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Leadership of university teachers in the age of AI

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ABSTRACT

Under the rapid development of artificial intelligence (AI), enhancing the teacher leadership in university has become an urgent need for the development of higher education. This article uses literature research to explore the definition, characteristics, evaluation indicators, and current status of leadership skills among university teachers. Additionally, the application of AI technology in improving leadership skills is discussed, including data mining, machine learning, and AI-assisted decision-making. Based on this analysis, the article proposes a path to enhance the teacher leadership in university , including strengthening leadership training, enhancing teachers' AI literacy and technological literacy, establishing an AI-assisted work system, promoting innovative teaching models, and optimizing educational resources. These measures will help improve the teacher leadership in university and further promote the modernization of higher education.

Keywords: artificial intelligence; leadership skills; university teachers

INTRODUCTION

The teacher leadership in university refer to the influence and strategic thinking demonstrated in their teaching, research, and management. Improving the teacher leadership in university has become an urgent need for the development of higher education. With a large number of university teachers, the strength of their leadership directly affects the level of education, teaching, and management in higher education. In the era of AI technology, university teachers should fully utilize the advantages of AI technology to enhance their leadership skills, better play their roles, and promote the modernization of higher education.

This article starts with the definition, characteristics, evaluation indicators, and current status of leadership skills among university teachers, and combined with the application of AI technology, proposes a path to enhance the teacher leadership in university, aiming to help university teachers better cope with the challenges of the AI era.

DEFINITION

Education has long been concerned with teacher leadership, but before the emergence of specialized teacher leadership theory, this concept only appeared in research on teacher roles, responsibilities, and professional development. "Teacher leadership" first appeared as a proprietary term in American educational research in the 1950s. It was first introduced as an academic concept in an article titled "Teacher Leadership: Ideas and Practices" by Lieberman et al. (Chen & Long, 2009). The teacher leadership in university refer to the influence and strategic thinking demonstrated in their teaching, research, and management. The teacher leadership in university are reflected in the following aspects:

TEACHING LEADERSHIP

Teaching leaders are shaped into strong leaders who can lead goals, supervise processes, oversee teaching, create a teaching environment, solve problems, coordinate relationships, and

combine professional knowledge with personal charm, making the school a completely new place (Hallinger, 2005). As the main bearers and organizers of teaching work, teachers need to have excellent classroom teaching ability and teaching management abilities, leading students in the right direction and helping them grow into excellent individuals.

RESEARCH LEADERSHIP

Research leadership refers to the ability of vocational teachers to show their leadership in research team activities, such as designing research programs, guiding and supervising the progress of research projects, and promoting scientific research results. Research leadership is an important indicator of scientific research abilities and achievements.

MANAGEMENT LEADERSHIP

Management leadership is the ability to lead and manage a group or team in administrative work, including decision-making, planning, organization, and coordination. Management leadership is an important indicator of administrative abilities and achievements.

SOCIAL LEADERSHIP

Social leadership is the ability of higher vocational teachers to integrate relevant social resources to achieve the purpose of school education and to influence the stakeholders of higher vocational universitys in the activities of promoting the development of industries and enterprises and serving society. Teachers need to have rich knowledge and Internet technology across disciplines, fields, and borders. They can use their professional knowledge in various fields of society and establish influence on the industry. For example, provide relevant technical consultation for society and help apply technology to solve practical problems.

It can be seen that teachers with strong teacher leadership can lead the team forward, thereby improving teaching, promoting scientific research and academic achievements, improving management and collaboration capabilities, and ultimately making positive contributions to the development of schools and society.

THE TEACHER LEADERSHIP IN UNIVERSITY HAS THE FOLLOWING CHARACTERISTICS

1) With the changes in the management model of universities, the scope of the teacher leadership in university has become wider, including not only traditional scientific research and teaching, but also modern management and school-enterprise cooperation.
(2) The manifestations of university teacher leadership are various, including not only individual leadership but also team leadership.
(3) The teacher leadership in university is highly practical, and it needs continuous practice and precipitation to exert its effect.

