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INSIGHT JOURNAL

Designing Online and Distance Learning: AID Pedagogical Approach for Creative and Critical Thinking Course

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Received Date: 30th March 2021
Accepted Date: 1st May 2021

ABSTRACT

The notion of delivering a diploma program module through an online and distance learning mode overcame accessibility to teaching and learning facilities. However, a more challenging issue in the course design ensures the successful delivery of the learning objectives. This project attempted to find the most suitable structure of a creative and critical thinking course for online learning. It proposed integrating the Active, Inquiry and Deep (AID) learning pedagogical approaches to shape students' desired thinking skills. The project was conducted using 15 groups of students with 308 working adults aged between 20 to 40 years old from 2011 till 2017. The online and open distance learning mode is determined by 10 hours of synchronous and 30 hours of asynchronous learning. In the beginning, class discussions were centred on developing communication and information-seeking skills. As the students were ready to share and listen, the teaching was directed to identifying problems critically before taking on creativity in finding potential solutions to selected issues. Students translated their ideas into tangible and intangible outputs based on scientific techniques applied in investigation. Various activities were adopted to develop a set of skills for intended learning outcomes. Programmatic assessment tools were carefully selected to evaluate the progress. Students could present their innovative products at the end of the course through a small-scale innovation project exhibition.

Keywords: Active Learning; Inquiry Learning; Deep Learning; Online Learning; Open Distance Learning.

1.0 Introduction

Malaysia is one of the countries that had to make critical decisions in delivering quality education after undergoing lockdown due to the COVID-19 pandemic in March 2020. The primary, secondary and tertiary education providers had to reconsider the adequacy of its conventional education system. The prolonged COVID-19 pandemic situation had forced the educators to shift the synchronous learning from face-to-face to an online teaching mode as instructed by the Ministry of Education, after rethinking students and teachers' safety accessibility to quality education for all. Despite the rising concerns on the educators and students' readiness in embarking on new norms, online learning had largely replaced the traditional classroom for the past year. A paradigm shift in education has resulted in new modes of educational delivery, new learning domains, new learning principles, new learning processes and outcomes, and new academic roles and entities (Bates, 2005). One of the most prevalent changes in determining the best solution in providing education upon learning facilities' closure is to execute online and distance learning. However, a more challenging issue in the course design is ensuring the successful delivery of the learning objectives regardless of the learning approaches used.

2.0 Background of Study

Open distance education (ODL) as a multidisciplinary field has reacted to the changes in ICT technology diffusion; it has and is still evolving and orienting itself to fulfil demand (Harasim, 2000). Communication, collaboration, and information exchange (Levy, 2017) are the main aspects that facilitate open distance learning. Due to the availability of internet access, smart mobile devices and the development of telecommunication services, online application in the learning environment has increased rapidly via video conferencing, chats and forums, online assessments, remote laboratories or teamwork through the web (Herrador-Alcaide, Hernández-Solís, Hontoria, 2020). Eventually, the concept of ODL has evolved to include online learning as a type of distance learning – the idea for learning across distance and not in a traditional classroom. Online education became increasingly accessible and allowed new pedagogical models to emerge.

Within the past decade, online learning is one of the most popular forms of education that significantly impacted the education system, and the trend is only increasing during the COVID-19 pandemic. The critical difference between online learning and open distance learning is location, interaction and intention (Pahwa et

al., 2005). Traditionally, a paradigm shift in attitudes towards online education has been prevalent since the 1990s (Bates, 2005). Online learning takes place over the internet and is often referred to as e-learning, among other terms. Online learning delivers course materials through the internet, which is offered synchronously and asynchronously (Osman et al., 2016). While instructors conduct online learning in a classroom through digital lessons and assessments, distance learning allows students to work online at home at their own pace and time. The teacher assigns work and checks digitally. However,

Several platforms and tools are available to conduct the teaching-learning processes where these have made ODL more feasible to provide course materials. The study by Raihana et al. (2021) investigates the students' preferences toward ODL tools, and the survey focused on undergraduates from universities in Malaysia. One of the most widely used platforms is the Learning Management System (LMS). LMS is an online platform that connects educators and learners via online communication (Adzharuddin, 2013). The LMS also allows educators to monitor and manage classes by providing online materials, discussions, task evaluation and other online activities. Some higher learning institutions' LMS are uFuture, Blackboard, and Spectrum. The non-campus LMS are Google Classroom, Schoology and Moodle. Generally, both LMS types provide comprehensive features that allow the educator to monitor and analyze students' progress and performance during ODL. Google Meet, Zoom, Jitsi, Microsoft Team, and Cisco Collaboration solutions are among the standard tools used for video conferencing. To support ODL, online video conferencing is a beneficial tool, especially for ODL, where students can fully benefit by reviewing past recorded videos for their revision. There are some limitations to online video conferencing, such as poor connectivity, broadband and audio and video quality (Nambiar, 2020). Telecommunication services fee and cost of available smart mobile devices would be one of the main concerns in implementing these online platforms for ODL in their respective institution.

