could consist of the student response to the weekly readings; their questions, fears and/or concerns with regard to their own study progress but also their group dynamics and communication; their thoughts, ideas and/or suggestions concerning the literature, their research project, the instructional modus operandi of the class, etc. Those journals were posted in the group Discussion Board, that is, an open forum that fosters and supports a collaborative community of learners. Student postings remained published in the Discussion Board area until the end of the course.

The f2f interaction aspect of the blended model consisted of regular class meetings between students and the instructor with the latter visiting the former at their off-campus locations. Furthermore, on few occasions the students requested and were granted out-of-class meetings with the instructor. Often the students would be engaged in other FBMP courses while continuing to collaborate with the instructor and their colleagues on the action research process. A computer-mediated course communication (cmc) and management system (Blackboard) was utilized in order to bridge the gap between courses, and to provide the support needed as the action research skills were being developed. In essence, Blackboard represents the online aspect of the blended collaborative environment.

During the first two weeks of the introductory course, the students participated in platform orientation and training delivered by the instructor. The pedagogical rationale underpinning the platform's use was emphasized and explained in detail. Connections were made between all sections of the class syllabus, and their corresponding Blackboard area(s). Students were first exposed to an overview of the class design, expectations, and modus operandi (online and f2f), and subsequently had the opportunity to navigate and discuss it step-by-step under the guidance of the instructor, and the provision of associated instructional material (syllabus, and project handbook). The *quasi-distance*

learner role that blended learning participants automatically assume, was thoroughly considered. Students were informed as to how, and in what ways their participation in a blended course would differ from what they had typically experienced in traditional, f2f courses. In particular, students became aware of the advantages and disadvantages of the online aspect of the blended experience and communication, and its potential effects on their motivation, and performance. The impact of communicating online in the cognitive and affective domains was discussed and illustrated with various examples from the research literature, as well as the instructor's own experience in online teaching and learning.

Advantages for using the Blackboard platform as extensively as required by the introductory research course, were also identified and justified on the basis of a subsequent totally online course on instructional technology that the students would attend at the end of their first year of FBMP studies. Instructional material related to Blackboard, as well as answers to frequently asked technical questions were distributed to students in both hard, and electronic copies. As time progressed, students' use of Blackboard became more confident and more project specific. The students located specific course documentation such as instructor's weekly slideshow presentations and other lecture material through the *course documents* area. The platform also offered the students a means to communicate online (sync- & asynchronously) with the instructor and the rest of their group through the *discussion board*, *group*, and *virtual classroom* areas.

Access to online web-liographies was available through the *external links* area. Students were able to check the instructor's feedback, formative and summative, through the *user tools* area. The location of weekly tasks was possible through the *assignments* area. Course readings were available to download through the *assignments* and *external links* areas. Students shared formative course evaluation and presented virtual posters through the *discussion board*. Students were also able to locate general course documentation such as syllabus and schedules, through the *course information* area. Students could submit draft or final papers through the *user tools* area in the *digital drop box*.

As mentioned earlier, student feedback on the instructional use of Blackboard was invited frequently and through a range of media. Student feedback was instrumental in guiding the instructor's decision-making with regard to maintaining balance between the f2f and online aspects of the collaborative learning model.

Research Findings

Overview

As mentioned in the discussion of Part One (Avgerinou & Carter, 2005), when discussing the development of action research skills, one could safely assume that there can be a clear distinction between a basic set of skills and a higher level of understanding. The latter is based upon a student's ability to critically reflect upon and internalize the process, and the willingness to develop an expanded, more comprehensive view of their professional role, responsibility, and mission in the broader professional arena. Such a high level of understanding would be manifested through effective communication and systematically collaborative efforts; application and use of a variety of accountability mechanisms—including monitoring and evaluation of progress (self and team), and the ability to manage time by development of viable timelines and meeting them

successfully.

Research results endorsed the tremendous potential of both the collaborative and blended aspects of the selected instructional approach towards the creation of an interactive community of learners; as well as the development of deeply reflective thinking skills—the sort of which is particularly conducive to the understanding and implementation of action research. From the course design perspective, the blended collaborative approach facilitated the transformation of an action research training course to what Laurillard (2002) calls the "reflective practicum".

