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Content Optimization of Teaching Evaluation Scale for College Teachers with Emerging of Artificial Intelligence: A Case Study

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Abstract: This paper uses the Teacher Evaluation Scale for Higher Education Teachers in the Context of Artificial Intelligence (AI) as the basis for problem elucidation and explores AI-induced changes in teaching and learning through the medium of evaluation. Teachers' roles need to be more comprehensive and flexible than in the past to cope with the diversified teaching under the participation of AI; teachers need to insist on and continuously improve their humanistic qualities to answer to the higher spiritual needs of students; while using AI to assist in teaching, teachers need to keep abreast of the development, and control the limit of students' use, to avoid the indiscriminate use of AI caused by the eyeless worship. Teaching should use science and technology to discover more methods of knowledge transfer, showing students the details of knowledge application and providing students with a platform for high-level exchanges; Learning practice cannot be replaced by AI, which should become the practice of the assistant rather than a replacement. Current evaluation scales need to be more refined and precise for teachers and teachers and provide effective measures to deal with the educational problems of AI.

Keywords: teacher evaluation, teaching relationship, artificial intelligence

1. Introduction

Advances in artificial intelligence (AI) technology have opened new doors in the field of education, especially the disruptive innovation of ChatGPT, which has stimulated people to pay attention to the changes in the field of education. Pedagogical research has pointed out that higher education is undergoing profound changes and innovations in the teaching and learning environment, teaching mode, teaching content, teaching evaluation, government mode, and the role of teachers [1]. In recent years, relevant discussions have increasingly debated how teachers develop and how students reply in the academic community.

Some scholars believe that teachers must act as partners of students and provide emotional support and humanistic care; some scholars focus on the problems that are not easy to find and solve in traditional teaching and believe that teachers need to have the ability to interpret and analyze data, the ability to assess propositions and the ability to interpret and guide the practice of

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teaching concerning the principles of educational theories. However, most of these studies focus on the "supply side" of teachers and neglect to explore the "demand side" from the perspective of students. In the context of AI applications, students need to actively think about their learning goals and spontaneously generate expectations for teachers' teaching, but the content of current assessment scales often lags behind the needs of educational development. Therefore, it is necessary to start from the student's needs, enter the students' perspective through assessment, give full play to the guiding role of students' assessment on teachers' teaching habits, and try to find the focus and innovation of assessment content reconstruction.

This case study mainly sums up the structural framework and focuses on the content of the student evaluation form in the case by classifying the content of the two evaluation scales for theoretical and practical classes of students at Henan Normal University, makes assumptions about possible problems; through the summary in addition analysis of relevant literature, it analyses the transformation of teachers' responsibilities and the problems and challenges of teaching in the context of the application of AI, also puts forward modification suggestions for the case.

This paper starts from the perspective of students' needs, pays attention to the transformation of students' and teachers' educational functions, and emphasizes the enhancement of college teachers' humanistic qualities in the background of artificial intelligence applications. Explores the problems in the current evaluation of teaching, simultaneously updates and abandons the drawbacks of the current evaluation of college teachers' teaching, to improve the effectiveness of teachers' teaching, helping students efficiently cope with the challenges of the new era.

2. Case Description

2.1. Research Design

In this paper, "Henan Normal University classroom teaching quality evaluation form" is the object of analysis, through the discussion to deal with the development of teachers, teaching relationship changes and other aspects of the crisis, reflecting the overall need for the reconstruction of the evaluation system of domestic colleges and universities in the context of the application of artificial intelligence.

This paper adopts the case study method, digging deep into the case and classifying the different indicators, which is useful to extract the viewpoints and preferences of the case, meanwhile, form an abstract and in-depth understanding of the case; By combing the theoretical data in the literature to find the comparison between the case model and the point of the literature, identify the problems that need to be solved.

