

A New Study Of Artificial Intelligence-Based Knowledge Management In Higher Education During Covid 2019 In LAOS

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Abstract: The creation and application of Knowledge Management (KM) systems based on Artificial Intelligence (AI) presents a number of opportunities to enhance COVID 2019 and higher education systems. Numerous studies have demonstrated that the higher education sector has been under utilizing KM and AI technologies, which is negatively affecting many aspects of higher education and is connected to COVID 2019. The suggested machine learning algorithms have been used with several models in this work. The comparative performances analysis of these models is measured achieved better results.

The varied findings point to a few prevalent but mainly unrecognized facts regarding the dearth of developed smart systems in higher education and research, their effects, and the prospects for AI-based knowledge management systems in Laos education.

Keywords: Artificial Intelligence, Machine Learning Algorithm, Knowledge Management, Higher Education, Predictive Analysis Technique

1. Introduction

The need for education is being met by the introduction of research projects and the significant investments made in educational sectors to satisfy the growing number of adults and youth pursuing education at all levels as well as those pursuing higher education[1].

Globally, higher education is recognized as the most effective means of empowerment. No matter the gender of the child, a higher education is crucial[2].

One of the newest and most widely accepted axioms in the industry today is artificial intelligence.

The field of artificial intelligence studies how to make computers capable of automating tasks that would typically need human intelligence. Here, artificial intelligence refers to the creation of intelligent machines that continuously learn from their previous work and advance.

Another multidisciplinary branch of study that gathers, compiles, analyzes, and interprets data is knowledge management (KM) [3-4].

At their foundation, knowledge management and artificial intelligence are concerned with information—its use and administration.

Machine learning and knowledge management in higher education are made possible by artificial intelligence [5].

Artificial Intelligence (AI) has become ingrained in nearly every aspect of our culture in recent years. One of the most significant pillars of civilization is higher education[6].

Thus, the application of artificial intelligence technology is necessary to improve the global education sector. These days' technology can be utilized in classrooms to provide more participatory teaching methods, such as virtual assistants and augmented reality[7].

Artificial intelligence is being offered as a course in the majority of contemporary Laotian universities and academic institutions, and they are also utilizing it to enhance their administrative and academic frameworks[8].

Students' learning experiences are enhanced as a result of their interactions with intelligent technology and auxiliary educational systems[9].

Intelligent computer systems have long piqued the interest of the modern education sector, but COVID-19 has demonstrated the undeniable reliance of educational systems on intelligent devices [10].

These days, artificial intelligence aids research scientists and students in developing their academic concepts, self-development, interpersonal skills, personality, and communication abilities.

They can practice academic topics in a variety of real-world scenarios with the aid of smart machines. Numerous other intelligent systems support individuals honing their communication and problem-solving abilities [11-12].

Portion 1 discusses the introduction portion. The second section discusses the suggested model. The third section's discussion and tabulated results

2. Proposed Model

The research paradigm that has been suggested aims to investigate the use of artificial intelligence in higher education. The first step involves gathering data with a variety of attributes from a sizable pool of students enrolled in higher education.

Depending on their age, gender, experience level, and other variables, the in formations have a variety of extensive traits. The dataset is split into training and testing sets for this.

Dataset training is used to develop models. The testing dataset is used exclusively to access the model's performance.

As a result, 30% of the whole data set is used for testing, while the remaining 70% is used for training. The model is trained using historical dataset trends, and prediction analysis is performed by examining patterns and trends in real-world data.

A. Knowledge Management In Education

The main goals of knowledge management are to collect, organize, evaluate, interpret, and apply subject-specific knowledge. Knowledge management is essential to the development and advancement of all professional and industrial sectors, including academia and education.

Teachers and academic institutions are generally seen to be poor knowledge-sharers, even though they work in learning and knowledge-based fields.

Businesses that have experienced greater success than, say, schools and local education authorities have established processes and incentives to encourage information sharing and have explicitly declared it as one of their core values, as is the case with KPMG.

They have recognized that information exchange—both "giving" and "taking"—is essential to progress. At Oxford Forum (2002), one of the main concerns brought up and intended to be addressed was: "What is the reason behind the education sector's conventional slow pace of knowledge development?"

Numerous studies have outlined numerous causes for the deficient state of the knowledge management education industry.

One of the main causes is that, particularly from the standpoint of "Knowledge Management," "Academic Research," "Education Management," "Learning Research," and other related fields of study have historically been small and generally least valued.

Although the regulations in Laos have built structures to assist knowledge management in the education sector and have provided a relieving support to the higher education sector.