It would appear that in order for this transition to occur, three highly significant conditions need be in place and work in parallel, namely the students' own motivation and drive to achieve professional growth as opposed to those students that just wanted to complete the degree; as well as a positive student-instructor relationship, and the instructor's continuous support, input and guidance. This is congruent with Liu's et al. (2005) related to learning factors, namely, instructor support and mentoring, and student-instructor interactions.

As already speculated in Part One of the study, the presence (or absence), and nature (i.e. positive/negative) of the following factors was indeed significant in creating the above mentioned conditions:

- classroom tone and climate
- sense of learning community
- awareness of quasi-distance learner identity
- curricular and administrative factors operating outside the instructor's locus of control

Finally, with regard to the 'four-hats' teaching metaphor (Bonk et al., 2001; Maor, 2003)—namely pedagogical, social, managerial, and technological—it was apparent that all four dimensions were to some extent reflected in this instructor's engagement with the introductory FBMP action research class.

Student Motivation and Drive

Following Labaree's observation (2003) mentioned earlier in this paper (under *Action Research Skills* section), research data can confirm that students who attained the higher level of action research skills, were at the same time those that had the least difficulty in perceiving their teaching as a theory test bed, and themselves as theory builders, and agents of change committed to educational improvement beyond their studies, and even beyond their classrooms. Those students were less performance-, and more knowledge-oriented. This was evident throughout their performance and associated learner profile, emerging especially through their online reflections which were more self-searching and critically introspective, and less addressing the instructor's probes just for the sake of answering them.

> *I am in agreement with those who believe that teachers, or those worth their 'salt' anyway, have to be constant researchers. But I also have learned from this class, the difference between the research we do daily to reach each of our students, and the action research that we are becoming more immersed in each week. I hope that our Action Research will not only affect my classroom or my colleagues' classrooms, but our entire district. My principal walked into my room after school the other day while our group was sitting around the computer, loudly debating some detail for our Chapter One, and asked us when we would be applying to the*

district to get the project started. How great is that that he is excited too?! (Anonymous, Week 9 reflection)

I feel, sort of, how Dorothy from the Wizard of Oz must have felt when Glinda says to her, 'You've always had the power to go home!' I think, in essence, I've always been a teacher/researcher as evidenced when trying new ideas that I think will work with certain students, or using the internet, library, or teacher resources to research different materials and topics. This project, of course, is a lot more involved and intense. However, I find myself getting excited when I find information that 'fits' what we're researching, and I look forward to implementing that research to improve (hopefully!) classroom performance. (Anonymous, Week 9 reflection)

The overwhelming majority of Sites 1 and 2, followed by only one third of Site 3 falls under this category. Awareness of quasi-distance learning identity, positive classroom climate, and strong sense of learning community seemed instrumental in helping students of Sites 1 and 2 maintain their motivation, their focus on and satisfaction with the research process, and a generally positive outlook on the course.

Student-Instructor Relationship

The student-instructor relationship proved a very significant factor toward the successful completion of the introductory course. Those students who came to recognize the multitude of roles that this instructor was called to play f2f and online within the context of this class, and appreciate her constant support, input, and guidance, were the ones who created a stronger bond with, and developed greater trust in the instructor as early as mid-term in the introductory course. Consequently they were willing to communicate on a weekly basis (f2f and online), and work very closely with the instructor in order to get rid of their initial—"overwhelming" and biased— pre-conceptions of what educational action research was about. As a result, they became confident in their own research abilities earlier than others, but also they came close to appreciating the true nature of action research way before they even implemented their own interventions. The aforementioned findings are congruent with various research studies indicating that personal teaching efficacy (Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998), modeling (Bruning et al., 2004), and enthusiasm (Patrick, Hisley, & Kempler, 2000) are key factors toward increasing student motivation, and academic achievement.

As emerged from the analysis of instructor's personal notes, student weekly reflections, student formative and summative evaluation reports, all students from Sites 1 & 2 developed a good rapport with the instructor via both online and f2f means of communication, whereas the same was the case for only a few students from Site 3. The latter were also working independently on their projects. The majority of Site 3 students would not communicate with the instructor unless they had to, would not share their research concerns with or seek the instructor's advice on their research ideas, and would complain about the research class to other, non-research related FBMP instructors. Apart from a possible personality clash between the instructor and Site 3 participants, another plausible reason as to why Site 3 did not respond as positively to this instructor as the other two sites, could be associated with those students' inability and/or unwillingness to perceive themselves as quasi-distance learners within the context of this hybrid class.