2.2. Scales Description

2.2.1. Content and Characteristics of the Theory Course Evaluation Scale

The theory Course Evaluation Scale is divided into a total of 4 modules, 4 evaluation levels and a total of 17 evaluation indicators. Taking the object to evaluate indexes are directly directed as the differentiation criterion, there are 7 evaluation indexes related to individual teachers and 10 evaluation indexes related to the content of the teaching process, among which there are 3 items of students' self-learning feedback. Teachers' teaching attitude has 5 items, including teaching discipline attitude, teacher-student, and communication attitude, of which the teaching discipline attitude related description is higher, teacher-student communication attitude includes classroom atmosphere, after-class Q&A, teaching method improvement 3 indicators; teaching content has 4 items, including basic theoretical content, innovative theoretical content, the basic theoretical content related description of a total of 3 accounted for a high percentage of the innovative content

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is limited to “Teaching methods and means are divided into 5 items, 3 general teaching methods account for a high percentage, and customized teaching includes “flexible teaching methods” and “tailor-made teaching”. Teaching effectiveness is divided into 3 items, and students mainly gave feedback on learning effectiveness and moral development, in which learning effectiveness appeared in all 3 indicators, while character quality was rarely described.

2.2.2. Content and Characteristics of the Practical Course Evaluation Scale

The practical Course Evaluation Scale is divided into a total of 4 modules, four evaluation levels, 16 modules of evaluation indicators, 5 modules of teacher personal-related evaluations, and 11 modules of teaching process-related evaluations, of which 3 modules are student self-learning feedback. Teaching attitude evaluation has 5 module items, which are the same as the evaluation indexes of theoretical courses, with the addition of the content of targeted discovery and solution of students’ problems; the teaching content module includes the basic and innovative practical content, with the basic content accounting for a higher proportion, and the innovative content limited to the “discipline”; the teaching methods and means module is similar to the theoretical courses; the basic content is more similar, and the innovative content is limited to the “discipline”; the teaching methods and means module is similar to the theoretical courses. The teaching methods and means module has a high degree of similarity with the theoretical courses, which is a general practical teaching requirement, with only one article focusing on customized cultivation; students’ feedback on the effect of practice focuses on the content of practice itself, and students’ feedback on the results of practice includes three categories, namely, “standardized”, “flexible”, “comprehensive” and “comprehensive”. The students’ feedback on the effect of practice focuses on the content of practice itself, and the students’ feedback on the results of practice includes “standardized”, “flexible” and “comprehensive”.

2.3. Results

The teaching evaluation scale of the school has more similarities between the contents of practical and theoretical courses, less personal evaluation of teachers, accounting for about 36 % of the total, more evaluation related to the teaching process, accounting for about 64 % of the total, and the least self-feedback from students, accounting for only 19 % of the total. Teachers’ evaluation mainly focuses on teachers’ basic competence, and the only two requirements for innovative competence are “continuous improvement of teaching methods” and “introduction of new achievements in the discipline”; The evaluation of teachers’ competence mainly focuses on the requirements for teaching skills, and the requirements for teachers’ emotion mainly focus on ‘patience’, ‘enthusiasm’, ‘passion’, ‘enthusiasm’, and ‘patience’. Teachers’ emotional requirements are mainly ‘patience’, ‘enthusiasm’ and ‘infectiousness’, and the relevant vocabulary is scarce and accounts for a very low percentage. Evaluations of the teaching process covered the general teaching aspects of management, delivery, practice, feedback and updating, with a total of 11 modules evaluations related to management and delivery, which accounted for 73% of the total number of teaching evaluations, and fewer related to feedback and updating. Based on this summary the following questions are raised:

Both of the scales demonstrate relatively simple conditions, which have been outdated under the newest technology trend. On the whole, the content of the evaluation scales for theoretical and practical courses is repetition, with fewer distinctive questions, students cannot catch on the key issues when they fill in the scales. In this case, obscure and imprecise question direction easily decreases the information collecting validity. For the teacher individual evaluation, which pays too much attention to teachers’ practical skills and neglects teachers’ humanistic qualities, the content

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of basic procedures is much more excessive but less higher-level. For the teaching evaluation, what's more, more than half of the modules concentrate on basic teaching teaches, however, to reply to the multi-angles teaching revolution and teaching crisis, advanced methods need to be applied in classes, so need the scales.

3. Pedagogical Changes and Challenges under the Emergence of Artificial Intelligence

3.1. Multidimensional Transmission of Knowledge

Artificial intelligence technology gives learners diversified knowledge acquisition channels in the process of knowledge transfer, and smart terminals represented by ChatGPT formally challenge teachers' responsibility of "teaching" by sharing highly accurate, highly structured, and highly explicit knowledge sets on cloud database platforms [2]. Teachers, as the defenders of this attack and defence game, need to make immediate responses - abandonment or change.