On the other hand, discussions on delivering a skill-based course through an online platform are mixed. The skill-based courses emphasize the teaching of proofs; cognitive skills that are enhanced with practice. Education-based skills development (also known as competency-based learning) evolved with the implementation of didactic techniques such as Problem-Based Learning (PBL), Project-Oriented Learning (POL), and Research-Based Learning (RBL) (Brown, Patrick, Tate & Wright, 1994). Students and educators need to actively engage and interact through learning by doing sessions in the skill-based learning model. Some studies describe the success of hybrid learning contents support such as video class and video conferencing to complement the missing session of face-to-

face instruction (Adzaharuddin, 2013; Raihana et al.,2021).

Similarly, other studies illustrate the shortcomings of online education that lacks engagement, less real-time and real-life contact. The studies attempted to identify the pedagogical method design (Ada, Steve, Sophie & Raymond, 2010; Delgado, 2021;). Therefore, the rising concerns are not about technology (LMS, video conferencing and others), which help deliver education. Effective teaching and learning remain unclear, giving disruptive technology the only mode to provide quality education during the COVID-19 pandemic. In the future, the practicality of the teaching and learning approach has to be reviewed. This study is timely and vital, giving increasing discussions on online learning. Even though ODL is not a new concept, future online-based education is becoming essential. Therefore, this paper poses the question of the adequacy of the pedagogical approaches for developing cognitive skills through online and distance learning.

The purpose of this paper is two-fold:
- To discuss issues related to learning approach for effective delivery of skill-based courses through online and distance learning mode;
- To propose an appropriate pedagogical approach and study plan structure for skill-based courses through online and distance learning mode.

The following section presents some relevant literature on pedagogical approaches. The third section discusses the methodology. The fourth section presents the result of the project-based action research. The final section ends with some discussion, limitation and recommendation for future research.

3.0 Literature Review

Online education is a paradigmatic shift from traditional education due to innovation diffusion, particularly Web technologies. Online education increasingly accessible, open, flexible; it allowed new pedagogical models to emerge and reasoned the revolution in the digital knowledge age that enabled more excellent and faster human communication. At the same pace, education is not a stand-alone activity within the classroom. Online learning is catalyzing a pedagogical shift in how we teach and learn. There is a shift away from teacher-centred education to student-centred learning. It turns passive students into a more interactive, collaborative approach in which students and the Instructor co-create the learning process. The Instructor's role changes from the "sage on the stage" to "the guide on the side".

3.1 Constructivism and Collaborative Approach through Online Education

A constructivism approach is the centre of an online and distance learning mode. Constructivism maintains people actively construct new knowledge as they interact with their environment. The student-centred approach in which students "co-create" three learning experiences. This approach empowers students as active learners instead of passive recipients, absorbing information and reproducing standardized tests. Constructionism asserts that learning is particularly effective when constructing something for others to experience, such as a spoken sentence or an internet posting to more complex things like a painting or a presentation. Another way is to explain ideas to someone else in their own words or produce a slideshow that explained these concepts. Students would gain a deeper understanding that is more integrated into ideas. A constructivist approach, emphasizing adult learning principles and placing emphasis on the student, is advocated.

The collaborative approach is another centre of online education that led to new economic activity forms that produced the knowledge economy and required fundamental education changes (Harasim, 2000). The unique understanding of the very nature of learning has affected the definition, design, and delivery of education. Collaborative learning promotes the joint construction of knowledge and the development of skills related to the interaction, resulting in more essential learning processes (Miguel, 2021). For a skill-based course, an instructor focuses on the experiences that would best generate learning from the learner's point of view, rather than just publishing and assessing the information. In student-centred learning, the student is a teacher as well as a learner. Hence, an Instructor has many roles, from being the sole source of knowledge to being a guide and role model. Students address their own learning needs by moderating discussions and activities that collectively lead others towards the class's larger learning goals (Miguel, 2021).

