

# Sharing Power and Culture through Project-Based Online Learning (PBOL): Designing Online Knowledge based on Multicultural Education

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**Abstract:** The main purpose of this paper is to explore and discuss the main characteristics of project-based learning for a graduate enmeshed Web-based course, *Designing and Developing Distance Education*, to promote the critical learning skills of online learners: 1) to engage them in projects designed to be realistic, intriguing and relevant real life experiences, 2) to promote PBOL to model how theory translate into practice in higher education, 3) to integrate PBOL by proposing situate learning in an authentic context by helping them think deeply, 4) to encourage them to take ownership and responsibility for their critical thinking process, 5) to support them to act as cognitive coaches throughout PBOL, and 6) to give them guidance as needed, but encouraging them independence in thinking critically.

## Introduction

Although educators such as Dewey, Papert, etc. have been highlighted the fringe perquisites of experiential, hands-on, and student-directed learning since at the beginning of 20<sup>th</sup> century, "doing projects" is not a long-standing understanding in Turkish higher education especially in social sciences. However, engaging learners with challenging real-life projects can not only develop, but also expand new learning technologies integration in higher education curriculum, and also the availability of these technologies can assemble online knowledge from the world. In addition, researches in learning psychology and cognition emphasize strongly that obtaining knowledge, thinking deeply, doing in real-life, and providing contexts for learning help learners to actively understand what they know to explore, negotiate, interpret, and create within the context of their culture and community as well as and their past experiences. Online learning, therefore, must cover different social activities with emerging technologies.

Project-Based Online Learning (PBOL) is one of learning methods to engage virtual learners in learning knowledge and higher-order thinking skills through an extended investigation process structured around multifaceted and authentic questions, and carefully designed products and tasks. Compared with learning only from textbooks in traditional distance education systems, this approach has many benefits for online learners and faculty: 1) engaging online learners in the central concepts, strategies and principles of any subject areas, 2) gathering deeper knowledge of each subject matter; 3) encouraging collaboration among all online learners, experts and resources from the world, 4) increasing self-direction, self-regulation and self-esteem and self-motivation; 5) improving problem-solving higher thinking skills dealing with real-life problems by explaining dilemmas and presenting knowledge, 6) learning how to ask right questions generated through investigation, research, and reasoning to explore authentic topics.

## Purposes

The world is rapidly becoming more technologically complex. As a result, learners need to be learnt differently than they have been in the past. Colleges and universities must prepare their learners to become active members of this changing society, and to adapt to these transformations as they occur. Project-Based Online Learning (PBOL) can be a strong partner in enhancing a learner's ability to think and solve problems critically. Therefore, researcher designed a PBOL milieu for online learners through in-depth investigation of a real-world topic worthy of their attention and effort. In this study, therefore, there are six steps: 1) involving online asynchronous and synchronous discussions of their project topics, 2) involving sessions with experts, and various aspects of gathering knowledge, 3) including learners to firsthand online experiences related to the topics, 4) engaging online learners to complete sets of learning materials and sharing them with each other online, 5) creating a high-performing online learning milieu focused on achievement, self-mastery, and virtual community building, and 6) gathering authentic data and progress in improving online learners' problem solving skills to clearly define difficulties and opportunities in their projects.

The main purpose of this paper, therefore, is to explore and discuss the main characteristics of PBOL for a graduate enhanced Web-based course, *Designing and Developing Distance Education*, to promote the critical learning skills of online learners

1. to engage them in projects designed to be realistic, intriguing and relevant real life experiences,
2. to promote PBOL to model how theory translate into practice in higher education,
3. to integrate PBOL by proposing situate learning in an authentic context by helping them think deeply,
4. to encourage them to take ownership and responsibility for their critical thinking process,
5. to support them to act as cognitive coaches throughout PBOL, and
6. to give them guidance as needed, but encouraging them independence in thinking critically.

PBOL is vital for online learners to be engaged citizens, informed individuals and dynamic members of their virtual society. Therefore, learners with different learning styles and strategies are most in need of opportunity and encouragement for improving their critical thinking skills. Enhanced Web-based learning has been limited by a lack of research about learners' critical thinking skill developments during their learning process that would serve to assist lifelong learning with real life experiences. This study is breaking new ground by addressing key questions about learners' critical thinking skill developments, PBOL and life experiences. Based on the main purpose of this research and the concerns discussed above, the key research inquiries in this study are:

1. To what extent do online learners' abilities continue to improve their critical thinking skills with PBOL?
2. What kind of online learning experiences are associated with critical thinking skill development with PBOL?
3. What are online learners' patterns of participation in critical thinking skill improvements with PBOL in enhanced Web-based contexts?
4. What are the impacts of critical thinking skill developments with PBOL on their learning outcomes?

