

## Project-based Distrubuted Learning and Adult Learners

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### INTRODUCTION

Attending a traditional or residential learning environment to gain new knowledge or skills demand major time commitment. For working professionals with family responsibilities, the pursuit of knowledge and training in the traditional manner is gradually becoming unattainable (Atieh, 1998). However, advances in computer and communication technologies have provided new distributed learning opportunities for adult learners. Seidel and Chatelier (1994) define the term distributed learning as "multi-way knowledge dissemination among teams, crews, etc." (p. 2). In this study I adapt the definition of distributed learning as an educational format that involves multidimensional interactions (e.g., collaborations, discussions, feedback, lectures, etc.) among teachers and learners, at a distance, utilizing a variety of computer and telecommunication technologies.

Today many fully accredited colleges and universities offer a wide variety of on-line programs to adult learners via computer and communication technologies (Atieh, 1998). The Ohio University Master of Business Administration Without Boundaries (OU MBAWB) program, launched in 1997, offers MBA degrees to working adults in a distributed learning environment (DLE). The MBAWB program uses a problem-based learning format with a theoretical base in constructivism that involves the learner in discussion, collaboration and problem solving. (Milter & Stinson, 1998). The MBAWB program is built around nine learning projects (seven of them group projects, two of them individual projects) and it requires two years commitment. The projects are authentic and they are structured with real-life problems and challenges. Although a majority of the interactions is done through the program Intranet, there are also on-campus interactions. The program has three one-week residencies, one each at the beginning, middle, and end of the program. Also, three extended weekend residencies are held each year. All other times participants utilize the Intranet of the program to access learning resources, to collaborate with other members of their team, and to interact with faculty.

In the MBAWB program the faculty and staff members usually consist of associate director of continuing education at Ohio University, director of the MBAWB program, 5 professors from the College of Business, a technician, and a secretary. Also, there are visiting professors and experts from different fields available as needed.

### WHAT IS PROJECT-BASED LEARNING

Project-based learning approaches are based on constructivist theory (Henze & Nejd, 1997). According to Foshay (1999), the basis of project-based approaches is hardly new. Early in the 1920s William Heard Kilpatrick, a professor at Teachers College Columbia University and colleague of John Dewey, advocated project-based instruction. His notion was that such instruction should include four components: purposing, planning, executing, and judging. He asserted that engaging learners in purposeful activities that they help to select, plan, implement, and evaluate facilitates learners' learning and helps them solve problems and acquire the skills and judgment necessary to function as adults in a democratic society (Foshay, 1999). Kilpatrick's philosophy places the teacher in the role of facilitator, i.e., coach or guide, and thrusts the learner into a role of active learner as researcher, collaborator, author, artist, or combination of these (Foshay, 1999).

Project-based learning has to be used to rebuild real-world complexity. Also, abstraction in

project-based learning is necessary and small exercise can be used to discuss specific issues (Henze & Nejd, 1997). The global project context determines the learners' perspective on a given task, while subtasks in a smaller context provide guidance of the learning process. The ability to develop multiple and alternative perspectives on a problem is also a central skill for performing tasks. Collaborative learning promotes the exchange and reflection on different views. As project work is often done in teams, learners train their capabilities for team-work and collaboration (Henze & Nejd, 1997).

## **ADULT LEARNERS**

Adult education is defined as " participation in systematic learning activities for the purpose of acquiring new knowledge or skills or changing attitudes or values, by persons who have assumed adult social roles" (Lyman, 1999, p. 102). Large numbers of adults seek educational experiences particularly in developed countries. For instance, according to the 1994 UNESCO survey 41 percent of the American adults participated in educational activities during a 12-month period (Valentine, 1997). Reasons why adults seek learning outside of traditional higher education have remained fairly consistent over recent decades. The top two reasons have been developing work-related knowledge and skills and gaining personal development and fulfillment (Lyman, 1999).

Adult learners have some common characteristics, although individual differences exist among them. For instance, Rogers (1986) lists the following characteristics of adult learners, although cultural settings may modify these to some extent:

- They are in a continuing process of growth, not at the start of a process.
- They bring with them a package of experience and values.
- They come to education with intentions.
- They bring expectations about the learning process.
- They have competing interests.
- They already have their own set of patterns of learning (p. 24).

In addition, according to Knowles (1984), adults are self-directed learners. Self-directed learning is an "activity for which the learner takes the initiative and responsibility for the learning process" (French, 1999, p. 16). Self-directed learning places the learner rather than the teacher in charge for some or most of the learning process. In order to use the Internet-based materials effectively and move away regarding the teacher as "sage on the stage," learners must learn to be self-directed and not remain passive receptors of knowledge. The ultimate goal is to increase access to knowledge and help learners to become life-long learners (French, 1999).

Another characteristic of adult learners is that they are described as goal-oriented. Upon enrolling in a course, they usually know what goal they want to attain. They, therefore, appreciate an educational program that is organized and has clearly defined elements. Faculty must show participants how this class or project will help them attain their goals. This classification of goals and program objectives must be done early in the course (Lieb, 2000).