3.2 Active, Inquiry and Deep Learning Pedagogical Approach

Regarding the pedagogical approaches, there are three identified learning approaches relevant to creating critical and creative thinking. First, active learning as the most fundamental approach in learning has attracted considerable attention in higher education in response to concerns about how students are learning. There are many different forms of active learning, yet most of them are classroom-based. Studies show an alternative to active learning in the classroom through active learning outside of the school in student projects (Heriot et al., 2008).

Second, while traditional learning, such as lecturing by the teacher, is supposed to increase learners' understanding and keeps them active during the learning process, it has been widely asserted that inquiry-based learning increases learners' knowledge and thinking skills (Nedungadi et al., 2015). inquiry-based learning is a pedagogy that supports student-centred learning and encourages them to think scientifically. It develops evidence-based reasoning and creative problem-solving skills that result in knowledge creation and higher recall (Khalaf, 2018).

Third, in-depth learning instruction provides students with the advanced skills necessary to deal with practical problems where jobs are becoming more cognitively demanding. It prepares them to be curious, continuous, independent learners and thoughtful, productive, active members. Deep learning is less focused on teaching many topics, providing a breadth of information, and more focused on promoting meaning and understanding, making connections, building relationships between relevant information and ideas, and fostering advanced analysis, interpretation, and application. There are many opportunities for students to process information and images as they develop and use literacy and thinking skills. Students are less passive and more engaged in the learning process. A review of relevant literature found that formative is key to deep learning (Rushton, 2009). In line with the paradigm shift, the assessment culture has emphasized the importance of formative assessment.

3.3 Skill-based Course related to Thinking Skills

A skill-based course, such as developing thinking skills, is a highly engaged and interactive model. Critical thinking requires several strategies and studies to apply in business education courses successfully. Bartlett (2002) found that high school business students ranked critical and creative thinking as the secondary level's highest cognitive strategy. One of the unique ways of supporting the upper-grade students' necessary thinking skills is through technology in learning (Shakirova, 2007). At the university level, Tempelaar (2006) investigated the role of critical thinking in business education programs and found a positive correlation between critical thinking (identified as a subset of metacognition skills) and course performance. In another study, a group of researchers developed a critical thinking module in an undergraduate business studies program that used experiential exercises to enhance students' decision-making and conflict resolution skills (Hannon, McBride, & Burns, 2004).

Another way to enhance critical thinking skills is by conducting collaborative learning activities (Yazici, 2004). For example, a project-based team approach

for undergraduate e-commerce activity (Ngai, 2007). Results from both student surveys and assessments indicated that students gained critical thinking skills based on the practical application of "learning-by-doing" and the project's collaborative effort. Similarly, problem-solving skills may also result in students acquiring essential thinking skills when business students completed a new business model to solve poor firm performance. In another study, Whatley and Dyck (2000) applied International Monetary Fund development scenarios to international business topics with MBA students. The case method (Rippen, 2002) provides students with the experience of practising intervention skills and solving complex problems. With a bit of investigation and creativity, instructors can find resources that facilitate integrating critical thinking activities into their course.

Therefore, the study decided to explore the three approaches in addressing online and distance learning effectiveness. The following section describes the project's detail in proposing an improved class structure for delivering a skill-based course through a combination of carefully designed pedagogical approaches.

4.0 Methodology

This research project was conducted for the Creative and Critical Thinking Course addressing the students of the Diploma in Business Administration program offered by the Institute of Continuing Education and Professional Studies (ICEPS, UiTM). ICEPS provides a distance learning program through the iCLASS Learning Management System. The motivation in initiating the project was due to the constraints that the lecturer and students faced. The problems include access to teaching and learning facilities, the proximity of class members to the campus for possible meetings and difficulty of communication among students and the lecturer.

The project was conducted using 15 groups for 308 working adults aged between 20 to 40 years old from 2011 till 2017 in the UiTM Shah Alam campus. Table 1 lists the class group and the number of students who participated in the project. The students are Bumiputra students that work in various government agencies and small-medium enterprises. They work as officers and senior officers. Some of the students have more than five years of work experiences.

Regarding the students' profile, the adults working groups came from various industry backgrounds and working experiences. The majority of the students were working adults who resided outside of Selangor, such as Johor, Kelantan, Penang

and Perak. They need to travel and stay over the weekend near Shah Alam campus for attending the five-time two hours classes over alternate Sundays.