Other possible reasons accounting for this behavior, could include the lack of strong sense of learning community, and an associated ambiguous and thus ineffective classroom tone and climate. The fact that other, non-research related teachers of the FBMP were interfering with the operation of the research classes, and in a way attempting to mediate the relationship between students and the research instructor, was not helpful either. Finally, the instructor's own initially positive demeanor toward Site 3, was perhaps negatively affected by the students' lack of response, which in turn impaired effective communication between instructor and students.

Blended Collaborative Learning

As expected, students' reactions to the blended collaborative model of learning—particularly as this was implemented via Blackboard—ranged from apprehension to liberation. The majority welcomed the use of Blackboard as a shared, portable, and accessible resource. The "anytime, anywhere", student centered, customized ("just for me") type of instructional approach (Avgerinou, 2002), proved as appealing an option to these students as it is usually for online course participants. Through Blackboard's *discussion board* facility which supplemented and extended face-to-class discussions, transcending temporal and spatial barriers, students had the opportunity to explore and probe deeper in research-related issues. Having been exposed to the instructional material discussed each week in class, they would subsequently go online to focus, truly engage with and critique it, but also they would reflect upon their own journey and transformation to teacher-researchers. Posted in Blackboard's asynchronous conferences, student weekly reflections were accessible and shared by the entire class. Formative and summative student feedback indicates that sharing their online reflections helped them ease various concerns regarding for instance their understanding of class content, their progress with their own projects, and their overall class performance, simply because other people's reflections attested to the fact that everybody was faced with the same or similar issues, thus experiencing the same or similar concerns and feelings.

It is worthwhile mentioning here that personal journal methods have been successfully employed in distance learning in order to monitor learners' progress and well-being (Mann & Stewart, 2000). Moreover, as far as the use of online journals is concerned, there is a growing body of research evidence indicating that some people can become profoundly reflective in the process of recording their virtual performance by means of a computer (Avgerinou, 2002). As it is out of the scope of this paper to delve into the host of reasons justifying such findings, it would perhaps suffice to acknowledge that:

> This ability of the computer to reflect a person back to themselves opens up the possibility that for some individuals CMC journals may be an ideal method to generate rich data about the subjective self, a self assessed in what may be experienced as an almost transparent process of relating to one's own consciousness (Mann & Stewart, 2000, p. 95).

However, it should be also noted that based on student evaluations and reflection journals generated by the group located at the furthest location away from the university (Site 3), Blackboard's potential for communication was constantly being received with some skepticism. Again, an inability or unwillingness to understand themselves as quasi-distance learners could account for this fact.

I have learned that i need more communication in person than online. I think it is great that we are able to use the computer/internet but I miss having classroom discussions and turning in a piece of paper at times. (Anonymous, Week 5 mid-term feedback)

Generally speaking, students with basic technology skills felt that introducing Blackboard at this stage in the FBMP program meant a steep learning curve for them. Nevertheless, by the middle of the course, the majority from all three sites was able to see the benefits and for that, they were prepared to invest extra effort in their technical training. Interestingly, and in sharp contract to Part One's results, Site 3 contained considerably more resistant students to truly understanding the underpinning rationale, and subsequently exploring the platform's instructional and communication potential. It was intriguing to observe those students' resistance to Blackboard despite the fact that Sites 1 and 2 contained a few older students who usually possess poor technology skills. Thus, by default it is usually this type of student that projects strong resistance to any instructional integration of technology.

The strong collaboration element of the selected instructional delivery was valued by all three groups. Students were appreciative of the opportunity to systematically exchange ideas and concerns with not only their research group collaborators, but also the entire class and the instructor. Again, Site 3 proved to be the one with the most independent research projects, and the least collaborative student effort in general. Classroom tone and climate, and a lack of strong sense of community may account for this behavior. Reading other people's weekly online reflections proved to make a positive impact on those students' psychology since they would realize that everyone was going through the same issues. However, those students would not respond to each other, nor interact online as much as students of other sites, which was an indicator of their low sense of belonging to a learning community, but also a predictor of their achievement of class objectives. This finding is supported by Liu's et al. (2005) research literature review suggesting that levels of interaction and class interactivity are good predictors of learning outcomes.

