

PROBLEM-BASED LEARNING IN AN ONLINE COLLABORATIVE ENVIRONMENT

THE CASE OF INCEIF



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INTRODUCTION

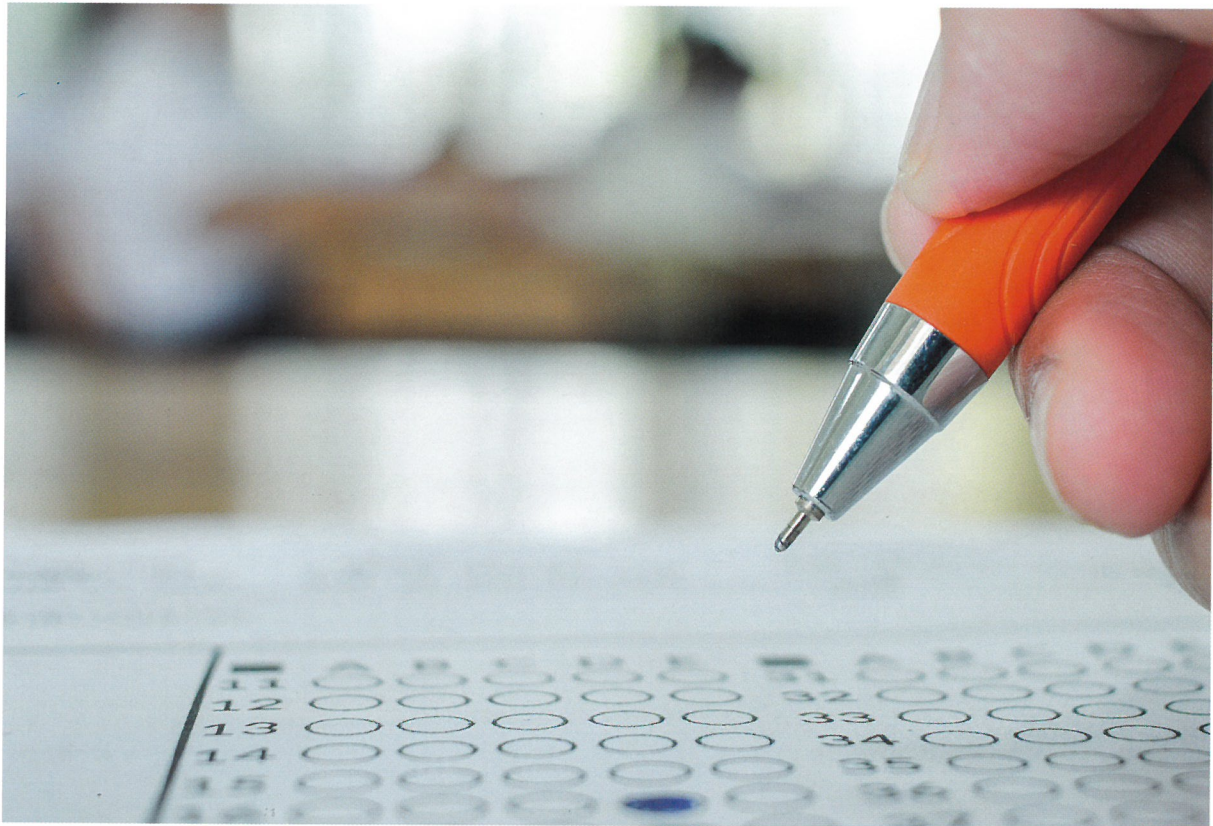
Today, teaching and learning environment extends beyond the walls of the traditional classroom. Advances in technology have made it possible for new possibilities and opportunities in open and distance learning. The modern education industry across the world has recognized the need to incorporate digital technology into the classroom and course curriculum. On that note, the skills needed to be successful today, therefore, (Partnership for 21st Century Learning, 2007) are much different than those expected a decade ago. According to the Malaysia Education Blueprint 2015 – 2025, the Malaysian students need to expose to technologies for blended learning and collaborative learning. This requirement is crucial in order to be globally competitive for their future success. For instance one of the Ten Shifts aims is to develop holistic, entrepreneurial, and balanced graduates in line with the National Education Philosophy.