Table 1: Profile of The Students Involved in The Research Project as Participants

Year & Semester	Number of Students
2017 2	18
2016 4	13
2016 2	18
2015 4	14
2015 2	27
2015 2	17
2014 4	46
2014 2	27
2013 4	23
2013 2	24
2012 4	5
2012 2	26
2011 4	23
2011 2	27
Total	**308**

Source: LMS Record
https://iclass.uitm.edu.my/Group/default.php?ttype=course&cuserid=93926773

This paper adopted project-based action research. Action research is essentially a collaborative, democratic, and participatory approach to systematic inquiry into a problem of practice within a local context. Action research has become prevalent in many fields and disciplines, including education. This prevalence can be understood in how action research lends itself to action-based inquiry, participation, collaboration, and the development of solutions to everyday practical problems in local contexts (Towns et al., 2000).

It is an experimental type of project-based action research to find the most appropriate method of teaching creative and critical thinking skills. Multiple attempts were made to restructure the class delivery between 2011 to 2017. From 2011 till 2015, classes' location allowed the tangible presentation of outputs and ample space for activities. However, between 2016 to 2017, the site was shifted to new learning facilities that provided limited sharing space for displaying the course's outcome. Therefore, an online platform, such as WhatsApp and iCLASS LMS, was highly dependent between 2016 and 2017. The diploma classes were conducted during the weekend alternately; 5 meetings-2 hours on Sunday afternoon with 10 hours face to face meeting and 30 hours online classroom using iClass LMS platform of 3 credit units. Thus, contributing to a minimal opportunity for active interaction among members.

5.0 The Research Process

Action research generally follows a systematic and cyclical pattern of reflection, planning, action, observation, data collection, and evaluation, which then repeats in an iterative and ongoing manner. The goal of action research is to inform local practice, engage in professional learning, build a community practice, solve a problem or understand a process or phenomenon within a particular context, or empower participants to generate self-knowledge (Dickens & Watkins, 1999; Elg et al., 2020). This project sets 3 learning approaches. The project integrated innovative teaching and learning methods through 3 stages: 1) The Active, 2) Inquiry and 3) a Deep (AID) Pedagogical Approach for Critical and Creative Thinking course delivered using online and distance learning mode. Table 2 summarizes the design of the class structure. The following section describes the process:

Steps 1 Active Learning

Active learning is any learning activity in which the student participates or interacts with the learning process instead of passively taking in the information. For this project, active learning refers to learning activities conducted during the face-to-face 10 hours classroom setting. The class started with understanding the student profile, state of origin, position at the workplace, and challenges in completing the course. Students have grouped accordingly by considering the ease of networking. Several active learning activities were discussed and planned with the students upon consensus. For every 2 hours of class, a one-hour traditional lecture was conducted according to the course contents. The class conducted active learning activities such as guided group discussion, brainstorming, role play, business issue review and guided information-seeking events using mobile technology (YouTube, Google Search). At the end of the class, class members will plan for the active learning activities scheduled for their next class meeting. Apart from the face-to-face class setting, the online class platform iClass Learning Management System and WhatsApp were utilized and updated regularly to provide smooth communication among members on their preparation for following the active learning activities.

Steps 2 Inquiry Learning

Inquiry learning is directed by questions, problems or challenges that student work addresses using online classrooms. It is a teaching and learning method that prioritize student questions, ideas and analyses. In this project, the Structured Inquiry was adopted to fit the thinking level — applying business and management

concepts. Students were given an open question and an investigation method. They must use the technique to craft an evidence-based conclusion. Students conducted market surveys on existing products such as bottled juice, sardine, cornflakes, and others for in-class active learning. Students have to run a market survey by selecting one type of product from 4 different product brands. They have to bring samples and collect feedback for comparative product analysis using a simple matrix of decision-making factors (multi-criteria decision-making techniques) – to understand, rate and rank products for improvements. Students have to analyze and discuss their outcome with group members to present findings and results to the class members. Simultaneously, while inquiry learning in the online classroom took about 30 hours, students were also guided on questioning critical information-gathering techniques. Some of the assigned works were conducting online discussion on current business issues such as sustainable development, e-marketing, Fintech, Industrial Revolution 4.0, IoT, Society 5.0 others. The lecturer will pose a topic or theme for the class members to upload their views, sharing video or evidence of their claims for the related responses.