Understanding Action Research

To further complicate the introduction of the idea of blended, collaborative learning, it is imperative to note that the idea of research was overwhelming to the students. The students had only finished one of their other courses prior to the Introduction to Research class. This course was practical and hands-on. There was a clear beginning and end to the course. On the other hand, Introduction to Research was just the beginning of a series of research courses that would lead to their final product—the thesis. The end was at such a distance that many students had difficulty conceptualizing that a process as massive as that could be broken down into small enough increments that they could be successful.

Most students came into the problem-solving portion of the class with a solution that was appealing or interesting to them. When asked to identify the problem or the focus of the study, the instructor was needed to lead and probe with questions that caused the students to take a more critical view of their classroom situation. Even though the introduction of this problem solving skill could be considered rocky, all students were able to successfully and effectively identify a focus for their study. Direct f2f, physical contact with the instructor was considered critical towards the achievement of this goal.

It is worth mentioning here that although students of all sites were in need of teacher help and support in understanding action research and their roles as teacher-researchers,

the idiosyncratic learning profiles of the three sites determined the type of instructional strategies implemented at each one. Generative strategies were mainly selected for Sites 1 and 2, while supplantive strategies were deemed more appropriate for Site 3. According to Smith and Ragan's descriptions (2005),

> generative strategies and open learning environments are those approaches in which learners encounter the content in such a way that they are encouraged or allowed to construct their own idiosyncratic meanings from the instruction … In other words, learners "generate" the preponderance of information processing during learning by providing much of the events of instruction themselves. Such instruction has low levels of scaffolding (instructional facilitation) (p. 141).

As for supplantive strategies,

> This instruction, as compared to generative instruction, tends to supplant …, facilitate, or scaffold more of the information processing for the learner by providing elaborations that supply all or part of the educational goal, organization, elaboration, sequencing, and emphasis on content, monitoring of understanding, and suggestions for transfer to other contexts (Smith & Ragan, 2005, p. 142).

In this instructor's view, from a curricular perspective, the position of this course in the sequence of research courses was not particularly effective precisely because it essentially required that students run before they were able to walk! However, since this factor was outside the instructor's locus of control, she had to help students develop their understanding of action research, develop some associated skills, and transfer them to a real action research project all during the introductory research course. A very steep learning curve was required of all students, but also a multi-faceted commitment to teaching within this context was required on the part of the instructor.

The Instructor's Roles

Four, key dimensions of the online instructor have been identified by Bonk et al. (2001), and Maor (2003), namely pedagogical, social, managerial, and technological. The *pedagogical* aspect is manifested through the instructor's assuming the role of facilitator or moderator, e.g. ask questions, probe responses, encourage student knowledge building and linking, summarize or weave discussion, and support and direct interactive discussion, design a variety of educational experiences, provide feedback, referring to outside resources and experts in the field. The *social* aspect is manifested through the instructor's creating a friendly and nurturing environment or community feel, exhibiting a generally positive tone, fostering some humor, displaying empathy and interpersonal outreach (e.g. including welcoming statements, invitation, and apologies), and personalizing with discussion of one's own online experiences. The *managerial* aspect is manifested through the instructor's coordinating assignments (e.g. explain assignments, set plans for receipt of assignments, assign partners and groups, set due dates and extensions for assignments), managing online discussion forums (e.g. set pace, focus, agenda), and handle overall course structuring (e.g. organize meeting times and places, set office hours, clarify distributions). The *technological* aspect is manifested through the instructor's assisting with user technology and system issues, diagnosing and clarifying problems encountered, notifying when a server is down, and explaining limitations.

