

# Role of Personalized Learning Program by Learning Management System in Higher Education in Binus Bandung Indonesia <sup>†</sup>

Agus Masrukhin 

Character Building Development Center Information Systems Department, School of Information Systems, Bina Nusantara University, Jakarta 11480, Indonesia; agus@binus.ac.id

<sup>†</sup> Presented at the 2024 IEEE 4th International Conference on Electronic Communications, Internet of Things and Big Data, Taipei, Taiwan, 19–21 April 2024.

**Abstract:** This study aims to provide an overview of the effectiveness and responsiveness of the personalized learning model in terms of Industry 4.0. A qualitative and descriptive research method was used as students, staff, and lecturers were interviewed. Campus and journal practices were examined, and peer-reviewed articles in multiple journals, including publications, personal study lectures, and learning analysis, were analyzed. The paradigm shift in curriculum development and personalized learning design, with the help of the learning management system, helped students become more independent and effective in learning.

**Keywords:** higher education; personalized learning; LMS technology

## 1. Introduction

Personalized learning (PL) is one of the phenomena of the digital revolution, which is driving important changes in various fields, especially in higher education. In the digital era, college learning does not only happen on campus. Thanks to rapidly developing learning technology, students expect to determine what to learn, when to learn, and how to learn. Students want to determine the learning they want, including the learning resources. PL is the biggest challenge for higher education institutions, which pay attention to student diversity to adapt and utilize technological developments in the learning process.

Binus University captures digital progress in higher education to support student independence by registering for personal study courses for one semester. Students benefit greatly from this personalized learning (PL) model, but creativity, perseverance, and personal responsibility are required for graduation. Students may be bored with ordinary lectures because the graduation requirement is strict attendance. On the other hand, in this PL model, attendance is not a requirement for graduation. Success in assignments or projects is an important part of graduation requirements. The students have the option of one semester in PL for all courses in that semester. Students are not tied to a standard learning process, so they can manage their time during the semester and complete courses in 7–16 weeks, so they can graduate faster.

This study aims to explain how students receive personalized learning innovations, map students' learning expectation models, and analyze how the Binusmaya campus applications and practices support student assignments and projects. It was assumed that the in-depth interview answers given by students reflected the quality of the design of Binusmaya's seven facilities at the school and the quality of other supporting spaces on the campus. In other words, student satisfaction was an indicator of successful academic performance and student growth. However, advances in the application of PL technology also affect student graduation, which is a challenge for future researchers.

According to Ming Chen, on the contrary, most e-learning systems tend to ignore students' abilities and the difficulty level of recommended learning materials that match



**Citation:** Masrukhin, A. Role of Personalized Learning Program by Learning Management System in Higher Education in Binus Bandung Indonesia. *Eng. Proc.* **2024**, *74*, 39. <https://doi.org/10.3390/engproc2024074039>

Academic Editors: Shu-Han Liao, Teen-Hang Meen and Cheng-Fu Yang

Published: 2 September 2024



**Copyright:** © 2024 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

each other during the learning process. Apart from that, the problem of continuity of learning must also be considered, inappropriate lecture material causes cognitive load or disorientation of students in the learning process, thereby weakening learning abilities [1]. Bernacki has noted in various articles on learning adaptation that it is best to focus on an individualized curriculum based on learner characteristics and desired outcomes. Bernacki suggests that a theory-based approach to designing and researching personalized learning can organize efforts to evaluate practice, and creating an explicit theory of change can increase the likelihood of achieving personalized learning goals [2]. Therefore, the curriculum model for each university is different and Binus applies a different PL curriculum for creative entrepreneurship students at the Binus Business School faculty. With the help of personalized learning, students are expected to have the freedom of choice to set their own learning goals, be flexible to take their learning beyond the boundaries of the traditional classroom, and receive feedback to create a process of reflection [3]. With the help of personalized learning, learning needs are tailored to students' interests, talents and abilities, and flexible learning is offered for learning in different conditions. Through personalized learning, specific knowledge or skills are desired by each student. A key component of personalized learning is learner analytics. Learning analytics helps educational institutions analyze students' skill development needs. Learning analysis provides results in the form of learning recommendations tailored to student profiles [4,5]. Student resources are a collection of soft skills and hard skills that students have or the knowledge and skills that a person has. This description is in accordance with the definition of qualifications in Law 14 of 2005 or [6]. Apart from developing skills that match the interests of the major, students are also expected to be able to improve six soft skills: (1) self-management, (2) teamwork, (3) communication skills, (4) initiative and entrepreneurship, (5) problem solving and decision-making skills that must be carried out. the ability to carry out and plan and organize [7–9].