Many people believe that the era of information, particularly with the development of the Internet, has meant the demise of the library, archive, and museum (LAM) sectors.

Knowledge management systems for academic sectors are created through several standard audit reports, student support service systems, feedback and survey systems, and other repositories based on real-world experiences.

Student service associates must abide by these normative standards in order to carry out their daily tasks.

B. Knowledge Management With Artificial Intelligence In Higher Education

There's no denying that integrating artificial intelligence into knowledge management would facilitate quick decision-making that is higher-quality and more accurate.

With supporting intelligent equipment, artificial intelligence will provide rapid access and speed up the transmission of precise knowledge in a digital world.

While this is true for many industries, the education sector may benefit from it more than others. Higher Education would benefit more from Knowledge Management backed by Artificially Intelligent Smart Machines to meet its immediate information needs for research and advancements.

These technologies can assist the field of higher education in anticipating trends in research and knowledge. In any particular field of study, they can aid in the identification of specific knowledge regarding research and supporting systems.

Knowledge management about auto-creation and personalized information can assist the higher education sector in better serving its stakeholders by helping it understand industry and regional expectations.

The knowledge-as-a-service (KAAS) that higher education sectors may provide is made possible by AI-based KM.

This coordinated combination of AI and KM delivers knowledge services in a dynamic, tailored, high-quality, and accurate manner. Proactive measures for raising pupils' test scores can be taken with the aid of AI-based knowledge management systems and early fact prediction.

Another major concern is the rising trend of university dropouts. Laos university dropout rate rose from 5% in 1988 to 16% in 2020, which was correlated with a wider spectrum of students being admitted to universities.

This is yet another pressing worldwide issue that AI-based knowledge management systems can effectively tackle, aiding in the formulation and eventual implementation of national higher education policy.

AI applications for teaching and learning combined with knowledge management can fully automate teaching and learning process management, in addition to making it easier.

3. Statistical Methods

In the context of artificial intelligence in knowledge management, this study uses the knowledge management-based design approach for enterprise development strategy. For comparative analysis, the arithmetic mean and standard deviation rate approaches are utilized, such as formula(1).

$$\sigma = \frac{1}{n-1} \sqrt{\sum_{i=1}^n X (x_i - \mu)^2}, \mu = \frac{1}{n} \sum_{i=1}^n X x_i \quad (1)$$

Among: σ is the calculation result of standard deviation rate of input sequence x ; N is the number of elements of the input sequence x ; x_i is the i th input value of input sequence x ; μ is the arithmetic mean of the input sequence x . The comparison method of the two groups of results is bivariate t-check under spss, t is as shown in Formula (2).

$$t = \frac{\mu_1 - \mu_2}{\sqrt{\frac{(n_1-1)\sigma_1^2 + (n_2-1)\sigma_2^2}{n_1+n_2-2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \quad (2)$$

Among: μ_1 、 μ_2 is the arithmetic mean of the two comparison series; n_1 、 n_2 is the number of elements of the two sequences to be compared; σ_1 、 σ_2 is the standard deviation rate of the two series to be compared (see Formula 1 for details); T is the result of bivariate check of education results.

4. Results And Discussion

The decision tree technique, which can be used to develop the ideal system for end users by using the dataset as a database, can yield the outcomes of the suggested machine learning model.

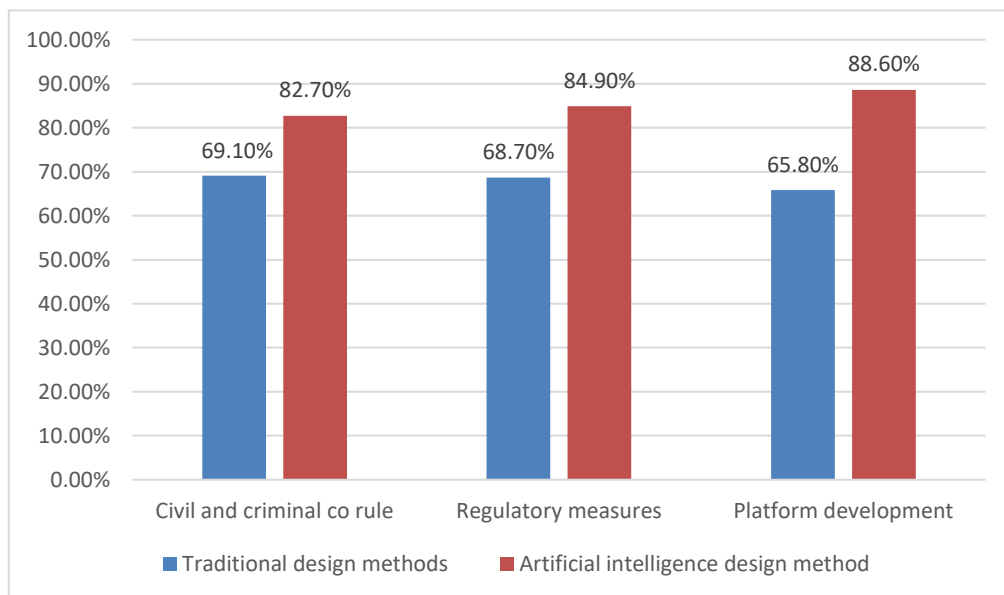
The resulting model can then be used to forecast how AI and ML will be applied to knowledge management in higher education.