All four dimensions were to some extent reflected in this instructor's engagement with the introductory research class. For each of the roles, student data indicated that the instructor was/had:

1- *Pedagogical*: knowledgeable about the subject; passionate about educational research; enjoying doing her own research; open to suggestions; providing timely feedback; well-prepared; providing a step-by-step approach to research; providing very detailed lessons; challenging student understanding; caring about student success
2- *Social*: enthusiastic and excited about teaching research; personable, friendly, and approachable; using humor and making learning experience fun and enjoyable; good communication skills; willing to help create and sustain a community of learners
3- *Managerial*: flexible; organized; available online and off line; helpful and supportive, oftentimes going beyond and above; clear expectations; providing clear examples and guidelines; understanding the professional lives of the students; using helpful instructional material; organized class time so as to be spent efficiently and effectively
4- *Technological*: technologically savvy; creating and using multi-media presentations; guiding and supporting student technology training

These findings were congruent with students' reports on the introductory course's main strengths, namely: (a) challenging yet supportive; (b) use of Blackboard in sharing online reflections, but also facilitating group communication and collaboration; (c) provision of good instructional materials, and resources; (d) building confidence in understanding and applying research; (e) step-by-step, well structured, and organized approach; (f) building of group collaboration and cohesiveness; (g) instructor continued support and involvement in and outside classes.

The Impact of the Research Study on the Instructor

Ever since its publication, the recent, and particularly significant 'How people learn' study (Donovan, Bransford, & Pellegrino, 1999) has provided a framework that alongside the social constructivist philosophy, has guided and shaped my teaching graduate students, that is, adult learners who have been education professionals. In particular, I would like to mention the following principles and recommendations as adapted from the aforementioned source:

1. teaching must be learner-centered
2. to provide a knowledge-centered classroom environment, attention must be given to what is taught (information, subject matter), why it is taught (understanding), and what competence or mastery looks like
3. formative assessments are essential in helping the teacher understand students' preconceptions, and where the students are in their cognitive process of the material, thus design instruction accordingly. Formative assessment helps both teachers and students monitor progress.
4. learning is influence in fundamental ways by the context in which it takes place. A community-centered approach, opportunities for contact and support are very important
5. teachers need time and incentives to reflect on their practice, as well as opportunities to use that time to learn about new research
6. for teachers to change their practice, they need professional development opportunities that are in-depth and sustained
7. technology programs or computer-based curricula should be aligned with the

principles of learning for understanding. Those programs or curricula should go beyond being add-ons of factual information or simply provide information in an entertaining fashion

From my philosophy of teaching perspective, this class has been no different in terms of how I conceptualized it during both Parts One and Two of my research. However, the new element in my approaching and executing the design and delivery of the introductory course (Part Two), was that I had carefully considered the research findings and respective recommendations of Part One. Realizing that my teaching from decision-making to implementation and evaluation, were research-based and data-driven without doubt gave me more confidence in my own ability to help the students make the transition from groups to teams, and from teachers to teacher researchers.

My teaching behavior was definitely enhanced by the whole process, and its outcomes. I came to understand that no matter how good, well prepared, or experienced the teacher is, or how carefully s/he has designed the instructional environment and its events, it is always difficult to predict group rapport, collaboration, and their dynamics. It may sound like a cliché, but I am now more accepting of my own limitations, what I can and cannot do as an instructor (online and offline).

Another realization refers to technology integration for instructional purposes. Since technology-based learning may not be appropriate for everybody's learning style and needs, and yet at the same time opportunities for the professional development of teachers in technology are the current trend, I feel that blended learning—for all the reasons already discussed here, and if designed carefully—may represent a less threatening instructional approach for the student.

Finally, and as far as teaching action research in particular is concerned, I am more than convinced that the blended learning approach has enormous potential for supporting not only group communication and rapport (once this is established), but also for developing student reflective skills, as well as a promoting and sharing a good-practice mentality among all those participating in personally meaningful ways in the online conferences. Consequently, I am prepared to invest more time and effort in teaching via the blended model, and also planning to continue my research on this front.

Discussion and Conclusions

Basic technology knowledge and skills seemed to be an important factor toward student embracing the blended collaborative learning approach. Although at the outset of the course one third of the students (i.e. those with basic technology skills) came to experience a steep learning curve technology-wise, in the end they all appeared to not only have become confident in using Blackboard's conferences, but they also seemed to endorse the great educational potential of the platform. A critical factor in changing student attitude about online assignments (reflections) was the instructor's constant help and support toward familiarizing the students with the technology, but also the students' own perception about the level of their cohort's (and later on, research group's) cohesiveness. Since the students were used to a collaborative learning f2f class format, they were inclined to try extending this opportunity online through Blackboard's discussion board. As a result, when weekly reflections were produced and shared through the online conferences, the students would experience comfort, affirmation, and reassurance for a variety of reasons, the most important one being the realization that: (a) the nature of everybody's project was evolutionary; (b) other students were experiencing

similar situations; (c) their project was on the right track; (d) their group was very supportive; (e) they could share their newly found interest in research; and (f) it was 'okay' to feel frustrated and overwhelmed.