EVALUATION INDICATORS

There are many evaluation indicators for the teacher leadership in university, mainly including the following aspects:

(1) Organizational ability: including the ability to organize and manage teams, task arrangement and distribution, collaborative communication and decision-making, etc.

(2) Communication skills: including the ability to carry out effective communication,
(3) listen to other's opinions, and solve problems.
(4) Innovation ability: including innovative thinking, creative problem solving, etc.
(5) Execution ability: including execution ability, plan implementation, goal achievement, etc.
(6) Team leadership: including building teams, leading teams, coordinating teamwork, evaluating team performance, etc.

STATUS QUO

At present, the following problems generally exist in the teacher leadership in university:

(1) Lack of effective leadership training and education, leading to slow improvement in the level and improvement of teacher leadership.
(2) Teachers' AI literacy and technological literacy are insufficient, and they fail to make full use of AI technology to improve work efficiency and leadership.
(3) The system and mechanism of management and leadership are not perfect, which restricts the cultivation and exertion of leadership.
(4) Individual leadership is more prominent than team leadership, lacking leadership for teamwork and coordination.

THE APPLICATION OF AI TECHNOLOGY IN THE TEACHER LEADERSHIP IN UNIVERSITY

AI technology has been widely used in many fields, and in the improvement of the leadership of university teachers, AI technology also has a very broad application prospect. The following are the applications of AI technology in the teacher leadership in university:

DATA MINING

University teachers produce abundant data in education, teaching, scientific research and management. These data can be analyzed and processed by data mining technology, so as to discover important laws and problems. Through data mining, effective decision-making support and guidance can be provided for university teachers. Data mining technology can help university teachers better understand and apply large amounts of data, thereby optimizing and optimizing education, teaching, scientific research and management. Specifically include the following points:

(1) Analysis of student performance and student groups: Through data mining, it is possible to discover the factors that affect students' academic performance, as well as students' study habits and hobbies, etc., to provide data support for formulating personalized education courses or providing personalized tutoring.
(2) Study curriculum settings and improve teaching quality: Through the analysis of student feedback and shift data, students' needs for different courses can be determined, and different courses can be analyzed to adjust curriculum settings and improve teaching quality.
(3) Optimize research team organization and research project selection: By analyzing the research results and benefits of teachers and research teams, optimize team composition and research project selection, and improve scientific research level and results.
(4) Improve the management of universities and the operation of educational institutions: By analyzing teachers' teaching, scientific research and management performance, as well as

students' evaluation of school management, it helps schools to efficiently manage and operate education and teaching.

It is through the support of these data analysis tools that university teachers can better cope with the ever-changing environment of education, teaching, scientific research and management, improve work efficiency and quality, and ultimately enhance the overall competitiveness of the school.

MACHINE LEARNING

Machine learning is a technology that uses computer technology to automatically learn and intelligently process data. university teachers can use machine learning technology to analyze and process education and teaching data, innovate teaching models, and improve teaching effects and students' learning outcomes. Machine learning technology can provide university teachers with smarter, more efficient, and more personalized teaching support. Specifically include the following points:

(1) Intelligent learning aids: Through the data collection and analysis of students' learning behaviors and the use of machine learning algorithms, teachers can be provided with more intelligent and personalized learning aids, such as adaptive learning systems, automatic question banks and automatic Correction, etc., to better meet the learning needs of different students, improve students' learning efficiency and performance.
(2) Course evaluation and optimization: university teachers can use machine learning technology to evaluate courses, including mining and analysis of student feedback data in terms of course content, teaching methods, teacher performance, etc., optimize course content and teaching links, and improve education and teaching. quality.
(3) Student behavior analysis and prediction: Using machine learning technology to analyze, mine and predict student behavior data can better understand students' learning status and learning methods, provide more accurate data support for education and teaching, and assist teachers to formulate more good teaching strategies to achieve better teaching results.
(4) Scientific research support: The in-depth algorithms and models of machine learning technology can serve university teachers in scientific research, including paper data analysis, intelligent literature retrieval, etc., helping teachers to carry out scientific research projects more efficiently and enhance scientific research capabilities. It is precise because of the application of machine learning technology that the innovation ability and improvement space of university teachers in education and teaching has been greatly enhanced, and the overall competitiveness of schools and educational institutions has been improved.