## 2. Method

Data were collected through observation, interviews, and a literature review. How colleges reacted to new PL policies in the digital era and how students were involved in the learning process were observed. Interviews with students, staff, and teachers revealed various problems related to personalized learning among students and their innovative ideas for implementing personalized learning. The data were obtained from online articles, and several students confirmed the articles as informants. An interview guide was used to formulate questions during data collection. Using open questions, information related to the effectiveness of learning in a private study room was obtained. Second, satisfaction with the Binumaya platform application was investigated. Third, the management of the learning system was adjusted based on the results. The survey was conducted via Google Forms and WhatsApp (WA). At the same time, articles and interview data were categorized and mapped thematically to clarify student responses. Apart from that, adequacy and truth were considered in compiling data. Data were analyzed in three stages: data reproduction, description, and interpretation.

## 3. Result

The PL design of Binus University in the current digital era has been innovated for e-learning. PL courses have become part of the e-learning model for Binus University students. Students have the opportunity for one semester to take part in PL for all courses. Students are not bound by the regular mode of the learning process. They do not have a class attendance schedule, so they can manage their own time for one full semester and have the opportunity to pass courses between the 7th and 16th weeks (which can be finished sooner). Students can adjust their learning activities to be able to carry out student activities or other self-development activities. Students have the same course qualifications as courses in regular mode.

The different circumstances, social status, and educational background of parents sometimes hinder students' learning processes, including the financial weakness of students' families, the distance between where students live and the campus, students with physical disabilities (disabilities), and students who work part-time. Even parents' educational background can influence parents' attitudes and policies toward their children; some parents are indifferent to their child's achievements in college. These various obstacles make students bored and lazy when it comes studying. The PL lecture program is interesting for students as it saves transportation and accommodation costs for college, and there are no routine lecture activities. Several things make personal study courses interesting: (1) students can learn everything, (2) students can adjust their learning speed, and (3) students can adjust their lecture time to other student activities. Therefore, personal study courses are part of the solution to students' limitations in increasing study resources. There is a problem with the freedom to study lectures individually if students are not disciplined and organized. Therefore, it is necessary to carry out administrative supervision so that student progress can be properly monitored. This is necessary to ensure students follow the lecture process. Without good supervision and monitoring, it is feared that students will get carried away with other activities or socializing with friends.

The application of PL practices by students varies greatly, but in general, students responded well to various narrative responses. Suggestions were proposed by students in interviews as follows:

"I think this personal learning system is very effective for students like me because we can; check the progress of your lecture, there is no minimum number of participants. I think if we decide not to take formal classes, it means we already have other pressing problems. But they feel more productive when they come to study on campus, so I think the PL system is not for all students" (interview, September 2022). NA is a student in Hungary and also a Binus student. According to him, PL is suitable for students like him because he has lecture activities at another campus, so it is not possible to attend regular lectures and attend other classes at the same time. Individual learning is very beneficial for the success of one's studies. Other students acknowledged the effectiveness of OT, although they preferred regular lectures. At Binus Bandung, a student, JS, said:

"PL can be more effective if the student in question knows how to use his time well so that the student can adjust his time and learning abilities, but I like regular classes because I can meet with friends" (interview, September 2022).

