

New Exploration of Teachers' Professional Development in Open Universities From the Perspective of Artificial Intelligence

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Supported by the General Project of the 13th Five-Year Plan of National Open Universities for 2018-2019 (Grant No.G18A1632Y).

Received 12 December 2021; accepted 3 February 2022

Published online 26 March 2022

Abstract

Open universities belong to a new kind of colleges and universities dedicated to lifelong education. Teachers' professional development not only plays a vital role in high-quality development of open universities, but also inevitably has special logics different from other ordinary colleges and universities. Extensive application of artificial intelligence (AI) in the field of higher education provides a brand-new perspective and mindset for revealing such special logics. It is necessary to take into account the status quo of teachers' professional development in open universities, focus on in-depth integration of AI and education, and come up with scientific paths for practice in teachers' professional development in open universities.

Key words: Open university; Artificial intelligence; Professional development

Li, C. M. (2022). New Exploration of Teachers' Professional Development in Open Universities From the Perspective of Artificial Intelligence. *Cross-Cultural Communication*, 18(1), 13-17. Available from: <http://www.cscanada.net/index.php/ccc/article/view/12434>
DOI: <http://dx.doi.org/10.3968/12434>

With the rapid development of artificial intelligence (AI), people have undergone in-depth changes in study, work and life. As a "new type of universities" supported by the modern information technology, open universities are facing new challenges. Teachers of open universities should actively follow the changes of Big Data application, teaching and learning, keep getting adapted

to new teaching scenes, enrich and improve various skills, and master the use of modern information technologies and AI to promote the development and innovation of education and teaching. According to the *National Open University Comprehensive Reform Plan*, with regard to construction of high-quality open universities, teachers in open universities should actively get adapted to higher requirements and improve their comprehensive quality. The transformation of teachers is a fundamental requirement for high-level open universities, and the quality of teachers is a main symbol marking high-level open universities. There are some differences between open universities and traditional university training modes. The orientation, training objects and training modes of open universities have brought new challenges to teachers' professional development. One of the most important figures in the construction of open universities is teachers' professional development. In the era of AI, it is of a great theoretical and practical value to explore strategies of teachers' professional development in open universities.

1. STATUS QUO AND CHARACTERISTICS OF TEACHERS' PROFESSIONAL DEVELOPMENT IN OPEN UNIVERSITIES

Teachers' professional development refers to a process in which teachers constantly learn and reflect on themselves through self-study and active participation in teaching and research activities, so as to form their own unique educational and teaching ideas, and apply these ideas in educational and teaching practice. The implementation of online education in open universities can't be separated from the participation of teachers who serve as the main body. Teachers also have their own unique feelings and personal experience while joining online teaching. Teachers have continuously improved demands for their

professional level of their own disciplines, online teaching ability, the use of modern equipment and other aspects, and have the intrinsic motivation for self-development and self-study. Teaching in open universities has its own particularity. After different teachers make use of these resources and integrate into the teaching environment, their independent professional development also show very distinct individual features such as online resources like online micro-courses, live classes, online tutoring video materials and tutoring texts, and corresponding offline activities like face-to-face tutoring and teaching practice. Different teachers have different backgrounds and individual features, and these resources are integrated with teachers' personalized factors in the process of allocation and the design and implementation of teaching activities, including interest preference, personal growth and other factors, which will have personalized influences on their independent professional contents and promote their professional development to have more distinctive personalized characteristics.

2. NEW REQUIREMENTS OF AI FOR TEACHERS' PROFESSIONAL DEVELOPMENT IN OPEN UNIVERSITIES

At present, the development of information technology has been greatly improved. Algorithms, computing power and Big Data bring a strong impetus to the development of AI. Undoubtedly, the integration of AI and all walks of life will effectively improve the efficiency and quality of people's work. Thanks to online education, students' knowledge acquisition paths and methods are no longer limited to the physical classroom. In teachers' daily work, some trivial and repetitive tasks and mechanical teaching activities are replaced by AI, which further solves the relatively complicated problems in reality effectively. Status quo and Trends of AI and Profound Influences on Higher Education, New Requirements of AI for Teachers' Professional Development.

2.1 Necessity to Reform Teachers' Teaching Methods

In the era of AI, teachers in open universities are facing the challenge of changing teaching methods. In the process of online education, open university teachers need to complete daily teaching and class management. In addition, there are assignments, scoring statistics, resource production, online answering questions and so on. As a lot of work needs to be done, teachers do not have more time and energy to give targeted guidance for every student. Because of the different space in which open university teachers and students are located respectively, support for students will be insufficient, and the education will lack a coherent and orderly process of students' learning in addition to a low utilization rate of learning resources,

loss of emotional ties between teachers and students, etc. Teaching data and learning resources are gathered in large numbers, which is also a challenge for teachers' organization and decision-making. Teachers sometimes need to reconstruct teaching. By virtue of Big Data, teachers can effectively monitor students' learning status and communicate with them through intelligent facilities, thus alleviating the negative emotions brought by time and space factors. However, remote supervision and interaction also remain a challenge.

