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OMO education model-flexible and comprehenshive learning solution in current open education

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Abstract:
Artificial intelligence is gradually becoming an indispensable tool in the field of education today. Innovating teaching methods based on AI application to both improve the quality of education and enhance the learning capacity of learners in open education is really necessary. The OMO (Online-Merge-Offline) education model has been implemented by many countries in the world and achieved high efficiency. Through teaching practice and referring to research on this teaching model, the article affirms the benefits of applying this teaching method as well as ways to successfully implement this teaching model at universities.
Keywords: *Artificial intelligence, digital transformation, open education, OMO education model.*

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I. INTRODUCTION

Digital transformation in Vietnamese education with the current AI application platform is an inevitable trend, so in the directive on tasks and solutions for the 2020-2021 school year of the Minister of Education and Training, the important task is to promote digital transformation, promote the application of Information Technology in education and training with the consistent goal of continuing to innovate and ensure the quality of education.

From the perspective of a lecturer, based on the practice of online teaching and online-direct hybrid teaching. Through the level of satisfaction and course effectiveness when students experience both teaching methods at the same time, as well as through analyzing research on online teaching, we realize that no teaching method can replace the traditional teaching method, although this teaching method also has certain limitations and the online-direct hybrid teaching method is loved and chosen by many students and will be studied for the entire course content.

Therefore, in order to maximize the advantages of traditional teaching methods and overcome the disadvantages of online teaching methods, and most importantly, to find the most suitable teaching method in the digital transformation period of education as well as to meet the teaching needs in open education, we find that the OMO (Online-Merge-Offline) method is considered suitable if it is deployed synchronously in most universities and is approached by schools as a truly necessary teaching method to bring Vietnamese higher education into the digital transformation period as well as bring Vietnamese higher education to international standards.

The research objectives of the article answer some questions for the following issues: What is the OMO education model? Advantages of the OMO education model? Current status of implementing the OMO method at universities today? How to effectively implement this model in universities? The research method is suitable for the research objectives, mainly based on the collection, analysis, and synthesis of published data including: Scientific articles, websites, magazines, ...

II. CONTENTS

2.1. What is the OMO education model?

The OMO model (Online-Merge-Offline) is a teaching method that combines online learning and face-to-face learning, in which learners can learn remotely through technology platforms, but still maintain the element of direct interaction with teachers and friends.

The OMO education method is formed and developed based on the advantages of the Internet, technology infrastructure platforms, cloud services, Big Data, AI... The system will include an operations center, playing the role of connecting the learning space from online to offline, with applications, teachers and learners. When it is time for class, teachers do not need to go to class, just log in to the system to teach.

For learners, there are two options: either go to a live class that is fully equipped with projectors, speakers, and computers, then log into the system to see and listen to the teacher's lecture (with the support of a

teaching assistant in the classroom), or if they are too far away to go to class, they can log into the system using their own computer and join the study.

2.2. Advantages of the OMO teaching method

The OMO model is designed based on the TPACK model (Technological Pedagogical Content Knowledge), a theory that affirms the necessity of combining three important factors in education: content knowledge, technology knowledge and pedagogical methods. This is an important factor that helps teachers effectively apply technology in the teaching process and students can absorb knowledge optimally. Some advantages of this method:

First, make effective use of classroom facilities: Large classes can be divided into smaller groups to rotate between face-to-face and online learning, during which time this group studies face-to-face, other groups can study online and sequentially;

Second, personalize the learning path: Students can study online - theory class to grasp basic knowledge, then attend live class - exercise class to practice and discuss. Students can ask questions online, participate in group discussions on the digital learning platform. Teachers use support tools such as online quizzes, surveys to check the level of understanding;

Third, optimize time and space: Reduce travel time when students can study online at home. Live classes focus on practice and application instead of teaching theory.

Fourth, support students according to their abilities: Students who do not understand the lesson can review the online lecture many times. Students who have mastered the knowledge can study more advanced materials, not limited by the speed of the class.

2.3. Current status of OMO method implementation in Vietnam

The OMO model has been researched and applied by developed countries such as the US, China, Spain... since 2015. The OMO teaching model has been implemented by many countries in the world after the Covid 19 pandemic as a solution to both prevent the spread of the disease and ensure that learners' learning is not interrupted. However, with the development of science and technology, this method is truly effective for learners, teachers and training managers and is increasingly potential in the current context of digital transformation. More and more of the world's top universities such as Harvard, MIT, Princeton, etc. have implemented smart OMO blended classes, through online learning platforms including Coursera, Udacity, and edX.

In Vietnam, the OMO model is being implemented by many educational institutions, especially foreign language centers and international schools, helping to organize classes, manage learning, and interact between teachers and students, and is gradually becoming popular. Students and parents are also increasingly familiar with and adapting to this learning method. Educational technology platforms such as ClassIn strongly support students to become easier and more effective. OMO allows students to choose the form of study that suits their schedule and personal condition OMO classes are not simply a combination of online and offline, but also focus on creating a more interactive, engaging and effective learning experience through the use of supporting tools such as blackboards, document sharing, and group activities. Centers and schools that apply OMO often have a process of periodic testing, evaluation, and reporting of learning results to parents, ensuring the quality and effectiveness of the model.s, while providing flexibility in accessing learning resources and good teachers.

