



The Urgency of Collaboration and Innovation for Improving the Quality of Learning

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Abstract. The dynamic world changes due to the industrial revolution 4.0 have changed various aspects of life. This change impacts the disruption of various professions and jobs that can replace with technology; on the other hand, new jobs and professions in the industrial world appear. Innovation and collaboration are the main keys to responding to emerging opportunities. Innovation in the field of learning is important in producing quality Human Resources. Students need to prepare to face a dynamic world change through innovation in the learning field. Learning innovations at UNIPMA include implementing innovative learning models, using LMS platforms and digital media, and developing literacy, numeracy, and higher-order thinking that are relevant to today's changes. Collaboration with universities from within and outside the country is also important to provide a more competitive learning atmosphere and prepare students to adapt to dynamic changes. Collaboration also stimulates lecturers to develop research ideas and services that are more innovative and can be used by the community.

Keywords: Collaboration · Innovation · Learning · Quality of Learning

1 Introduction

The challenge of providing the Human Resources needed by the industrial world is a problem in all educational institutions. Digitalization in various aspects of the industry as a result of the Industrial Revolution 4.0 creates new job opportunities with special competencies and other job disruptions. The opportunity for higher education to produce graduates with competencies according to their needs is a reference for all universities worldwide. To produce quality graduates, universities must make adaptive curriculum adjustments to dynamic market changes. Adaptive curriculum adjustments require educators to be more innovative in designing the learning process.

The urgency of innovation in learning has been widely conveyed and socialized in learning activities. Learning innovations can be in the form of innovation models, designs, methods, teaching materials, media, and learning assessments. Learning innovations have developed in Indonesia. Indonesian learning innovation leads to the integration of mastery of technology, pedagogical skills, and content. In various references, this term is TPACK (Pedagogical, Technological, Content, Knowledge). In addition

to implementing TPACK in learning innovation, metacognitive abilities, 21st-century skills, and higher-order thinking are among the values of learning innovation in Indonesia in responding to the challenges of a dynamic world change.

UNIPMA has prepared various innovations in learning, starting with implementing the Merdeka Belajar Kampus Merdeka (MBKM) curriculum. This curriculum strengthens the link and match of university graduates with the needs of the world of work. Implementing the MBKM curriculum provides students with various activities to study outside the campus. The forms of MBKM learning activities include those that UNIPMA, among others, have implemented: (1) student exchanges, (2) Internships/Industrial Work Practices, (3) Educational Internships, (4) Research, (5) Humanitarian Projects, (6) Entrepreneurial Activities, (7) Independent Studies/Projects, and (8) Real/Thematic Work Lectures.

In addition to implementing the forms of MBKM activities, UNIPMA also has a curriculum development and implementation policy based on (1) Outcome Based Curriculum (OBC), curriculum development based on the profile, and Graduate Learning Outcomes (LO). (2) Outcome Based Learning and Teaching (OBLT). Implementing learning activities is defined as interactions between lecturers, students, and learning resources. One of the important principles of OBLT is the accuracy of the selection of forms and learning methods that students will carry out, must refer to and by LO. (3) Outcome-Based Assessment and Evaluation (OBAE), an assessment and evaluation approach carried out on the achievement of LO to improve continuous quality learning.

The learning at UNIPMA must be interactive, holistic, integrative, scientific, contextual, thematic, effective, and collaborative. Prioritizes the development of creativity, capacity, personality, and student needs and independence in seeking and finding knowledge. The approach used by lecturers in UNIPMA must be student-centered and/or collaborative. The learning models applied by the lecturers are based on previous research. Innovative learning models and approaches applied at UNIPMA include Problem-based learning, project-based learning with a scientific approach, and Science, Technology, Engineering, and Mathematics (STEM). This model and approach are one option to strengthen graduates' adaptive competence. Developing an assessment that leads to metacognitive abilities and higher-order thinking is also a research topic. Digital infrastructure support for e-learning platforms based on the Learning Management System has been used. In this article, we will describe the learning innovations applied at UNIPMA and the ideas for collaboration in learning that are possible to apply at UNIPMA.

Collaboration is important to answer the problems of industrial needs that are increasingly complex and dynamic. The development of science and technology not only impacts the speed of access to information, increasing the capacity of cloud (big data) and technology but also impacts human habits and interactions. The complexity of these needs requires multidisciplinary collaboration. UNIPMA also collaborates in the field of research to achieve quality learning. The Tri Dharma of Higher Education (Teaching, Research, and Community Service) has been seen as separate, but the three components are integrated and interrelated.

In learning, collaboration is a teaching practice that involves groups of students working together to solve problems, complete assignments, or create products [1]. Collaboration in the 21st century leads to collaborative teaching, learning, thinking, and

working. In collaborative learning design, teachers/lecturers are no longer experts who transmit knowledge to students. Still, they act as experts who design academic programs for students, as instructors or mentors, especially in the emerging learning process. Collaborative learning will certainly improve the quality of learning by prioritizing problem-solving.

2 Description of Idea

This article describes the application of learning innovations by lecturers within the scope of UNIPMA in the learning process, assessment, and support systems within the scope of UNIPMA. The support system here is digital infrastructure support that supports learning processes and innovations at UNIPMA. MBKM activities as the implementation of the Independent Learning and Independent Campus curriculum describes as a form of experience innovation and collaboration in the field of higher education tri dharma. The opinions expressed in this article are subjective and can be used as ideas for developing learning innovations within UNIPMA, in particular, Indonesia and the world.