Table 2: New Structure of AID Pedagogical Approach by Week of Study

AID Pedagogical Approach	Application	Skills	Activities & Assignments	Learning Outcome
Step 1: **A**ctive Learning Week 1-4	*Learning* which engages students as active participants in their learning during face to face class /online with class members.	Communication Information Seeking using Webs, WhatsApp.	Creative Presentation Using White Board, Notice Board, Poster, Video, Mind Map, PPT Slides *Presentation Kit	CO2 & CO4 Comprehension Application
Step 2: **I**nquiry Learning Week 5-9	*Learning* directed by questions, problem or challenges that student work to address.	Critical thinking using video, observation at site, YouTube channel, Newspaper.	Market Survey and Comparative Analysis of Product Design. *Factor Rating Method	CO3 Application Analysis
Step 3: **D**eep Learning Week 10-14	*Learning* that allows a student to take what's known in one situation and apply it to another.	Creative Thinking using video making, voice recording, infographic and prototype making	Small Scale Innovation Project *Design Tools	CO1 Synthesis Evaluation

Source: Author's work

Step 3 Deep Learning

In this project, the in-depth learning process took place between physical classes. Simultaneously, the students are assigned to complete their small-scale innovation project outside the classroom instead of sitting for the final examination. Some of the small-scale innovation projects conducted are Innovative Packaging, New Product Design, and Eco-friendly Product Development. The groups were guided at every step and needed to continuously develop their projects by performing a few inquiry learning activities beforehand. Some of the compulsory activities are brainstorming, market survey, analysis using techniques (factor rating method, product comparative analysis matrix), drawing and creative presentation of ideas, and writing a full report. Students were also guided on presentation skills for the project proposal.

Between 2011 to 2014, the students could only demonstrate a low level of critical and creative thinking through notice board presentation of sustainability-related themes. The students' performance was generally poor due to the task assigned as the final group project, the formative assessment. Creative expression with summarized information was put up on the notice boards and evaluated by peers and instructors. After 2015, an evaluation of the progress and performance through the online platform becomes the only way possible to the new groups. Due to space and learning facilities' limitations, the final group project's main task was to submit a short video presentation on social innovation and environmental issues. Students could take the challenge to learn independently from peers and online and internet sources to make a short video presentation at sites. They recorded interviews and observations compiled into a written report and presented creatively on critical issues. Students displayed a much higher level of creative ability and essential thinking skill due to the assigned task.

After 2016, the Instructor started to improve the formative assessment to a more challenging market survey assignment, product design and video presentation. The changes were made because of the classroom's minimal space for active learning and small class size. The range of 15 to 18 students per group has given more room for personal and close monitoring and contact. After a few rounds of trial and error, finally, the Instructor completed a standard study plan with proper planning, scheduling, work instruction, and guidelines. The improved study plan facilitates the precise class's conduct for timely distribution through the LMS platform. Preparation was done according to strict deadlines for projects to be completed on time. The achievement of the project is not only measured by how well the project was completed.

In order to understand whether the activities have changed the thinking skills and attitude of the students in becoming critical and creative, students were asked to give feedback on their experiences and satisfaction towards the final small-scale innovation project upon completion and submission of the report. Overall, students commented that they have learned and completed the task well. However, they responded that if they were given a second chance to conduct the innovation project, they will do it better and differently. It can imply that there is some evidence of a changing attitude and thinking style. Some of the comments are as below:

"… I have learned the proper way to conduct analysis. I think I can improve in future by studying more techniques in conducting analysis." Student 1
"… I think I may improve this analysis if there are any products that are cheaper than Myrasa with the same quantity and same featured product." Student 2
"… I can make this analysis more detailed…" Student 3
"…I believe I can make this analysis better if I can able to know how this product processed…" Student 4
"…after conducting the project, I found that people look for more criteria before they decide to consume…" Student 5

The above comments show the confidence and desire to make the innovation project better if the students have known better techniques, have more time and knowledge of the study object. These statements show the course has achieved the desired outcome and objectives. Throughout the project, a few rounds of confirmation from the class members were obtained. The lecturer carefully refined the instruction for selected activities to be objective and align with the learning approaches. The related records of activities and experimentation with 15 groups were then turned into a finalized study plan structure as in Table 2.

6.0 Discussion

This classroom technique of blending the online and traditional face-to-face lecture with the AID pedagogical approach has allowed both students and the lecturer to achieve all the course objectives. Table 3 summarized the AID pedagogical approaches' outcome to the original course objectives designed before rearranging the structure during the project.