Specifically, this includes the following two aspects: First, the teacher's knowledge discourse is weakened in the process of knowledge transfer, which is determined by the rationality of the learning process itself, whether it is Socrates in the West or Confucius in the East, the knowledge discourse is the root of the teacher's reputation and respect for thousands of years, which is destined to be a long-lasting battle of teacher's self-worth remodelling [3]; Secondly, the transfer of dynamic knowledge has gradually become mainstream, and the static knowledge has become a low-cost storehouse of knowledge, which has become the mainstream of knowledge transfer. Static knowledge is stored in books, hard drives and databases at a low cost, and artificial intelligence technology has greatly improved the efficiency of static knowledge acquisition and is occupying the corresponding educational links at an unstoppable speed [2]. Dynamic knowledge, with its high degree of flexibility and humanity, needs to be integrated with the human brain's analysis of social experience and practical experience, and compared to highly abstract static knowledge, dynamic knowledge is in a state of constant change influenced by figurative factors. Compared to highly abstract static knowledge, dynamic knowledge is knowledge in flux, constantly influenced by concrete factors and subject to instant change in different countries, objects and environments, so the transmission of dynamic knowledge, which is centred on application, transfer, and creation, is a strategic high ground in which teachers have an absolute advantage.

Therefore, teachers in the age of artificial intelligence must change from the transmitter of objective knowledge to the constructor of knowledge, leading students to critique, reflect, innovate, and apply knowledge, and this multidimensional knowledge construction mainly includes the following perspectives.

3.2. Multiple Associations of Knowledge

There are three levels of knowledge connection, not only the knowledge connection within the subject but also the connection between the subject and the subject, between the subject and the phenomenon. Teachers should not limit their vision to the subject they teach but should try to break down the barriers of the subject, pay attention to the cross-application and transfer of knowledge, and maximise the dynamic operation of knowledge [4].

3.2.1. Panoramic Overview of Knowledge

Social constructivism theory suggests that knowledge construction is formed in the interaction between the external environment and the internal psychology, the current preference of colleges and universities for point breakthrough curriculum, in which students are not able to complete all the credits before the application of the knowledge they have learnt to produce a systematic

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understanding of the application of the way and link. Teachers construct a panoramic environment for students to present the logic and overall picture of knowledge, so that students can take the lead in recognising the significance of things based on their own experiences and perceptions, and teachers can assist students in setting learning goals with personal characteristics.

3.2.2. Interactive Field of Knowledge

The interactive field gives knowledge construction a certain degree of uncertainty and contingency, and students can acquire constantly changing knowledge resources through continuous collective activities, which come from collaboration and communication. Compared with the constancy and objectivity of static theoretical knowledge, knowledge in the interactive field can be understood differently by students with different personal experiences and individual logical modes, to some extent, students are discoverers of potential knowledge, which teachers need to guide their thinking and assist in summarising [5].

3.3. The Traditional Way of Teacher-student Interaction Is Challenged

The traditional teaching method is based on the teacher's narration, students passively accept the transmission of knowledge, and everything is smooth until the use of Artificial Intelligence Technology highlights problems in teaching and learning interactions. AI provides students with personalized learning resources catered to their learning characteristics, issues, and interests [6], due to dominating static knowledge transfer gradually being replaced by artificial intelligence, opportunities to interact with students' psychology and doubts by teachers are compressed. The intervention of AI technologies breaks through the stable part of the original classroom communication activity, and the value of the new pedagogical dialogue lies in its development, creativity, uncertainty and pushing the boundaries.

But such changes need to be qualified by students. Teachers' communication is based on information about the student's level of needs, areas of physical and mental development, and differences in their motivation to participate, which is aimed at giving them the ability and methodology to analyse, select, update, and create knowledge. To meet students' different needs, the "three-in-one" model of interaction is used, based on the differences in students' existing learning experiences, namely, kinesthetic communication, seminar communication, and practical training communication. Among them, the dynamic view communication is the process of absorbing the holistic knowledge acquired by students in the way of questioning before class, and enhancing their sense of active thinking by guiding students to become questioners; the seminar communication is the process of internalising and absorbing the knowledge of the course by students in the way of discussing, critiquing and communicating in the class; the project-based communication is generally in the post-course, and the students participate in the project-based training as a means of transforming the knowledge and theory of the course from the experience and knowledge melting process of the practice [7]. The Project-based communication is generally after the class.