A report on model accuracy and error has been produced using the decision tree model. The model performed well during training. Consequently, superior accuracy of greater than 98% was found.

With above 98% accuracy, the test accuracy output is likewise confirmed to be well. There is more than one Mean Squared Error (MSE). Additionally, the Area under the Curve (AUC) exceeds 98%. It is a gauge of a classifier's capacity to discriminate across classes.

Table 1: Comparison of Traditional design method and artificial intelligence design method

Parameters	Traditional Design Method	Artificial Intelligence Design Method
Civil and Criminal Co Rule	69.1 %	82.7%
Regulatory Measures	68.7 %	84.9%
Platform Development	65.8%	88.6%



5. Conclusion

The study's findings will help the educational sectors fulfill the demand created by the growing numbers of adults, youth, and school-age children pursuing higher education.

Higher education is not an exception to the rule that artificial intelligence (AI) is permeating all industries, but historically, the education sector has been marked by a slow rate of knowledge advancement and a lack of sophisticated information management systems.

This work uses a machine learning technique based on decision trees to build a sample pilot project. The suggested model's output result is really encouraging.

Artificial intelligence integration in knowledge management will facilitate quick, effective decision-making with improved precision and caliber.

In order to manage interdisciplinary knowledge and advance to bring together communities of educators and subject matter experts from other multidisciplinary areas like computer sciences, psychology, management, law & regulations, and many other fields of knowledge management, AI-based KM systems can provide a great deal of the necessary information and support.

References

- [1] Xu Qijin, Zhou Xue, Fang Jingjing. Research and Suggestions on the Development of the Metacosmic Industry in Zhejiang Province [J]. Zhejiang Economy, 2022 ,17(07): 40-43.
- [2] Song Fangbin, Gan Feng. Risk and Dual Protection Model of NFT Artworks [J]. Nanjing Social Sciences, 2022,18 (08): 152-160.
- [3] Song Xiaoling, Liu Yong, Dong Jingnan, Huang Yongfei. Application and prospect of block chain in the Yuan universe [J]. Journal of Network and Information Security, 2022,8 (04): 45-65.
- [4] Wang Yiting. New Technology, New Art and New Ecology: NFT Art Observation [J]. Chinese Art, 2022,14 (04): 64-73.
- [5] Cheng Qiaoming. An Analysis of the Structural Form and Artistic Characteristics of the Metauniverse [J]. Journal of Zhejiang Shuren University, 2022,22 (04): 78-86.
- [6] Luo Binrui. Characteristic Analysis and Commercial Application of NFT Encryption Art [J]. Digital Technology and Application, 2022,40 (07): 215-217.
- [7] Shi Yufang, Zhang Chuyao. Analysis on the Development Prospect of the Integration of NFT and Artificial Intelligence Technology [J]. Electronic Components and Information Technology, 2021,5 (11): 95-98.
- [8] Li Yongjian. Integrated Development of the Metauniverse and the Real Economy: Theoretical Logic, Implementation Path and Policy Suggestions [J]. Reform and Strategy, 2022,38 (05): 24-41.
- [9] Liu Da, Fan Fan. Analysis of the Business Value of NFT Encrypted Digital Artworks [J]. China Business Review, 2022,24 (16): 128-130.
- [10] Ding Yunyang. Research on NFT artwork copyright based on blockchain technology [J]. Journal of Suzhou Institute of Education, 2022,25 (04): 116-120.
- [11] Cao Yafei. The Future of Cloud Computing in the Metauniverse [J]. Software and Integrated Circuits, 2022,15 (05): 30-31.
- [12] Yao Chunbin, Geng Zhiyun, Lu Jingyi. "The Yuan Universe" Promotes New Consumption Hotspots of Digital Economy [J]. Information Construction, 2022,18 (04): 56-57.