Table 3 Summary of the Outcome

No	Course Objectives	The Outcome of AID Pedagogical Approach
1	Demonstrate skills in creative and critical thinking	**Small Scale Innovation Project** helps to achieve all the required objectives by developing ability and skills among students. Discussion on issues (CO1), fact-finding and selecting relevant information (CO2), critical and analytical thinking using appropriate decision-making techniques (CO3), display new product design and convincing the appropriateness of ideas for problem solving/solutions (CO4). Students are aware of plagiarism and infringement, the ethical issue related to innovation (CO4).
2	Use Information technology and communication skills to express critical thinking and innovation	
3	Justify ideas adequately in any study/work-related discussion/events	
4	Organize events that will show understanding of processes involved in ethical innovation	

Source: Adapted from course information of the Creative and Critical Thinking, ICEPS (2017)

There are two benefits of the AID pedagogical approach on innovative teaching and learning processes. First, it has proven that online classroom technology, iClass LMS and WhatsApp are helpful in the module. With the help of innovative education technology, the online and distance learning program is just as effective as traditional learning in achieving the objectives of creating critical and creative thinking. Online learning also allows students to receive continuous guidance and supervision throughout their learning stages. It enables students to learn at their pace systematically. The results of the project are recorded in the LMS class system.

Second, the AID pedagogical approach has significantly contributed to the creative and critical thinking course's teaching and learning process. The AID pedagogical approach contributed to a new way of teaching for business students. The student-centred learning approach is a feasible way of learning for working adults. A highly guided teaching approach is needed for a diploma program to help students acquire knowledge and enhance extended life learning skills. At the same time, students can pursue their studies from simple to complex tasks and individual competency to group networking. Records of students' work are kept in the LMS IClass system and confidential.

7. Conclusion, Limitations and Recommendation for Future Studies

The study has proven the pedagogies' effectiveness in addressing the limitation

of resources even in an online and distance learning setting. Thus, extend our understanding of practices as discussed by related studies in pedagogical approaches (Heriot et al., 2008; Nedungadi et al., 2015; Khalaf, 2018; Rushton, 2009).The AID pedagogical approach needs to be carefully designed, scheduled, and planned many months ahead of the class to ensure that the course objectives are achievable and doable. Clear instructions, guidance, supervision and appropriate duration of the time has to be given to students. The Instructor intentionally redesigned the delivery schedule and approach to systematically structure the Active, Inquiry and Deep learning (AID) pedagogical approach in sequence; shift from simple active learning activities to more complex inquiry learning and deep learning at the end of the course. The Instructor conducted the feedback on experience in running the projects, assessing the changing attitude and desire in making improvements even after the class is done. As a result, the students as the evidence of a change agent; the student's thinking style has changed to become a curious, systematic, realistic and innovative.

Technological advancements are awe-inspiring and provide opportunities to expose students and lecturers to the efficient and effective online learning process. Educational technology should be wisely used to enhance personal learning, not to replace traditional learning methods entirely in line with the concepts recommended by Harasim (200). The implementation of various innovative classroom techniques, including critical analysis and creative presentation and product innovation, has made the class an exciting session for all. The project has extended the understanding of the conduct of project-based action research as described by Dickens & Watkins (1999), Elg et al. (2020) and Towns et al. (2000).

However, there are some limitations to the project. It was found that only with the availability of online platforms and accessibility to the internet could open and distance learning be successfully conducted. As the project was completed between 2011 to 2017, open distance learning was the class's central concept. However, the structure and method are still relevant for the current online and distance learning due to the shared issues of inability to meet physically (face to face mode). The limitation of class time and engagement in the physical classroom can be overcome with a systematic online teaching and learning process.

Some practical implications can be drawn for this project. First, in designing the online and distance learning structure, one needs to be responsive to the learners and understanding the adult students' profile. It is also essential to consider the course contents and delivery method following the three pedagogical approaches. High consideration must be given to the availability of a user-friendly online learning

platform, conducive infrastructure (if available), and ecosystem, facilitating and guiding the lecturer and students into the practice of online and distance learning in assuring the quality of education.

Some suggestions for future studies to evaluate the module's effectiveness include a more comprehensive study to measure the course's impact in extending the critical and creative thinking abilities into some entrepreneurial capabilities. Also, it may be an added value to explore the way to embrace the pedagogical and andragogy approaches in exploring adult learners' best learning approaches.

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