Also, adult learners are relevancy-oriented. They must see a reason for learning something. Learning has to be applicable to their work or other responsibilities to be of value to them. Therefore, instructors must identify objectives for adult participants before the course begins. This means, also, that theories and concepts must be related to a setting familiar to participants. This need can be fulfilled by letting participants choose projects that reflect their own interests (Lieb, 2000).

According to Driscoll (1998), adults prefer problem-based learning. They are motivated to learn as a response to the problems in their lives, thus organizing the content of training programs by problem area, rather than by broad subject would be more significant for them. For, example, adults prefer a class in writing business letters rather than a course in business writing and grammar (Driscoll, 1998).

## STATEMENT OF THE PROBLEM

Distributed learning is a relatively new form of education, and it promises many potentials for educational purposes, in particular for life-long learning environments. However, experiences of adult learners participating in a project-based distributed learning environment (DLE) were not so clear since most of the previous studies were conducted in course-based distributed learning environments. In this study I focus on the experiences of adult learners. Specifically, I concentrate on what kind of learning experiences they have, what kind of problems they face, what are the advantages and disadvantages of the program, and what kind of skills are necessary to study in a project-based distributed learning environment.

## METHODOLOGY

I adapted Bogdan and Biklen's (1992) fieldwork approach as field investigation to form the methodological framework of this study, which incorporated a set of different qualitative data collection methods (i.e., participant observation, document analysis and interviewing) to provide a deeper understanding of learners' experiences in the MBAWB program.

**Participant Observation:** I took fieldnotes during his participant observations when the learners were on-campus to present their final projects and to set up a project plan, and when they were interacting with faculty members and among each other asynchronously on the Web.

**Document Analysis:** Analysis of different documents such as materials on the program Web site, electronic records of asynchronous interaction between the faculty and the learners and among the learners over the program databases and publications about the program were used to understand experiences of faculty and learners in the MBAWB program.

**Interviews with the Learners:** I was able to interview a total of 54 participants and 46 of them interviewed twice to collect additional data. During the first interview period 42 learners preferred to be interviewed through e-mail, 7 of them wanted to have face-to-face interviews when they were on-campus, and 5 of them wanted to have telephone interviews. However, 8 participants did not wish to participate in a follow-up interview because of time constraints. A total of 46 learners were interviewed twice: 40 through e-mail, 1 through telephone and 5 in face-to-face meetings when they came to the Athens campus of Ohio University for the following residency. All the face-to-face and telephone interviews with the learners were recorded after the permissions were given by the interviewees.

Some of the general questions that were asked the learners during the interviews were: "What kind of learning experiences do you have in the MBAWB program in general?", "How do you communicate and interact with the faculty and others when they are at a distance?", "How do you work on a group project when you are at a distance and when you are on-campus?", and "What are the advantages and disadvantages of studying in the MBAWB program?"

The interview questions were not limited with these questions. The researcher also introduced some new questions, if any arose, during the second interviews to obtain detailed information and to better understand the experiences of faculty and learners in the program.

Also, triangulation of data from these different data sources was applied to achieve trustworthiness. In qualitative research, the use of multi-methods and multi-data is

referred to as triangulation (Denzin, 1989). Many researchers, e.g., Fontana & Frey (2000), Denzin (1989), suggest using of multi-method approaches to achieve broader and often better results.

## **DATA ANALYSIS**

The collected data were analyzed through the category construction method that consisted of organizing the data sources, reducing the text and generating conceptual categories, themes and patterns by coding units of the data (Bogdan & Biklen, 1992; Merriam, 1998). According to Ryan and Bernard (2000), "the codes themselves are mnemonic devices used to identify or mark the specific themes in a text. They can be either words or numbers, whatever the researcher finds easiest to remember and to apply" (p. 781). While reading the data, I assigned coding categories as codes or titles (i.e., communication, learning, advantages, disadvantages, etc.) to the units of data. Also, reduction of unrelated data was considered during the coding process. Once all the units of data were appropriately coded and reduced the researcher used "the cut-up-and-put-in folders approach" to place the coded data in folders under the appropriate categories (Bogdan & Biklen, 1992). Then, I reported the data around the categories generated during the data analysis.

## **FINDINGS**

The learners in the MBAWB program had various experiences such as residency experiences, experiences at a distance, online and communication experiences, and learning experiences. Also, the learners determined some significant differences in terms of their experiences between their project-based online learning environment (the MBAWB program) and previous residential or traditional learning environments.

### **RESIDENCY EXPERIENCES**

The residencies in the MBAWB program are intensive one week or weekend-long educational meetings in order to present the final projects and to be introduced to the next project. In a typical residency, the final project is delivered, discussed and debriefed and individual assessments are made. Then the next project is launched, the teams are formed, learning outcomes are determined and a project plan is set up before the end of a residency. Once a residency is over the learners leave the campus to do online interaction and collaboration on their projects, and they do not see each other for three months until the next residency.

### **EXPERIENCES AT DISTANCE**

The experiences of the learners at a distance consist of online research, local library research, and collaboration and interaction with the faculty members and the teammates on their projects and individual assignments mostly through their laptop computers. Most of the learners work on their projects during late nights and weekends since they are busy with their other responsibilities during the day times.

