ESSENTIAL AI SKILLS AND KNOWLEDGE FOR UNIVERSITY LECTURERS

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ABSTRACT

This study investigates the essential AI skills and knowledge required for university lecturers, focusing on their awareness, challenges, and training needs. A survey was conducted with 87 lecturers from the Viet-Hung Industrial University to gather insights into their understanding and application of AI in teaching. The results indicate that while a majority of lecturers are aware of AI, only a small percentage feel confident in their knowledge. The main challenges identified include a lack of resources, insufficient time for learning, and the need for more practical training. Despite these obstacles, lecturers recognize the significant potential of AI to enhance teaching effectiveness, personalize student learning, and improve teacher-student interaction. The study highlights the urgent need for comprehensive AI training programs that cover fundamental principles, practical applications, and programming skills. Such training is crucial to overcoming current barriers and fully leveraging AI's benefits in higher education. The findings underscore the importance of investing in AI education for lecturers to prepare them for the future of modern, sustainable education. Expanding the use of AI in teaching is not only a necessary trend but also a pivotal step towards improving the quality of higher education.

KEYWORDS: *Artificial Intelligence (AI), University Lecturers, Teaching Skills, Educational Technology*

INTRODUCTION

In the modern era of digitalization, artificial intelligence (AI) is emerging as a powerful tool capable of improving many different fields, including education. The development and application of AI in teaching not only brings significant changes in teaching methods but also opens up many new opportunities for improving the quality of education. AI can assist instructors in creating lessons, assessing learning, and interacting with students more effectively. However, to fully exploit the potential of AI, instructors need to have basic skills and knowledge about this technology.

This study focuses on identifying the basic AI skills and knowledge needed for university lecturers, thereby evaluating the level of response of current training programs. The goal is to provide an overview of lecturers' AI awareness, skills and knowledge, as well as the challenges and opportunities when applying AI in teaching. Through online surveys, the study will collect data from lecturers in different disciplines to assess the need and level of readiness to apply AI in teaching.

The article not only contributes to clarifying the necessary skills and knowledge but also provides suggestions to improve and develop AI training programs for lecturers. This is especially important in the context of AI becoming increasingly popular and having a profound impact on all fields, including education. Careful preparation in AI knowledge and skills will help lecturers not only adapt to new trends but also play a proactive role in improving the quality of higher education, meeting the increasing demands of the community. modern society.

LITERATURE REVIEW

Artificial intelligence (AI) has become an important area of research and application in many industries, including education. AI not only provides new tools and methods to improve teaching and learning efficiency, but also opens up new possibilities in personalizing the learning process and supporting instructors in their teaching work. Many studies have evaluated and recommended the necessary skills and knowledge about artificial intelligence (AI) for university lecturers. A study in Nigeria found that, despite awareness of the potential of AI in education, instructors still face difficulties due to lack of resources and appropriate training (Ibrahim, 2024). Other research suggests combining project learning and open educational resources to enhance the teaching of AI skills to engineering students, emphasizing the role of instructors as instructors rather than mere communicators knowledge (Schleiss et al., 2022). Another guide focuses on analyzing and applying AI in teaching, emphasizing the importance of deep technical understanding to implement educational innovation (Saura, 2022). Research in Jordan and Saudi Arabia shows acceptance of AI in foreign language teaching but also highlights shortages of trained personnel and factors hindering AI integration (Khasawneh, 2023). Finally, a study in Nigeria highlights faculty members' positive attitudes toward AI, and points to the need for additional training to reduce concerns and increase confidence in using the technology (Ezekiel & Akinyemi , 2022).

It is important to understand the skills and knowledge required for university lecturers to use AI effectively. This not only helps improve the quality of education but also helps lecturers and students make the most of the opportunities that AI brings. This research will contribute to identifying those important factors, thereby proposing solutions to improve training and application of AI in teaching at universities.

RESEARCH METHODS

This study used an online survey method to collect data on the AI skills and knowledge needed by university lecturers. The survey sample included 87 lecturers from a total of 156 lecturers at Viet-Hung Industrial University. This sampling ensures representativeness and is large enough to provide reliable results.