There are challenges and difficulties. Students have to be disciplined because there are no regular lectures. Many students attend regular lectures and strictly follow the lecturer's rules, such as submitting assignments on time. Many students rely on assignments from their college friends. Moreover, if students do not ask about lecturers and friends, they have difficulty with subjects. Several students like regular lectures because they can meet friends, socialize, and solve study problems together. However, they acknowledged the effectiveness of PL lectures, especially in terms of time. A student provided a piece of advice based on his interests: "In my opinion, personalized Creative Entrepreneurship learning is effective for students who already have their projects/businesses because PL aims to find out the progress of their business development. Once a week we discuss these developments with the lecturers so that students have a place to consult".

#### 4. Conclusions

The result of this study showed that the current Industry 4.0 era has brought significant changes in higher education. One of the most important impacts of the industrial era is PL at Binus University. Binus University's PL policy illustrates the commitment and challenges of the industrialization era. Students need to focus and be committed to their study goals because of the challenges in PL. The application of PL was interesting for students. Universities need to respond to student expectations and suggestions regarding PL. Constructive and thoughtful policies are needed to ensure that higher education institutions focus on industry market orientation and how PL is used to educate students

with hard and soft skills. Therefore, it is necessary to ensure that students, lecturers, and universities utilize education to build personal integrity based on religion. This research is limited to the descriptive analysis of limited data processing. Therefore, further research is needed to explore PL more broadly. Campuses must play a role in overcoming the challenges that students want by increasing self-confidence to raise human resources.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Data can be made available upon request.

**Conflicts of Interest:** The author declares no conflicts of interest.

## References

1. Chen, C.-M. Intelligent web-based learning system with PL path guidance. *Comput. Educ.* **2008**, *51*, 787–814. [[CrossRef](#)]
2. Bernacki, M.L.; Greene, M.J.; Lobczowski, N.G. A Systematic Review of Research on PL: Personalized by Whom, to What, How, and for What Purpose(s)? *Educ. Psychol. Rev.* **2021**, *33*, 1675–1715. [[CrossRef](#)]
3. Farisia, H. Membangun Kompetensi Sosial Siswa dalam Pembelajaran IPS melalui PL. *J. Pendidik. Teor. Penelit. Dan Pengemb.* **2021**, *6*, 1588–1592.
4. Gerhana, Y.A.; Kurahman, O.T.; Lukman, N.; Atmadja, A.R. *PL: Tantangan Pengembangan LMS di Era Pendidikan 4.0*; Karya Tulis Ilm. Masa Work from Home COVID-19; UIN Sunan Gunung Djati Bandung: Bandung, Indonesia, 2020; pp. 1–12.
5. Dematrini, C.; Benussi, L. *Do Web 4.0 and Industry 4.0 imply Education 4.0*; IT Professional; IEEE Computer Society: Los Alamitos, CA, USA, 2017.
6. Ismail, I.; Hasan, H.; Musdalifah, M. Pengembangan Kompetensi Mahasiswa Melalui Efektivitas Program Magang Kependidikan. *Edumaspul J. Pendidik.* **2018**, *2*, 124–132. [[CrossRef](#)]
7. Arifin, N. *Manajemen Sumberdaya Manusia: Teori Dan Kasus*; Unisnu Press: Kecapi, Indonesia, 2013.
8. Harras, H.; Sugiarti, E.; Wahyudi, W. *Kajian Manajemen Sumber Daya Manusia Untuk Mahasiswa*; Unpam Press: South Tangerang, Indonesia, 2020.
9. Ichsan, R.N.; SEM, M.; Lukman Nasution SE, I.; Sarman Sinaga, S.E. *Bahan Ajar Manajemen Sumber Daya Manusia (MSDM)*; CV. Sentosa Deli Mandiri: Medan, Indonesia, 2020.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.