From the teacher's perspective, collaborative blended learning proved consistent with the constructivist course framework primarily due to the role of social interaction. According to Eggen and Kauchak (2001) learners co-construct more powerful understandings than individuals can construct alone. This was particularly true in this case, as students not only were completely novice to the course content, but as is often the case with teachers and educational research (Labaree, 2003) they had entered the course with negative pre-conceptions about educational research, as well as their ability to engage with any aspect of it. Nevertheless, collaborative learning online did not allow for the student biases and/or sentiments of stress and dejection, to grow and taint further student understanding of research. To the contrary, the majority of students were able to transfer online their sense of belonging to this community of learners who explored new ground and eventually built together a solid understanding of the theories and concepts of educational research. And, perhaps most importantly, through this constructive learning environment students gained confidence and pride in their own research abilities. Besides, as Avgerinou and Carter (2005) point out "In keeping with the philosophy of action research, collaboration within a learning community is one of the fundamental skills that need to be developed signifying that the researcher has been fully immersed in the process" (p. 27).

An important aspect of this introductory research course was the requirement of the student applying critical thinking and problem solving skills in identifying and selecting an action research focus or problem upon which they also had to conduct a preliminary literature review. In other words, not only did students need to identify their focus of investigation, but they also had to seek, find, and evaluate various information sources that related to it. Daunting as this task may seem especially if required of novice researchers in such a short period of time, all students accomplished this goal promptly and successfully. Data analysis results confirmed that students' explanation as to why and in what ways they were able to arrive at producing high quality coursework, was powerfully co-related with their weekly reflections posted on Blackboard. As stated above, students were strongly encouraged to reflect upon, and evaluate their progress throughout the life of the course. Moreover, the fact that weekly reflections were an integral part of the course assessment, seemed to increase student motivation to do well on the course. This aspect of the course set up apparently allowed them to pace the work accordingly, create realistic deadlines, and meet them successfully. Students also reported that frequent and constructive feedback provided by the instructor, as well as her expertise, passion and enthusiasm for action research, were great motivators for them to meet the instructor's high expectations particularly as far as practicing self-reflection was concerned. Interestingly, students identified as one of the course strengths that they were constantly challenged to question assumptions, and to make sound research decisions.

Recommendations

Outcomes of the intervention as this was implemented during Part Two of this study were completely aligned with, and thus strongly corroborated teaching recommendations which were derived from the research findings generated during Part One (Avgerinou & Carter, 2005). Those were:

a. Spend more time on creating a learning community prior to identifying the research focus or problem that each group would be working on.
b. Spend more discussion time on research methodologies, topics, and group formation
c. Provide examples of how action research assists in-service teachers in their classrooms.
d. Foster more collaboration amongst groups in order to develop ideas, edit papers, etc.
e. Keep a course management system (e.g. Blackboard) strongly integrated in all research courses, but do not assume that all students possess high technology literacy skills.
f. To encourage further reflective analysis, introduce additional oral weekly reflections at a relaxed, not-class-like setting
g. Raise student awareness of their quasi-distance learning role and characteristics; discuss and explain what can and cannot be expected within that context.
h. The instructor herself must strive to become a reflective practitioner so that quality learning online can be materialized and sustained throughout the life of the course.

Further research regarding the effect(s) of blended learning on the acquisition and development of action research skills in in-service teachers, could perhaps investigate in depth the research instructor's perceptions of their own roles in a blended course environment, as well as the challenges the instructor may face in fulfilling those roles. Student perceptions of their own, but also the instructor roles should also be visited. A qualitative, case study-like methodological design would help explore in detail the aforementioned issues. Introducing a variety of teaching styles and associated blended environments with different degrees of "blendedness", would be particularly interesting to study while at the same time it could potentially improve the generalizability of the research findings.