2.2 Necessity to Reposition Teachers' Roles

In the era of AI, the development of information technologies has exerted some impacts on our education and teaching. Internet-based education mode has made profound changes in the channels and ways for students to get access to knowledge. Such changes have led to the transformation of teachers' roles, and teachers in open universities are faced with the challenge of repositioning their roles. AI has greatly changed the media and materials used by teachers in their work, interaction methods and teaching environment, as well as the conditions for running schools and teaching and training methods. Their roles must be adjusted according to the actual situation. In the era of AI, great changes have emerged in the environment faced by education and teaching, and teachers have to reconsider their role orientation in education and teaching activities under the environmental changes. Under the technical environment of AI, teachers should design teaching, arrange teaching resources and interact with students in teaching, and then explain knowledge, correct homework, supervise and evaluate. Through proper application of AI, the efficiency of teachers' work can be improved, so that they can have more time and experience to devote themselves to the education and teaching of students and concentrate on integrating into the intelligent education environment.

2.3 Necessity to Improve Teachers' Ability Evaluation

In the era of AI, teachers in open universities are faced with the challenge of improving their ability evaluation. Under the new environment of Big Data technologies, there are new ways for teachers to make teaching management in proper time. This quantitative teaching management mode is conducive to avoiding the disadvantages of teachers' subjective judgment management, and also conducive to teachers' better implementation of teaching records and teaching feedback in the teaching process. Although open university teachers can complete the teaching tasks well under the traditional teaching mode and the teaching can be smoothly and clearly implemented, the evaluation of teachers' ability needs to be further improved under the AI mode. It is necessary to evaluate and assess teachers' teaching in the new teaching environment, fully understand their

adaptation to the new teaching environment mode, and make targeted continuous improvement and perfection. Teachers need to transform from original experience-based teaching to the present objective-assisting teaching form. Under the circumstances that the methods and specific means of education and teaching have changed greatly, the evaluation of teachers' ability also needs to be improved and perfected accordingly.

3. COUNTERMEASURES FOR TEACHERS' PROFESSIONAL DEVELOPMENT IN THE ERA OF AI

In the era of AI, a variety of application software and corresponding technologies are integrated into the learning environment, and the application methods have become more humanized. Teachers in open universities need to learn more about AI teaching facilities, master application of intelligent tools, stay calm and have the courage to learn new things. Under the current environment, great changes have taken place in the ways of acquiring knowledge and skills and imparting knowledge. AI and modern education are organically combined, thereby promoting continuous improvement of teachers' ability. Teachers in open universities need to improve and reorganize their knowledge in many aspects such as teaching ideas, technical means and management mechanisms. They should actively face the challenges brought by AI, turn challenges into motivation, and regard AI as an opportunity.

3.1 Perfect the "AI + Teacher" Teaching and Training Plan

In the era of AI, it is necessary to improve the "AI + Teacher" teaching and training plan for the better professional development of teachers in open universities. In the era of AI, a teaching and training mode combining AI with teachers must be established to implement targeted teaching and training plans. The improvement of teachers' information literacy is greatly influenced by the basic teaching ideas, mechanisms and policies of open universities. Open universities should be rooted in reality of current education and teaching, and formulate a teacher training and promotion plan that matches with AI, so as to supplement and improve teachers' shortcomings in technology application and help open university teachers meet the challenges brought by new technologies. Combining the factors of education and teaching plan, teaching practice and students' educational needs, the headquarters and branches of open universities should jointly discuss the research attempt, work out a practical plan for training teachers, and improve the "AI + Teacher" teaching and training plan. Resource and facility support should be provided for teachers in open universities under the AI scene, and teachers are encouraged to actively

use the corresponding technology of AI to improve the education and teaching mode.

3.2 Build a Teacher Evaluation Mechanism Based on Big Data

In the era of AI, the professional development of teachers in open universities needs building of a teacher evaluation mechanism based on Big Data. With the application of AI technology, the environment of open university education and teaching has been reconstructed, which requires a multi-dimensional comprehensive framework for teacher assessment and evaluation and a new assessment mechanism based on Big Data. Different from ordinary colleges and universities, open universities belong to a new type of colleges and universities based on modern information technologies, which practice distance open education. Teaching is realized through face-to-face tutoring, online teaching, online courses and mobile terminals. Therefore, the assessment of teachers is also very different from traditional colleges and universities. The assessment of open university teachers should combine the reality of distance education and the current application of AI. Diversified assessment and evaluation on teachers should be carried out through the information collected by Big Data and the objective data automatically integrated and analyzed. Through the change of assessment indicators, a new mechanism of teacher assessment is constructed, and the assessment and evaluation are linked with teacher appointment, rank promotion, reward and welfare, etc. This mode is actually conducive to encouraging teachers to further improve the teaching ability under the AI mode.