3.4. Increased Teacher Quality Requirements

From the point of view of the connotation of "cultivating morality and educating people", education is basically about "moralising" people, cultivating socialist builders and successors who are all-rounded in morality, intelligence, physicality, aesthetics and work. But Artificial intelligence, which emphasises efficiency, will also not have the all-round development as its goal like human beings, in other words, the humanistic qualities of teachers not only have irreplaceable uniqueness but need to be updated to keep up with technological evolution [8].

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3.4.1. New Explanation of "Human-centredness"

What is "human-centredness"? standing in the humanistic perspective and the historical thought, which is to strengthen the attention to the people's happiness. But in the field of education, nowadays, the spread of new technologies has made some occupations under horribleness of replaceability, the vocational aspirations and irreplaceable competencies of students in higher education are more highly considered, which requires teachers to pay more attention to students' personalities and to set up teaching from the perspective of their practical needs [8]. Importantly, teachers need to open up the channels of communication, to pacify and help students establish the courage of the problem; In the formulation of teaching plans, teachers should first collect students' opinions patiently; when students are restricted by the framework of the classroom teaching, or have objections to the form of learning, learning methods, etc. Besides, teachers need to conduct a detailed investigation and research on students' learning needs and the direction of their choices, involving collecting and organising information on the needs of students for practical data support of various changes. Organise the information from students' needs, and then provide practical data support for various changes.

3.4.2. Comprehensive Information Processing Capacity

Teachers' information and data processing capability is the comprehensive ability to optimise the teaching mode. To improve digital teaching practice, teachers first need to have an open mind to treat all new technological applications and understand the underlying logic of new technologies instantly and accurately. To serve as a model, they should use Data-processing tools or relative technologies to collect, and analyse to make accurate teaching evaluations and decisions, optimising the teaching model [9]. Teachers likewise need to be aware of the linkages between multiple pedagogical artefacts, to grasp the strengths and weaknesses of AI teaching aids, and to circumvent the possible negative impacts of efficient AI.

3.4.3. Acuminous Sense of Creativity

Currently, Artificial intelligence technology is both a source of creativity and a tomb of inspiration, however, depending on the teacher's guidance. The New York University's creativity formula suggests that creative personality is a key moderating variable in the growth of innovative individuals [10]. So, what do teachers need to do? firstly, cutting-edge topics with no specific disciplinary affiliation and proven programmes should be selected to enable students to overcome fixation effects and knowledge barriers through independent exploration, to stimulate students' motivation to achieve and sense of adventure. What's more, it empowers students with the desire to challenge and set higher degrees of creative goals to stimulate their expectations to explore the sense of mission. Finally, awakening humanistic concern and nationalism, emphasising that the results of creativity directly serve the development of the world, the country and the society.

3.5. Serious Homogenization of Teaching Content

Artificial intelligence platform retains a large number of static knowledge resources, at this time, both the content of the teacher's lectures and the artificial intelligence platform is the same as the teacher's lectures, homogenised content is likely to lead to a waste of resources which easily affect the learning efficiency of students.

Firstly, there is a need to change the teaching mode. Some scholars believe that carrying out collaborative teaching is an important way to solve the problem of homogenisation, and they have endeavoured to break through the barriers of time and space in the teaching case of English-MOOC

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lessons to realise a two-teacher classroom teaching method [11]. This kind of multi-teacher collaborative teaching method can not only effectively enhance the teaching effect and classroom interest, but also provide a platform for teachers to discuss with each other and improve together. Some new course models are still being tested.

Secondly, there is a need to take advantage of technology. By making full use of modern teaching resources and technology, teachers can design valuable and difficult questions to mobilize students' initiative and enthusiasm, producing a collision of ideas in communication. This process can also generate unpredictable teaching results and teaching goals. On this basis, teachers can get cues by, for example, asking AI questions related to the discipline, leading to further in-depth discussions and more complex questions. Then, students are likely to explore corresponding solutions to complex questions with teachers, which is conducive to cultivating and exercising students' "higher-level thinking".