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The approach involves activities mainly focused on four principles: placing the learner at the center, emphasizing interaction, working in groups, and developing solutions to real challenges (NMC: The New Consortium, 2017).

Skills like collaboration and oral communication are however difficult to measure with traditional strategies, especially for the online students. Hence, the emerging trends in combining the Problem-Based Learning (PBL) approach with Web Collaborative-Based environment are outlined, along with opportunities to explore its implementation in higher education settings.

COLLABORATIVE LEARNING AND PROBLEM-BASED LEARNING IN HIGHER EDUCATION INSTITUTIONS

Collaborative learning approach for the higher education is commonly referred to students or educators working together in peer-to-peer or group activities, based on the perspective that learning is a social construct. The approach involves activities mainly focused on four principles: placing the learner at the center, emphasizing interaction, working in groups, and developing solutions to real challenges (NMC: The New Consortium, 2017). According to Meyer and Jones (1993) collaborative learning is an instructional environment for teaching and learning that involves groups of students working together to solve a problem, complete a task, or create a product. Smith and MacGregor (1992) agreed that, in collaborative learning, students are challenged both socially and emotionally as they listen to different perspectives,

and require to articulate and defend their ideas. In doing so, the students begin to create their original piece. They do not rely solely on an expert's or a text's conceptual framework. Thus, in a collaborative learning setting, learners have the opportunity to converse with peers, present and defend ideas, exchange diverse beliefs, question other conceptual frameworks, and engage actively.

Whereas, problem-based learning (PBL) is an instructional method which also emphasizes active learning. It is designed based on the principles of a constructivist, self-directed, and collaborative learning process. Thus, it allows students to improve their inquiring, problem-solving, creative/critical thinking, reflective learning and teamwork skills (Dolmas, Grave, Wolfhagen, & Vleuten, 2005; Uden & Beaumont, 2006; Barell, 2007). According to Dewey (1904), this pedagogical approach develops principled and innovative students through active integration of theory with real-world practices which immerse students in complex problems that they must analyze and work through together. These approaches develop problem-solving abilities, understanding of complex relationships, and decision making in the face of uncertainty.

Studies on the use of problem-based learning in online learning environments have been increasing (Tsai & Chiang, 2013). For that reason, the online collaborative instructional environment can be designed to acquaint with the problem-based approach to foster more active and group learning experiences, both inside and outside the classroom. The educators are leveraging the online technologies to connect the learning program with real life applications. These approaches are predominantly more student-centered, allowing learners to take control of how they engage with a subject, brainstorm the resolutions and implement them in their communities. Further, the use of this approach indicates that students develop higher-order thinking skills (HOTS) such as creative and critical thinking and also have more motivation to participate and become more active learners (Şendağ & Odabaşı, 2009; Sulaiman, 2011; Delialioğlu, 2012). In addition, more studies reported that problem-based learning also has a strong influence on learning and achievement. Students in problem-based Web environment obtained higher and more significant levels of success than those in traditional courses (Schmidt, Rotgans, & Yew, 2011; Karadeniz-Bayrak & Bayram, 2012). Furthermore, findings from Allen, Donham, and Bernhardt (2011) indicate those learner assessments of problem-based learning implementations were positive. Günbatar and Çavuş (2011) also found that students showed positive attitudes towards the problem-based Web environment. There were also studies made which compare implementations of problem-based learning in online and face-to-face environments. The research concluded that students' attitudes and success levels in the

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problem-based Web environment were higher than those in problem-based face-to-face learning environments (Gürsul, 2008; Gürsul & Keser, 2009). Nonetheless, it is imperative to carefully analyze that pedagogical and online instructional environment choices must be suited to the learning context and to elicit meaningful collaborative teamwork among the students and facilitators.