The researcher role in this PBOL environment was a coach and facilitator to help virtual learners shape their project to meet the content standards of their graduate course by creating a variety of assessments

### **Theoretical Framework**

The theoretical framework in a philosophical basis for a WebCT-based graduate course in the Distance Education (DE) Department of College of Open Education in Anadolu University allows the faculty to create PBOL milieu and enables their learners to understand problems and perspectives that professionals in the real world. With the online projects, virtual educators and learners engage an open-ending meaning that there is no prescribed approach or solution. Therefore, the tasks they must perform must be generative to build knowledge (Bonk, & Cunningham, 1998). In this case, virtual learning is an active process of obtaining, evaluating and producing knowledge whereas the PBOL is a dynamic, social activity and goal-oriented process in the DE Department. Therefore, we are all practitioners and work together to embrace the constructivist perspective to design, deliver and evaluate distance courses.

To help virtual learners better read, listen, understand, and remember knowledge and information, critical thinking skill improvements with PBOL were increasingly important in the educational development of learners in the course. Moreover, engaging them in critical thinking skill activities with PBOL requires these learners to become active participants in the construction of knowledge, rather than passive receptacles for information delivered by the course developer or educational medium (Jonassen, 2000). Critical thinking with PBOL in this graduate enhanced Web-based class was easily incorporated into a constructivist classroom to support learners in being producers of their own knowledge. In this constructivist milieu, learners had to work on complex projects, synthesize knowledge to build their own understandings, learn skills and concepts, and use them to solve real world problems. These projects, often done in groups, followed from a theory of learning with suggested subject matters to become meaningful and understandable.

PBOL is one of the wide-ranging approaches to online learning. With PBOL virtual learners can participate in authentic projects and real-life practice with using variety knowledge from different disciplines, such as math, language arts, fine arts, geography, science, technology, etc, so that these learners improve their problem-solving higher-order thinking skills by communicating, and collaborating with each other, course facilitator, experts from the globe, and other learners from different societies as well as delving into global knowledge from the world resources. Therefore, online learners can focus on their learning and self-evaluation processes with complexity and openness imitate problems in the real world. Moreover, these learners make easily connections among their projects, real-life problems and course contents. Finally, online learners can understand deeply that each problem in their projects can have more than one solution, and they can use different strategies, principles and approaches to solve these problems with becoming open mind and critical thinkers.

## Methods

This is an ongoing mixed research project. This paper is to investigate and argue the experiences on project-based online learning (PBOL) with critical thinking processes of learners in an enhanced open and distance graduate course in the Distance Education Department of the College of Open Education of Anadolu University. For that reason, this study utilizes both qualitative and quantitative data to provide detailed information to researcher for analysis. Moreover, the combination of this method helps researcher to generate new perspectives and stimulate new directions in data analysis. The combination of the methodologies is to strengthen this study design and to provide data triangulation (the use of a variety of data sources), theory triangulation (the use of multiple perspectives to interpret the data collected), and methodological triangulation (the use of multiple methods to study the focus of this research). Therefore, the researcher overcomes the intrinsic bias that can come from single methods.

## Participants and Setting

The findings of this study represent learners in Distance Education Program of Social Sciences Institutes of Anadolu University in the 2003-2004 school year. These participants were age 22-36 when the study started, and they had different educational backgrounds in colleges. There were totally eight learners in the *Designing and Developing Distance Education* (two of them were women and the rest of them are men) graduate course. All learners in this class answered two different surveys and also participated both individual interviews.

In this paper, researcher describes a constructivist problem-based online learning approach to develop learners' critical thinking skills that she has developed for use in a graduate course in the Distance Education Program. The course is delivered by means of enhanced Web-based learning. This enhanced Web-based graduate course preparation process to provide a PBOL milieu with developing critical thinking skills has several steps. I use a seven-stage process to facilitate the principles and strategies PBOL. These stages include: 1) Syllabus, 2) content (Overview, tasks, a PBOL case, more readings, discussion questions, self-test and comments), 3) announcements and bookmarks, 4) communication tools (email, chat and structured bulletin board), 5) a constructed glossary on the course content, 6) learners' homepages, and 7) frequently asked questions and help. The course, *Designing and Developing Distance Education*, was used a combination of reading materials, self-testing and mentored instruction which involved chat and structured bulletin board to promote collaboration not only between educators and learners but also among learners.

## Data Sources

Data were collected from three different sources: 1) a learner online experience assessment pre-survey and post-survey, 2) individual and focus group interviews, and 3) observations from traditional class sessions and online learning milieus. Researcher used journals to keep observations, PBOL cases, interviews and learners' reflections, experiences and opinions.

Online learners in this course must work together on their projects in a team to discuss, consult and collaborate in their problem solving and product development. They must be recognized a project as relevant to their lives to put in the time and effort necessary to develop a rich knowledge-base leading to develop an intense understanding, which involves the relatedness of knowledge and the reasoning behind critical thinking skills. Moreover, they must collaborate with other learners and more knowledgeable people from the world. For these reasons, researcher acts as an online educator act as a cognitive coach throughout the PBOL process when they need and encourage their independence thinking (Picciano, 2001). Moreover, as a PBOL designer, researcher provides opportunities to reflect on the virtual learning and to arrange in more than one real-life experience where similar knowledge and skills they can use. Therefore, the online learners try to be motivated by engaging in activity.