Ho Chi Minh City University of Technical Education, Bac Lieu University, Kien Giang University, Hanoi University of Science and Technology, etc. are also implementing this educational model. For example, in an OMO class, there are 50 students studying directly in the lecture hall and 25 students studying online at home. The school has equipped it with a sound recording camera, a computer connected to an interactive screen and teaching assistant software, a sound system and the Internet. When the lecturer teaches in class, the camera will record the lesson and send it to the students via the software system. Students studying online can interact directly with the lecturer and their classmates at the same time. The lecturer can also interact and receive direct feedback from students studying online via chat tools, small blackboards, and bring students up and down the podium on the software.

The OMO model not only solves the problem of shortage of educational personnel, the OMO classroom model also helps centers and schools optimize costs, bringing quality learning experiences to learners at affordable tuition fees. However, the implementation of OMO models in Vietnam today still faces many challenges in terms of technology limitations, teacher qualifications as well as choosing technology applications to become suitable alternative solutions.

2.4. Propose some ways to effectively implement the OMO model in universities

2.4.1. Integrating the OMO blended classroom into the whole learning process through the LMS

The key strategy for implementing the OMO classroom model is to continuously update and optimize the system, including the resource management system, the assignment management system, etc. Therefore, the

OMO method requires a systems view, creating a comprehensive approach to technology and the planning process for teaching. Teachers can start by creating a basic online class group, providing a space for synchronous and regular classroom communication. Using a learning management system (LMS) can help teachers combine multiple objectives, resources, assignments, and assessments on a single platform, better supporting different stages of learning

2.4.2. Ensure online access for all live classes

The OMO ecosystem flexibly meets learning needs in different situations, including emergencies. In addition to fully live or online classes, teachers and students can participate from any convenient location. For example, teachers can teach from home, or students can attend part of the class via online connection. Whatever the situation, participants are supported to interact in real time, with the help of a blackboard for displaying images and notes. Even when teachers and students are present in the same classroom, maintaining connectivity and accessibility is still important.

Behind the classroom with unlimited connectivity and access is an advanced education technology solution. The platform automatically records lecture content and stores it all in a cloud database, facilitating the digitization of resources connecting every step of the learning process.

2.4.3. Support learning with diverse resources

Traditional classrooms often struggle to overcome the limitations of time and space when accessing learning materials. However, with OMO blended learning, teachers are equipped with a learning material storage platform based on a modern storage system. Teachers can exploit online learning materials such as text, images, videos, data sets and virtual experiments to support students in developing deep learning capabilities in real-life contexts.

Online teaching materials act as a learning tool, helping students to face, analyze and solve problems effectively. The design of teaching materials clearly reflects the teacher's educational philosophy. Teachers choose appropriate content and resources to develop students' reading comprehension, guiding students to acquire knowledge from scattered to structured, from abstract generalization to application in real-life contexts. Effective teaching materials include: slides, pre-recorded videos, presentation clips, interactive software, virtual lab platforms, excerpts from quality lectures, or automatically generated video links after class. Teachers can select and rearrange their resources according to specific objectives and store them in the cloud. Then, provide detailed instructions to students to support them in using these learning materials.

2.4.4. Use teaching and learning tools in a diverse and flexible manner

Integrating technology into the classroom is a strategic and phased process. Both teachers and students need to understand how to use technology and develop learning through thinking and collaboration with these tools.

There are three main ways to integrate technology tools into a blended classroom model:

- Interactive Teaching Display + Students (no personal devices).
- Interactive Teaching Display + One personal device for each group of students.
- Interactive Teaching Display + One personal device for each student.

Smart personal devices are a means for students to integrate technology into their note-taking, searching, sharing, collaborating, and creating. Using smart devices not only helps foster self-learning and teamwork, but also arouses scientific curiosity, creativity, and broadens humanistic perspectives in the teaching process.

Choosing the right tools to promote student thinking and collaboration is important. These include interactive features such as polls, choices, matching games, and mind maps, as well as subject-specific thinking features such as virtual labs, geometry tables, and electronic musical instruments. Other tools, such as collaborative documents, mini-whiteboards, and discussion rooms, help promote collaboration among students.

2.4.5. Apply different teaching models

Through the OMO method, teachers can practice innovating many different teaching models such as:

- One Teacher Multiple Students Model: One teacher interacts with students from different live classes.
- Two Teacher Model: One teacher teaches via livestream, while an assistant teacher is present in the classroom.

• - Team Teaching: Multiple teachers instruct students at the same time.

Teachers encourage students to ask questions and facilitate authentic communication through an interactive virtual learning environment. Connectivity is not just about time and space, but also allows students the freedom to choose the place and time that best suits them, engage in rich learning activities, and enhance human-technology interactions.

III. CONCLUSION

Applying AI in education is one of the solutions to implement digital transformation of our country's education today. Besides factors such as policies, management methods, technology, finance, infrastructure, software systems, etc., the human factor is still decisive in the digital transformation strategy of each university, especially the teaching methods of lecturers, need to deploy and apply new technologies, techniques and methods. The OMO education model is not a new teaching model but a new trend in teaching of schools around the world, however in our country the application is still scattered in some schools. Hopefully, with the suggested implementation methods, lecturers can refer to and apply them in the teaching process and this teaching model will be focused on and deployed simultaneously in most universities to increase training efficiency in the digital environment, improve lifelong learning capacity of learners and contribute to the success of the digital transformation task of our country's education as well as integration with the world's education.

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