References

Avgerinou, M. (2002). Rediscorvering learning identity in online instructional environments: My case as a visual, field-independent, and reflective online learner. In R.E. Griffin, V.S. Williams, & L. Jung (Eds.) *Visual literacy in message design* (pp. 43-55). Loretto, PA: International Visual Literacy Association.

Avgerinou, M.D., Carroll Kelly, M., Spelman, M.V., & Hanlon, K. (2005). Blended pedagogy research: Pathways for developing problem-solving reflective practitioners. In M. Simonson, & M. Crawford (Eds.), *28th Annual Proceedings: Selected Papers Presented at the 2005 Convention of the Association for Educational Communications and Technology. Volume 1: Research and Development* (pp. 18-28). Miami, FL: AECT/Nova Southeastern University.

Avgerinou, M.D., & Carter, C. (2005). *Blended collaborative learning as a vehicle for developing in-service teachers' action research skills.* Paper presented at the American Educational Research Association Conference, Montreal, Canada.

Bernard, R.M, Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P.A., Fiset, M., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research, 74*(3), 379-439.

Bonk, C., Kirkley, J., Hara, N., & Dennen, V. (2001). Finding the instructor in post secondary online learning: Pedagogical, social, managerial, and technological location. In J. Stephenson (Ed.) *Teaching and learning* online: *Pedagogies for new technologies* (pp. 76-98). London: Kogan Page.

Borgia, E.T., & Schuler, D. (1996). *Action research in early childhood education.* University of Illinois at

Urbana-Champaign: ERIC Clearinghouse Elementary and Early Childhood Education.

Bruning, R.H., Schraw, G.J., Norby, M.M., & Ronning, R.R. (2004). *Cognitive psychology and instruction* (4th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

Chen, S., & Caropreso, E.J. (2004). The effects of personality on collaborative online learning: Communication type, task engagement, and communication duration. *Proceedings of the Association for Educational Communication and Technologies*, USA, 27, 166-173.

Costello, P.J.M. (2003). *Action research*. London: Continuum.

Dabbagh, N., & Bannan-Ritland, B. (2005). *Online learning: Concepts, strategies, and applications*. Columbus, OH: Pearson Merrill Prentice Hall.

Donovan, M.S., Bransford, J.D., & Pellegrino, J.W. (Eds.) (1999). *How people learn: Bridging research and practice.* Washington, DC: National Academy Press.

Eggen, P., & Kauchak, D. (2001). *Educational psychology: Windows on classroom s (*5th ed.). New Jersey, OH: Pearson Merrill Prentice Hall.

Francis, D. (1995). The reflective journal: A window to preservice teachers' practical knowledge. Teaching and Teacher Education, 11, pp. 229-241. As cited in Martin, M. (2005). Reflection in teacher education: How can it be supported? Educational Action Research, 13(4), 525-542.

Grabe, M., & Grabe, C. (2007). *Integrating technology for meaningful learning* (5th ed.). New York, NY: Houghton Mifflin Company.

Graham, C.R. (2006). Blended learning systems: Definition, current trends, and future directions. In C.J. Bonk, & C.R. Graham (Eds.) *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). San Francisco, CA: Pfeiffer/John Wiley and Sons, Inc.

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. Teaching and Teacher Education, 11, pp. 33-49. As cited in Martin, M., (2005). Reflection in teacher education. How can it be supported? Educational Action Research 13(4), 525-542..

Holly, M.L., & McLoughlin, C. (Eds.). (1989). *Perspectives on teacher professional development.* London: Falmer Press. As cited in Martin, M. (2005). Reflection in teacher education: How can it be supported? *Educational Action Research, 13*(4), 525-542.

Hoyles, C., Healy, L., & Pozzi, S. (1992). Interdependence and autonomy: Aspects of groupwork with computers. *Learning and Instruction, 2*, 239-257.

Hoyles, C., Healy, L., & Pozzi, S. (1994). Groupwork with computers: An overview of findings. *Journal of Computer Assisted Instruction, 10*, 202-215.

Johnson, D.W., & Johnson, R. (2006). *Learning together and alone: Cooperation, competition, and individualization* (8th ed.). Needham Heights, MA: Allyn & Bacon.

Johnson, D.W., & Johnson, R.T. (1999). *Learning together and alone: Cooperative, com petitive, and individualistic learning.* Boston, MA: Allyn and Bacon.