The survey questionnaire was designed to include closed questions surrounding main topics: basic information of lecturers, level of understanding and use of AI, necessary skills and knowledge, challenges and opportunities. opportunities when using AI in teaching, and the need for more AI training. The questions are based on references and expert opinions in the field of AI and education.

Collected data were analyzed using descriptive statistical methods to determine rates and trends in lecturers' awareness and needs of AI. Analysis results will be used to evaluate the responsiveness of the current training program and propose improvement solutions to improve AI skills and knowledge for trainers.

RESEARCH RESULTS

This study surveyed 87 lecturers at Viet-Hung Industrial University to assess their awareness and readiness to use AI in teaching. The results showed that 80.5% of lecturers knew about AI, of which only 19.5% had no understanding of this technology. The majority of lecturers (46.0%) rated their understanding of AI as average, while 34.5% said they had very little understanding of AI, and only 19.5% had good or very good understanding. .

Of the 87 lecturers, 40.2% have used AI in teaching. Popular applications of AI include assessing student learning (57.1%), creating lectures and learning materials (42.9%), and interacting and supporting students (28.6%).

Regarding necessary skills, 57.5% of lecturers think that basic understanding of AI and its applications is the most important, followed by skills in using AI tools and software (51.7%) and skills in using AI tools and software (51.7%). basic programming (46.0%), knowledge of basic principles of AI (57.5%), AI applications in education (46.0%), and methods to evaluate the effectiveness of AI in teaching (40.2%) considered the most important knowledge to equip.

Key challenges when using AI in teaching include lack of understanding and skills about AI (51.7%), lack of resources and support tools (46.0%), and lack of time to learn and apply AI (40.2%). However, lecturers also clearly see the opportunities that AI brings, such as improving teaching and learning efficiency (57.5%), personalizing the learning process for students (51.7%), and increasing Enhance interaction between lecturers and students (40.2%).

The majority of lecturers (80.5%) want to receive more training on AI, especially on basic principles of AI (57.5%), application of AI in teaching (51.7%), and programming and usage skills. Using AI tools (46.0%). Finally, 86.2% of lecturers agreed that it is necessary to expand the application of AI in teaching at universities.

The results of this study provide a comprehensive view of lecturers' perceptions, needs and challenges regarding the use of AI in teaching, and point out areas for improvement in training and Instructor support.

DISCUSSION

Survey results show that the majority of lecturers at Viet-Hung Industrial University are aware of the importance of AI in teaching, but are still limited in knowledge and skills to use AI effectively. Although 80.5% of lecturers have heard about AI, only 19.5% are confident about their understanding. This highlights the urgent need for in-depth training, focusing on the fundamentals and practical applications of AI in education.

A notable finding is that there is a distinct difference between the level of awareness and practice of AI. Only 40.2% of lecturers have used AI in teaching, showing that there are still many obstacles and challenges that need to be resolved, such as lack of resources, support tools, and time to learn and apply AI.

However, lecturers also see the great potential of AI in improving teaching and learning efficiency, personalizing the learning process, and enhancing interaction between lecturers and students. This shows strong support for expanding the application of AI in teaching.

Providing training courses on AI, especially on fundamentals, applications in teaching, and programming skills, is necessary to improve lecturers' capacity. This not only helps overcome current challenges but also maximizes the opportunities that AI brings, thereby improving the quality of higher education.

CONCLUTION

This study has provided a comprehensive view of the necessary AI awareness, skills, and knowledge for university lecturers at Viet-Hung Industrial University. Survey results show that although the majority of lecturers are aware of the importance of AI, the majority still have difficulty applying AI in teaching due to lack of necessary knowledge and skills.

Key challenges include lack of resources, support tools and learning time, while opportunities that AI brings such as improving teaching efficiency, personalizing the learning process and enhancing teaching interaction Students are highly appreciated. This highlights the urgent need for faculty training and support in the field of AI.

To fully exploit the potential of AI in education, universities need to invest in in-depth AI training programs, including basic principles, applications in teaching and programming skills. The combination of theoretical and practical training will help lecturers overcome challenges, improve teaching capacity and contribute to improving the quality of education.

Finally, expanding the application of AI in teaching is not only an inevitable trend but also an important step to prepare for a modern and sustainable education future.

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