AI-ASSISTED DECISION-MAKING

AI technology can assist university leaders in decision-making and promote scientific and rational decision-making. Specifically, the following management systems can be established through AI technology:

(1) Educational administration system: The educational administration system is one of the most basic management systems in universities . The use of AI technology can automate the management of student information, teaching plans, teaching resources, etc., and greatly improve the management efficiency and management level of universities in the process of teaching management.

(2) Teaching management system: The teaching management system is one of the most widely used fields of AI technology in universities. Through the teaching management system, universities can automate the management of teaching schedules, student attendance records, classroom handouts, and thesis guidance. At the same time, through data analysis and machine learning algorithms, the teaching management system can help university teachers and administrators better understand the academic performance and needs of students and teachers, and realize personalized education and teaching.
(3) Personnel management system: The personnel management system is a necessary management system for universities as public institutions. AI technology can manage the entry, promotion, performance evaluation and other information of university teachers and employees through the personnel management system, automatically complete the recording and management of personnel information, and understand the working conditions of employees through data analysis and machine learning algorithms, and propose targeted solutions. improvement measures.
(4) Financial management system: The financial management system is a very important part of the university management process and plays a decisive role. Using AI technology, the financial management system can realize automatic management of budget management, financial accounting, asset management, etc., scientifically calculate and analyze financial data, and assist university leaders and managers to make economic decisions.

To sum up, the application of AI technology can help universities to better manage and make decisions, improve the management efficiency and management level of universities , effectively solve the problems existing in university management, and make university operations more scientific, efficient and smooth.

AI EDUCATION

In recent years, artificial intelligence education technology has been widely used. Through artificial intelligence education technology, more resources and support can be provided for teaching, and the personalization and modernization of education can be strengthened.

THE PATH TO IMPROVE THE TEACHER LEADERSHIP IN UNIVERSITY

Implementing the fundamental task of cultivating people by virtue and cultivating students' core literacy by "developing five educations simultaneously" is the fundamental direction and key focus of teachers' leadership in the new era. Teacher leadership, as a dynamic leadership, will be changed by AI. The impact of AI-driven on teacher leadership is all-round. Under AI-driven, teachers' positions are more demanding, cooperation between teachers will be enhanced, teaching improvement will be stronger, and teaching improvement and reform behavior will be more active. Driven by AI, the personal diagnosis of teachers' professional development is more comprehensive, and they can recognize the "true self", identify the shortcomings of professional development, and clarify new requirements for professional development. The selection, acceptance, and reaction of the student group will vary from person to person. Only by continuous learning and accelerated update of knowledge, abilities, and strategies can teachers maintain efficient teacher leadership. AI-driven is an important symbol of digital competence, and it is also a new requirement for the development of teacher leadership in the new era. Therefore, improving teachers' AI competency is not only a need for AI-driven empowerment of teacher leadership, but also a new requirement for teacher professional development centered on teacher leadership. In the era of AI technology, the path to improving the leadership of university teachers mainly includes the following aspects:

STRENGTHEN INSTITUTIONAL GUIDANCE AND STRENGTHEN AI AWARENESS TO EMPOWER TEACHER LEADERSHIP

Based on AI awareness and attitude, strengthen institutional guidance to empower teacher leadership. Correct the strategic position of AI-driven education reform, do a good job in top-level design and scientific layout, clarify the thinking of AI-driven education reform, guide educational administrative agencies, schools, education and training companies, etc., and pay attention to the rational application of educational AI. Improve the assessment system. Optimize the professional development standards of university teachers, take the cultivation of AI literacy of university teachers as one of the professional development goals, take the information-based teaching ability as an important content of professional development, enhance the awareness of AI-driven, and clarify the significance of AI-driven to teacher leadership.