The course delivery requires active collaboration and interaction between the educator and graduate learners to complete a course productively. To facilitate virtual collaboration for making a right decision by working on a project, the graduate course in DE Department is designed based on enhanced Web-based learning approach. The content of each week was delivered on a specific day, on Sundays. At the start of the course, the designer sent a welcome message and gave online course information in detail to the learners. Based on the questions asked in discussion questions section in WebCT, learners could post their own messages on the bulletin board. This provided every learner to interact with technology but also other learners from all Turkey and around the world. The online learners were also invited to attend real-time chat sessions at regular intervals in each weekday. The learners studied their ways through the online course.

When they completed a portion of the materials, they could either post their discussion topics on the bulletin board or join the chat session to share and exchange the knowledge with their peers and educators.

### **Data Collection**

Multiple outcomes will be tracked over time, including basic critical thinking skills, changing patterns of literacy PBOL experiences, and changes in a range of learning activities. Both positive and negative indicators are being collected wherever possible. For example, the feelings, experiences and opinions data are being collected both through interviews and observations; growth in critical thinking skills is being assessed through paper and pencil surveys and self report as well as through focused group interviews.

Learner feedback from the pre and postsurveys and the interviews suggested that the course goals were achieved and that the Web-based experiences help them achieve those goals. However, learners did not like constructivist-based PBOL approach to improve their critical thinking skills although the PBOL approach set within a real life experiences and meaningful, authentic and relevant learning savvy on designing and delivering distance courses. The multiple perspectives were appreciated as they helped learners to gain insights about developing their critical thinking skills with PBOL as well as allowing them to pick up necessary resource and organizational knowledge. In this way, learners in the course were offered an opportunity to link the theories they were hearing about in their university courses to the statements made by the experts in the field.

### **Results and Conclusions**

In order to develop the fullest potential of new learning technologies to renovate the paradigm of learning, educational researchers conduct a growing number of researches in problem-based inquiry learning in open and distance milieus. This study explored the processes and effectiveness of PBOL in a graduate course, with a focus on the personal and social construction of knowledge and their experiences in this learning setting. The data collected through survey, interviews and observations demonstrated that: 1) online learners have not made good uses of online project methods, but demonstrated positive attitudes toward PBOL, 2) these learners have delved into various online materials from the globe, and shared with each other sufficiently, 3) they conducted relatively insufficient online discussions about their real-life projects, and did not produce superior final products by facilitating PBOL.

Improving critical thinking must be one of the most important educational goals in today's society. When thinking critically, we become active, productive, hopeful, and psychologically healthier people. However, involving learners to become critical thinkers is often difficult. With today's emphasis on test scores, an educator must make an extra effort to integrate problem solving and critical thinking into her daily routine. When done correctly, this may have the additional benefit of higher test performance. We need educational environments with high levels of communication, interaction, and collaboration. PBOL can be a valuable tool in an educational strategy, because it enhances active, cooperative learning through communication with people, both nearby and around the world (Wiburg, 1998). Today's educators are beginning to use technology to support learners in critical thinking activities, because they provide learning environments that are more interactive and engaging. Educators will continue to have a very important role in the development of open and distance applications for their classrooms. It has become quite clear that the Web is breaking down the walls of the traditional classroom, and allowing learners to gain worldwide communication and information online.

### **Educational Importance of the Study**

The learning principles and strategies of constructivist-based PBOL approach can be one of the arrangements that will contribute to the developments in future enhanced Web-based courses to highlight critical thinking skill improvements. This article, also, has presented one such possibility for helping online learners to rethink traditional education and to be aware strengths and limitations in a constructivist PBOL milieu with the improvements of their critical thinking skills. This study could provide invaluable information about the changing and evolving needs and benefits from learners in enhanced Web-based learning milieus over a sustained period of time. Through the data analysis, this research, also, addresses questions that concern educators, policymakers, and scholars. Moreover, this research provides a structured way for those involved in constructivist-based PBOL approach to improve online learner critical thinking skills to look at practice and learn from evidence with reducing reliance on trial and error.

PBOL can work tremendously well in open and distance learning milieus which have radical reforms and changes in the culture and structure of universities, and raise learning standards in their higher education. In these systems, online learners can create excellent projects for students. Therefore, there are three critical questions, which must be answered by higher education systems : 1) how can PBOL work in our open and distance learning milieus, 2) how can PBOL fit well to create high-performance college cultures, values and ethics, and 3) how can PBOL help all stakeholders involve these fundamental educational processes? Moreover, open and distance education institutions in higher education must increase emphasis on learning standards, clear outcomes of PBOL, and accountability of problem-solving higher thinking skills.

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