### **COMMUNACATION EXPERIENCES**

The learners interact and communicate with their fellow teammates, classmates and faculty members through both asynchronous (i.e., e-mail and the electronic databases on the program Intranet) and synchronous communication tools (i.e., chat rooms). However, the learners mostly communicate and interact over the databases (i.e., common databases, project databases) because of the time and place independence. In addition, the faculty encourages the learners to interact and communicate over the databases since they want to see how the learners are doing on the projects and to document and evaluate the discussions in the databases. Also, the learners use e-mail and telephone as they needed to communicate individually with the faculty members, teammates and classmates.

### **LEARNING EXPERIENCES**

The learners described their learning experiences mostly as project-based learning, problem-based learning, self-directed learning, and team-based or cooperative learning.

Most learners consider their learning experiences as the combination of different forms of learning such as project-based, self-directed and cooperative learning.

Also, most learners reported that learning in the traditional environment is lecture and memorization oriented whereas in a project-based environment it is research and problem solving oriented. In addition, some learners mentioned that they learn and construct their own concepts when they develop the projects and deal with authentic real life problems, which are embedded in the projects.

As the learning experiences indicated, learning occurred when learners were actively involved in the projects and project discussions in the databases, and when they solved the problems structured in the projects. According to the constructivists, i.e., Miller & Miller, 2000; Jonassen, Peck & Wilson, 1999, discussion, collaboration and problem solving are essential for active learning. Therefore, the findings of this study indicated that learning experiences are associated with educational approach (i.e., project-based approach) and the theoretical base (i.e., constructivism) behind it rather than with the method of delivery through the Web.

## **SKILLS**

Most learners discussed that distance learning requires more "self-discipline" and "time management" skills since most of the learning experiences are self-directed and they have other responsibilities such as work and family. Thus, they set up a study and research time according to their family life and work schedule to avoid falling behind in their learning commitments. In addition, teamwork is another essential skill to have responsibilities in a project-based distributed learning environment since most of the projects are group oriented, which requires responsibility and ability to work with others. Also, communication skills, computer skills (i.e., word processing, PowerPoint, Excel, Internet.), tolerance for ambiguity would help the participants during their commitments in a project-based online learning environment.

## **PROBLEMS**

The most common problem that the learners faced in the MBAWB program was related to teammates. Thirteen interviewees out of 54 (24%) mentioned that some of their teammates during their team projects were irresponsible for their parts or did not pull their weight on the team project. The learners reported that teammate problem is difficult solve sometimes although they have peer evaluation at the end of the each project. Also, some learners referred to technology failures because of the local Internet service providers and modems. A few learners mentioned that they had technological problems in the beginning due to lack of technological skills such as slow typing and limited online research skills.

## **ADVANTAGES**

The majority of the learners described the time and place flexibilities, and working while maintaining everyday responsibilities as the biggest advantages of studying in an online learning environment. Moreover, applicability of the project-based learning in the real life or work place, experience with authentic problems and active participation are the important advantages of studying in an online project-based learning environment. Also, interacting with the adult learners with different business backgrounds and experiences, and combining of the online interactions with the residencies are considered as other advantages of studying in the MBAWB program.

## **DIS ADVANTAGES**

The learners addressed the lack of on-campus interactions at a distance and lack of facial expressions and immediate response during online interactions as disadvantages of a distributed learning environment. Also, some learners complained about having no scheduled breaks or vacations during the two-year commitment as disadvantages of studying in the MBAWB program. In addition, many learners identified family and work responsibilities, sustaining self-discipline while studying and working and time management between the work and academic commitments as important difficulties of

studying in an online adult learning environment. However, most learners reported that the advantages of the project-based distributed learning environment outweigh the disadvantages, thus they have positive values about their learning experiences.

## CONCLUSIONS

The findings of this study indicated that experiences of the learners in the distributed learning environment were not only limited by experiences at a distance and online interactions but also the residency experiences, project-based teaching and learning experiences and theoretical base (i.e., constructivism) behind these experiences were important components of the distributed learning environment.

Time and place flexibilities, interaction with adult learners with different business backgrounds and experiences, and the combination of online interactions with residencies were important advantages of having commitments in the MBAWB program for the adult learners. In addition, experience with authentic problems, and applicability of project-based learning in the work place were significant for many learners.

The most common problem that the learners (13 out of 54) addressed was associated with the lack of responsibility of some teammates for the team projects. Also, the lack of face-to-face interactions and the lack of immediate response during the online interactions were considered as disadvantages of the distributed learning environment.

The combination of project-based approach and distributed learning complements the teaching and learning activities in an online graduate program, and this combination is more effective in active learning (i.e., discussion, collaboration, problem solving) than a simple delivery of a course content through the Web to a passive learner. However, this research did not indicate whether the combination of project-based approach and distributed learning is effective in an undergraduate program. Therefore, investigation of faculty and learners' experiences in an undergraduate level can provide us a better understanding of whether the project-based approach is effective in both undergraduate and graduate distributed learning environments.

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