INCEIF AND THE PROBLEM-BASED LEARNING APPROACH

Following the effectiveness of problem-based learning (PBL) within the web-based environment, this has encouraged the International Centre for Education in Islamic Finance (INCEIF) to adopt the approach among the MIFP students. This is important leap for INCEIF in enhancing the effectiveness of teaching and learning, particularly in improving online students' engagement, changing from passive to active learning and fostering higher-order thinking skills (HOTS) and soft skills (includes the character building).

As such, the E-learning unit at INCEIF has initiated the online PBL as an integral part of the action learning immersion track to the faculty which was piloted in the course of Ethics and Governance (IE5023) in January 2017 semester. There were 104 students enrolled of which 57% (60) were online students. The platform allowed for both face-to-face and online students to work in groups to discuss, collaborate, and present findings and assess student performance on graded problem-based projects. This approach was used and explored as a new paradigm in MIFP's distance education that could provide enhanced opportunities for dialogue, debate and conversational learning and the potential for improving the student engagement level. After the successful pilot exercise, PBL instructional method through online collaborative environment was repeated in the Ethics & Governance (IE5023) course for September 2017 semester and expanded in another course in Economics for Islamic Finance (IE5033).

The entire experience has brought the students to another level of innovative learning with more interactions, thinking process and engagement in a social way. The learning context for this PBL instruction was via an OpenLearning (OL) platform where the students had access to instruction in a synchronous and asynchronous manner from their own device. The instructional format was designed by E-learning unit in such a way that the students could discuss, cooperate and collaborate actively in a group setting. This learning format has fostered a community of collaborative learners instead of individuals feeling lost in the sea of information. The role of the educators or facilitators was to question, encourage, and motivate students in developing the expected learning skills. Hence, there was a minimal 'Instructor-led' approach in this instructional method.



However, the students were required to go on site, out of the classroom to tackle real-world problems in the industry and use ICT anywhere and anytime for collaboration. Throughout the learning process, an informal student-mentoring was available to support those students having problems with the online technology.

Throughout the PBL project it was realized that the online chat feature and project group setting in the OL platform were the main tools for richer discussions and interactions between students-students and students-facilitators. The students organized themselves and selected a group leader to help facilitate the project process. The online PBL process started by identifying, defining, and detailing facts and issues of the assigned problem. Alongside this, students conducted some research on the topics related to the problem to be investigated. Then conducted their investigations using primary or secondary data, formulated ideas in groups and generated solutions. Through the OL platform, they posted, shared, commented and evaluated the potential solutions. The outcomes were submitted online in the form of written assignments and video presentations.

Considering the above developments, this study aimed primarily to examine the effectiveness of the online PBL implementation using the collaborative-based environment, with a special focus on students'

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learning skills acquisition and their overall reactions toward using technology as a means to facilitating learning and collaboration. Therefore, the study focus on answering the following questions:

1. What is the level of achievement of the online PBL expected higher-order thinking skills (HOTS) and soft skills?
2. What is the effect of the implementation of PBL using the collaborative learning approach on team members' level of interaction and engagement?
3. What is the impact of the students' learning at the end of the PBL online course?

IMPACT AND CHALLENGES IN ONLINE PBL

The integration of PBL into an online collaborative instructional environment provides the engaging, collaborative, and student-centered activities that are encouraged the students to fully participate



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in the learning process. Interactions among the students are taken place because of the internet connection that allows them to communicate more freely than in class-based work. The discussion threads in the online environment enable quality dialogues to grow over a period of time. Such approach provides an effective way of communicating, and records of students' new ideas and knowledge construction. The pedagogy technique has made the collaboration possible to tackle and solve problem-based project in distance learning. From the excerpt, students in both courses have shown high engagement and better learning experience.

TESTIMONIAL BY STUDENT ON PBL@ INCEIF

"The best platform that made the course engaging. We discussed matters throughout the day and managed to overcome challenges as a team. We learnt new things together and we have new friends in the same industry. The project made us work together and we supported each other to study the subject even after the project was submitted."