IMPROVE TEACHERS' AI LITERACY AND SCIENTIFIC RESEARCH LITERACY

AI technology is an important technical support for improving the leadership of university teachers. Universities should strengthen the cultivation of teachers' AI literacy and technological literacy, and improve their ability to master AI technology and application level. Teacher leadership is gradually improved from practice. Universities should strengthen leadership training and promote various AI training courses to improve the leadership and management capabilities of teachers and administrators. Carry out the construction of AI-driven research demonstration bases, coordinate and integrate multiple forces, build an AI-driven education and teaching reform research community, and carry out overall exploration of AI-driven education and teaching reforms. Carry out AI-driven special research, design AI-driven education reform projects, and focus on research to solve practical problems encountered in AI-driven education and teaching reform.

ESTABLISH AI-ASSISTED WORK SYSTEM

Establishing an AI-assisted work system can effectively improve the efficiency of teacher management and leadership. In addition, strengthen the management of academic research processes and other aspects, use AI technology to meet individual needs, and further improve the efficiency and quality of scientific research. To design training demonstration projects, it is necessary to optimize the course design. In terms of training objectives and content, it is necessary to focus on the learning of basic AI knowledge for teachers, give full play to the demonstration radiation of "national training" and "provincial training" projects, and rely on the intellectual support of universities and AI companies to consolidate AI. School-based training continuously improves the effectiveness of educational AI training. The second is to innovate the student training program and incorporate the basic knowledge of AI into the educational curriculum system. In the course design, special attention should be paid to the practical teaching of basic knowledge of AI, and to provide students with opportunities and places for AI-driven education and teaching practice as much as possible.

PROMOTE THE INNOVATION OF TEACHING MODE

The application of AI technology has widely promoted the transformation of teaching models. Universities should promote the innovation of teaching models, such as personalized education, digital education, online education, etc., to meet the growing educational needs of students and society. Integrate AI cultural genes into school culture, create a strong AI cultural atmosphere,

pay attention to the creation of school AI culture, pay attention to, use and analyze AI as an internal habit of teachers and students, and continuously strengthen the AI cultural identity and practice of teachers and students; The second is to adhere to quantitative Internet thinking and dialectical critical thinking to focus on and solve practical problems, constantly change the inherent mode of implementing education and teaching relying on habits and experience, and strive to discover educational and teaching facts in the AI environment, and establish a relationship between these facts and educational and teaching practices. Meaningful connection, constructing a new educational and teaching method full of individual style.

OPTIMIZATION OF EDUCATIONAL AND TEACHING RESOURCES

Universities should strengthen the integration and optimization of educational and teaching resources, and improve the quality and efficiency of educational and teaching resources. At the same time, the concept of open sharing of educational and teaching resources should be promoted to improve the efficiency and effectiveness of resource utilization. In the AI environment, the path of teaching students in accordance with their aptitude is more convenient. The adaptive learning service based on the Internet is a main front of educational big data application service, which provides a more convenient path for teachers to carry out teaching with their own talents. The adaptive learning system collects students' learning behavior data, analyzes and predicts students' learning interests, knowledge level, learning style, learning progress, etc., and provides students with highly accurate and personalized learning services666. In teaching practice, on the basis of personalized learning suggestions provided by AI technology, teachers should quickly and conveniently guide students to carry out adaptive learning, record the process of teaching and learning throughout the process, and provide convenient and powerful support for further improvement and promotion.

CONCLUSION

From the perspective of the research object, the research on teacher leadership has developed from the early focus on principals and teaching instructors to the growth of ordinary teachers, especially young teachers. From the perspective of research content, the influencing factors and training paths of teacher leadership and the training of teacher leaders are current research hotspots and will also be the focus of research in the future. The research on teacher leadership can not only provide path reference and policy suggestions for the leading role of excellent teachers, but also explore new training methods for teachers' self-growth and professional development, and provide better theories for improving the quality and efficiency of teacher education and practical support, thereby improving the overall quality of the teaching staff. Therefore, from the perspective of development trends, teacher leadership research is expected to become an important topic of teacher education. In the context of the rapid development of AI technology, university teachers should pay attention to the improvement of scientific and technological literacy and leadership, use AI technology to improve their own efficiency and effectiveness, and further promote the modernization and optimization of university education and teaching.

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