3.3 Create a Training Environment of Media-Intelligence Cooperation Skills

In the era of AI, the open university teachers' professional development needs to create a training environment of media-intelligence cooperation skills. First of all, to create a training environment for media-intelligence cooperation skills, it is necessary to improve the intelligent infrastructure. Intelligent teacher learning environment requires the introduction of cross-media intelligent technology, full use of various digital education and teaching resources on the Internet, and organic combination with learning environment. Secondly, resources need to be effectively integrated. It is necessary to make full use of the cross-media intelligent technologies, and make the intelligent facilities provide learning guidance and interactive mode services, thereby continuously improving the quality and attainments of teachers in open universities and their teaching ability of intelligent equipment. Thirdly, the content of teacher training should be enriched. Through teacher training, teachers' comprehensive quality and teaching ability are improved. In particular, teachers are encouraged to conduct research and development and participate in online teaching. In the teacher training for

open universities, we should effectively improve the information literacy training in combination with the current reality, process the data of practical teaching, analyze the existing problems, and give targeted help and solutions.

3.4 Renew Ideas and Reconstruct Knowledge Transfer Modes

It is necessary to change the concept of education, set up the concept of talents with the connotation of the times, diversify the quality concept, and attach importance to the diversified and personalized training of students. In the era of AI, teachers' professional development in open universities needs to update their ideas and reconstruct knowledge transfer modes. AI technologies have provided various resources and equipped scenes that are more conducive to teaching in open universities. Knowledge acquisition and teaching channels have been expanded. Teaching methods, teaching modes and teaching ideas have been innovated and developed, in addition to breakthroughs in the traditional mode of knowledge teaching and transmission. Therefore, it is necessary to update teaching ideas and reconstruct the mode of knowledge transmission. Under the teaching scene of AI, teachers become guides, organizers and coordinators of students' learning. A carrier function of teachers' knowledge transmission has changed greatly, and teachers have become managers. Teachers' teaching in open universities tends to carry out teaching activities together with students. Teachers also play a role of activity organization and psychological counseling, and their function of guiding students to learn knowledge and master methods is enhanced. Open university teachers need to focus on the relationship between their own knowledge transfer mode and content, master effective methods and actively use new technologies, so that their own teaching and equipment can be organically integrated, and they will find better teaching methods, in addition to improvement in teaching efficiency and students' learning efficiency.

3.5 Increase Research Investment in AI and Online Teaching

In the era of AI, the professional development of open university teachers needs to increase the research investment in artificial functions and online teaching. The main support of open university teaching is the network, which requires a deeper understanding and research on the auxiliary facilities of AI and online teaching. In view of changes in the current teaching scene, it is necessary to increase the investment in online teaching research and the improvement of teaching functions by AI. During remote education, enhancement of scientific research strength must be focused on. Teachers should constantly improve their own quality, teaching and quality. Besides the continuous improvement and enrichment of their own

knowledge, they need to rely on the advantages of AI. In actual teaching and research, it is necessary to combine the actual teaching in open universities, strengthen the integration between AI and specialized courses, and focus on improving teaching through AI facilities to make teaching smoother. Through AI, it is possible to strengthen the analysis of teaching, explore the actual demand of teaching, and practice the teaching research of the mode.

3.6 Establish an Intelligent Learning System of Human-Computer Interactions

In the era of AI, teachers' professional development in open universities needs to establish a human-computer interactive intelligent learning system. Under the teaching scene of AI, teachers in open universities must learn new skills when implementing teaching. In addition, AI-assisted teaching also needs to be continuously constructed, thus forming a scene of intelligent learning of human-computer interaction. Teachers can improve their technical literacy through continuous learning, so as to promote an interactive learning system between intelligent facilities and teachers. In this way, intelligent facilities can share a part of teaching tasks. The establishment of a human-computer interaction mode for open university teachers needs to be started from three aspects, namely technology, collaboration and social network. Teachers can make full use of their own advantages in mastering knowledge and the objective and technical strength advantages of AI, and form diversified, large-scale and further cooperation through complementary application of both advantages. They can spread out their own time and energy, focus on students' emotional attitudes and values, constantly update the cognitive system, improve the knowledge structure, form resource sharing and human-computer interaction, enhance teaching quality and ability, and promote the development of collaborative lesson preparation and teaching research.

4. CONCLUSION

As mentioned above, the rapid development of AI in higher education has provided a brand-new perspective and mindset for the professional development of teachers in open universities. Therefore, we must change the concept of teachers' professional development in time, keep a foothold in the development trend and new requirements of continuous integration of AI and higher education, constantly reveal the special logic of teachers' professional development in open universities in depth, and continually transform this special logic into practical training plans, assessment mechanisms and development environments for teachers' professional development in the educational practice. Only in this way can teachers' professional development in open universities be realized effectively.

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