"Yes. While most of students/ team members come from different centres, the discussion can be done smoothly with the use of the platform etc. Presentation via video also provided different experience to students."

The group learning activities between the online and the face-to-face students have brought positive impact in improving the communication, teamwork and leadership skills.

"As an online student, this is the first time I have got the chance to collaborate with the full time (face-to-face) student. It is a good experience as I can share with them my working experience and at the same time learn from them the knowledge which the lecturer teach in class."

Hence, most of the students in the courses feel benefited from the new approach of introducing the PBL with the collaborative learning environment. The group learning activities between the online and the face-to-face students have brought positive impact in improving the communication, teamwork and leadership skills. The online PBL uses learning problems as a catalyst to promote students to think critically. They have applied the theory to the real-life context and hence, learned new knowledge about socio financial institutions, shariah compliance, an alternative to debt financing, crowdfunding, economy, investment and many more. The onsite activity helps to encourage students to have direct engagement with an industry practitioner. On the other hand, students have also participated in the ongoing online discussion through the OL platform. The students posted their ideas, discussed and analysed with peers about the problems and across the problems in different locations. Students incorporated multiple technologies and used during the discussion like WhatsApp and video conference for the interviews with experts in the industry.

However, there were drawbacks from some students about the challenges they faced in solving problems and mastering the use of the platform, including:

- Time constraint, coordination and organization of the tasks through online were among the issues raised by students.
- The responsiveness was not immediate due to the time zone differences.
- Not everyone can be on-board at the same time.

On the other hand, the challenge in PBL is also faced by the instructional designer which to create learning environments that exhibit the "necessary conditions" (Hook, 1993) for effective collaboration.

This finding was consistent with a study conducted by Keller and Sims (1987, 2003) who suggested that PBL and effective interaction environment can be considered as a challenging learning approach.

CONCLUSION AND THE WAY FORWARD

The learning strategy used for this PBL method is the collaborative learning. The study has demonstrated that the students were able to reflect some of the Bloom's higher order thinking skills. The students were also able to identify and explain the research problems or issues;

collaborate and network with the industry hosts, students, and society; and finally, produce the findings in text and video forms. Considerable research by Smith & MacGregor (1992) indicates that when students collaborate with one another, they engage in more discussions, resolutions, and critical analyses. They also learn the subject matter more complete; experience better learning; develop higher levels of interest in the area being studied; retain information longer; and they become more competent and confident in public speaking.

Overall it can be concluded that more than 80% of students agree with the implementation of PBL with a Web-based environment. The online PBL is found to be effective teaching strategy for developing the higher-order thinking and soft skills in small collaborative groups. Below student's comment is further described that the learning method should be used for all courses in the MIFP.

"To have a similar approach for all courses..."

As a result of the PBL implementation with the collaborative online environment, the facilitator would continue the learning approach in January 2018 semester with some enhancements based on the feedback received. Thus, moving forward, the following can be done to improve the PBL implementation:

- a. To arrange more training sessions on using the platform.
- b. To monitor the students' progress from time to time. It is essential the facilitators be present on the online platform throughout the learning process and motivate the students.
- c. To consider the mobile learning approach. It is because many students prefer to use the WhatsApp for communication.
- d. To use online platform fully for the discussion.

The final objective is to be able to institutionalize more action learning Immersion Track implementation through INCEIF - Industry collaboration in 2019 onwards as part of the students' capability building in the real-world complex of Islamic finance and Halal Economy industries. Through providing training and sharing sessions to the rest of the faculty members on the new instructional method in Q1 of 2018, it is believed that INCEIF will be the focus of online PBL with the collaborative learning setting implementation for the Islamic finance graduate school in Malaysia.

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****Notes:**

** The original copy of this research paper can be obtained from the author. Please contact Fathaiya Jamaludin at fathaiya@inceif.org