3 Results and Discussion

This article describes the application of learning innovations by lecturers within the scope of UNIPMA in the learning process, assessment, and support systems within the scope of UNIPMA. The support system here is digital infrastructure support that supports learning processes and innovations at UNIPMA. MBKM activities as the implementation of the Independent Learning and Independent Campus curriculum describes as a form of experience innovation and collaboration in the field of higher education tri dharma. The opinions expressed in this article are subjective and can be used as ideas for developing learning innovations within UNIPMA, in particular, Indonesia and the world.

3.1 Problem-Based Learning Model

Problem Based Learning is a student-centered learning model that allows students to interact with colleagues, lecturers, and the media used. One of the innovations of the PBL model carried out by UNIPMA lecturers is using PBL with a scientific approach. Research by Utomo [2, 3], provides information that using the PBL model with a scientific approach can improve higher-order thinking skills. This result is certainly a reference for the application of learning with the relevant material characteristics to use this model and approach. The scientific approach uses for science learning, but these results can broaden the understanding that it can implemented in various disciplines. Using the PBL model can also improve student skills in making presentations, especially in preparing presentation materials [2]. PBL can also improve students' problem-solving abilities [4]. PBL stimulates students to solve the problems presented by collecting as much information as possible, then analyzing it to find the correct solution to the existing problem. The solution to this problem does not have to have only one correct answer. Students must learn creatively and independently, especially in exploring solutions to solve problems. The use of PBL can also improve learning outcomes by integrating the PBL model with the use of appropriate media [5].

3.2 Project-Based Learning Model

In addition to the PBL model, the Project Based Learning (PjBL) model is widely researched and applied at UNIPMA. PjBL emphasizes designing and/or making products as outputs. Like PBL, PjBL continues to conduct problem-solving analysis by producing products. The PjBL model applies to technic and vocational program programs at UNIPMA. Research related to PjBL includes, which produce micro-hydro power plant products (prototype) and improve critical thinking skills. PjBL implemented business planning products resulting from the electronic circuit practicum [6]. This research provides information that PjBL has a good influence on entrepreneurial abilities. PjBL is not only used in vocational and technical study programs, but PjBL also applies in the Faculty of Teacher Training and Education. The project involves using software to make it easier to learn geometry [7] and fundamental physics [8]. The curriculum within the UNIPMA study program also develops Project Base and Case Method learning to strengthen learning quality.

3.3 Use of Media-Integrated Digital Teaching Materials Learning Management System (LMS)

Digital media and teaching materials have been widely developed and implemented in learning at UNIPMA. Using an LMS-based platform stimulates lecturers to convert teaching materials from hard copy to soft copy. This change certainly has a positive impact on improving learning and willingness to access student learning resources. LMS-based Moodle at UNIPMA referred to as eLMA, has helped lecturers and students carry out the learning-learning process. LMS-based e-learning is also used in the teaching profession study program. Learning is done online and through blended learning. Learning progress is well recorded, making it easier to monitor and evaluate. The use of LMS also supports the development of digital assessments [9]. The digital arguments of students in the forum are well recorded, making it easier for lecturers to create schemas for students' thinking [10]. Not only digital argumentation and critical thinking skills can also be identified in online learning through the eLMA platform [11].

3.4 Collaboration Programs with Domestic and Foreign Universities and Collaboration in Learning

In addition to making innovations in the field of learning, UNIPMA also carries out collaborative activities with universities at home and abroad. Collaborative activities include university tri dharma activities such as national and international seminars, student exchanges, research and community service (joint research), guest lecturer activities, lecturer exchanges, exchange of experts, and various other activities. This activity provides benefits for students related to learning experiences outside of campus. Lecturers also gain new information and knowledge about research and learning conducted abroad and develop more universal research topics.

In its implementation, the innovations and collaborations that have been carried out certainly have obstacles and challenges. However, with the collaboration and potential of UNIPMA's lecturers, innovation and collaboration are turned into opportunities to

improve the quality of learning within UNIPMA. Leadership commitment is certainly important to motivate the entire UNIPMA academic community to continue to progress and develop. Innovation and collaboration are essential in facing a dynamic world change from various aspects. The world of education must train its graduates to think ahead, 10, 20, until thirty years in the future, not only now. Learning innovations and flexible curricula in predicting future market needs are the keys to improving the quality of graduates.

Lecturers also apply collaborative learning in UNIPMA. Collaborative learning can increase student interest and make learning more meaningful [12]. In collaborative learning, students do not feel alone and work in groups. In collaborative learning groups, students/students are responsible for completing tasks in their group. The division of tasks, the process of exchanging information and knowledge, can occur through a discussion process. Collaborative learning can reduce learning pressure and encourage collaborative relationships between students/students, which can be expanded in real-life situations when they move from an academic to a work and professional environment [13]. In applying collaborative learning, some problems can be used as a reference when implementing it, such as the lack of interpersonal and teamwork skills that hinder group interaction and individual and collaborative learning [14].

4 Conclusion

Based on the information presented, learning innovation is important in improving the quality of graduates. Innovation needs to be related to changes in the world in various aspects of life. This change has an impact on the process of human interaction directly. Innovations in technology, especially learning technology, have helped education adapt to changes during the Covid-19 pandemic. At UNIPMA, innovations in the field of learning have helped the learning process and maintained the quality of graduates. The technological literacy of lecturers and students has increased compared to before the COVID-19 pandemic. Collaboration in the fields of learning and research, and service builds a collaborative academic atmosphere. Students get a new atmosphere in learning, which can potentially increase their future adaptation. Lecturers develop ideas and collaborative research topics with various complex and dynamic problem findings. Innovation and collaboration are important to be developed in universities to respond to opportunities due to change.

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