Kemmis, S., & McTaggart, R. (1992). *The action research planne*r (3rd ed.). Geelong: Deakin University Press.

Kongsak, T., & Phairoth, T. (2003, January). *Training on classroom research skills for student teachers*. Paper presented at Hawaii International Conference on Education. Retrieved March 7, 2005 from http://64.233.161.104/search?q=cache:UL456iuFnKIJ:www.hiceducation.org/Edu_Proceedings/Kongsak%2520Thathong2.pdf+action+research+skill s&hl=en

Labaree, D.F. (2003). The peculiar problems of preparing educational researchers. *Educational Researcher, 32*(4), 13-22.

Larivee, B. (2000). Transforming teaching practice: Becoming the critically reflective teacher. *Reflective Practice, 1*, pp. 293-307. As cited in Martin, M., (2005). Reflection in teacher education. How can it be supported? Educational Action Research 13(4), 525-542.

Laurillard, D. (2002). Rethinking teaching for the knowledge society. *EDUCAUSE review,* January/February. Retrieved July 27, 2005 from http://www.educause.edu/ir/library/pdf/erm0201.pdf

Liu, X., Lee, S., Bonk, C.J., Magjuka, R.J., Liu, S., Kim, K., & Shi, M. (2005). *Explore the four dimensions of online instructor roles?* Paper presented at the Association for Educational Communications and Technology Conference- Orlando, Florida.

Mann, C., & Stewart, F. (2000). *Internet communication and qualitative research: A handbook for researching online.* London, UK: Sage.

Maor, D. (2003). The teacher's role in developing instruction and reflection in an online learning community. *Education Media International, 40* (1/2), 127137.

Martin, M. (2005). Reflection in teacher education: How can it be supported? *Educational Action Research, 13*(4), 525-542.

Maxwell, J.A. (1992). Understanding and validity in qualitative research. *In Harvard Educational Review, 62*(3), 279-300.

McMillan, J.H. (2004). *Educational research: Fundamentals for the consumer* (4th ed.). Boston, MA: Pearson, Allyn & Bacon,.

McMillan, D.W., & Chavis, D.M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology, 14*(1), 6-23.

McNiff, J., Lomax, P., & Whitehead, J. (2003). *You and your research project* (2nd ed.). London: RoutlegdeFalmer.

Mills, G.E. (2003). *Action research: A guide for the teacher researcher* (2nd ed.). Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Moon, J. (1999a). *Learning journals.* London: Kogan Page. As cited in As cited in Martin, M. (2005). Reflection in teacher education: How can it be supported? *Educational Action Research, 13*(4), 525-542.

Moon, J. (1999b). *Reflection in learning and professional development.* London: Kogan Page. As cited in Martin, M. (2005). Reflection in teacher education: How can it be supported? *Educational Action Research, 13*(4), 525-542.

Patrick, B.C., Hisley, J., & Kempler, T. (2000). "What's everybody so excited about?": The effects of teacher enthusiasm on student intrinsic motivation and vitality. *The Journal of Experimental Education, 68*, 217-236.

Seaman, J. (2003, June). The Sloan survey of online learning. *Perspectives in Quality Online Education, 2(*4). Retrieved March 3, 2005, from http://www.aln.org/publications/view/v2n4/datav2n4.htm

Singh, H., & Reed, C. (2001). *A white paper: Achieving success with blended learning*. Centra Software.

Slavin, R.E. (1995). *Cooperative learning: Theory, research, and practice* (2nd ed.). Boston, MA: Allyn and Bacon.

Smith, P.L., & Ragan, T.J. (2005). *Instructional design* (3rd ed.). John Wiley & Sons, Inc.

Stringer, E.T. (2004). *Action research in education.* Columbus, OH: Pearson Merrill Prentice Hall.

Styler, G. M., & Philleo, T. (2003). Blogging and blogspots: An alternative format for encouraging reflective practice among pre-service teachers. *Education*, *123*(4), 789-797.

Tschannen-Morran, M., Woolfolk-Hoy, A., & Hoy, W. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202-248.

Whipp, J.L. (2003). Scaffolding critical reflection in online discussions: Helping prospective teachers think deeply about field experiences in urban schools. *Journal of Teacher Education 54*(4), 321-333.