3.6. "Technology-dependent" Interferes with Teaching Practice

The integration of artificial intelligence applications and the field of education has greatly accelerated the process of education digitisation, but blind and disorderly education digitisation will lead to the deviation of the education goal, the biggest breakthrough of the GPT-4 is to have a certain degree of migratory thinking ability and analytical awareness skills, which assist in the enhancement of the efficiency of education at the same time easy to let the educated fall into the "technology-dependent" misunderstanding [12].

The "digital nature" of AI deprives students of their initiative. Students, already have a certain degree of critical thinking and self-management ability during higher education, but in the process of accelerating the cognitive process of the world, artificial intelligence technology helps them overcome the contradiction between the cognitive finiteness and the infinity of the world, each student is abstracted as digital identity, and the digital identity is abstracted as a data node, therefore, the algorithms can be formulated in a very short period to a complete learning plan, students unconsciously let the digital identity of the students. Students unconsciously cede their initiatives, from the explorer of the learning process to the bearer of the will of the machine, but active planning and participation in the activities is also one the important aspects of practical education, the reliance on mechanical intelligence also interferes with the shaping of the student's independent personality.

The "intelligence" of artificial intelligence impacts students' views of right and wrong. In primary education, students gradually change from believing in teachers to believing in the truth, and when this highly intelligent object is introduced into higher education, students are prone to confuse the belief in the truth with the worship of "intelligence", unconsciously underestimate their self-judgment and critical power, and always seek the help of AI at the first time, and the result of intelligent search replaces the students' self-reflection and examination. Intelligent search results replace students' self-reflection and examination, and students are prone to enter the misunderstanding of "practice is useless" or "practice is secondary".

The "permeability" of AI blurs students' subjectivity. Artificial intelligence is being rapidly integrated into all aspects of practical education imperceptibly, and the necessary aspects of the practice such as data collection and data processing are gradually being converted from "human power" to "intellectual power", despite the efficiency advantages brought about by technological innovation. The application of AI in the teaching scene cannot be "only efficiency theory", intelligent facilities can easily lead students in the practice of reversing the means and ends. They are prone to the skilled use of tools mistaken for their ability to improve, and AI has become a kind of "control and domination tool" to become the main body of practical teaching. Artificial intelligence becomes a kind of "control and domination tool" to become the main body of practical

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teaching, which is contrary to the basic purpose of educational practice focusing on the enhancement of students' abilities.

4. Optimization of the Evaluation Scale

4.1. Some Parts That Need to Be Emphasized

Based on the above analysis of the transformation of teachers' responsibilities and the problems of teaching in the context of the application of AI, this study argues that the teaching evaluation scale in this case should be revised. Teachers under the influence of AI technology need to pay attention to their ability to improve, especially in humanistic care. The evaluation scale lacks the evaluation of teachers' humanistic care and overemphasizes teachers' teaching skills and practical skills, which makes the evaluation content unbalanced. It is specifically reflected in the lack of evaluation of students' emotional state and learning needs, such as the lack of teachers' reflection of students' learning needs in terms of teaching attitude. Therefore, we should add to the teaching attitude that " Teachers will take the initiative to ask us for comments and suggestions on curriculum design improvement" and "Teachers can student adjust their teaching strategies promptly based on the content of their feedback ", to increase the proportion of teachers' humanistic care in the content of evaluation indicators and make it more balanced.

4.2. Some Parts That Need to Be Added

Based on the requirements for teachers in the age of artificial intelligence, this paper argues that the following elements need to be added to the evaluation scale to promote a comprehensive evaluation of teachers. For example, whether the content taught by the teacher can be differentiated from the resources of the AI platform; whether teachers use large-scale AI demonstrations instead of practical exercises; whether the teacher focuses on the development of student's creative skills; whether teachers have a clear understanding of the extent to which students use AI; whether teachers limit the extent of students' use; whether the teacher's teaching is student-centred.

5. Conclusion

The article focuses on analysing the impact of AI technology on various aspects of education, which is ultimately visualised in the form of assessment scales. The study focuses on two main points in the field of education: teachers and curriculum.

Teachers under the influence of AI technology need to pay attention to their ability to improve, mainly including professional ability and humanistic care. They need to be student-centred and pay close attention to students' needs in terms of professional competence, from focusing on the classes to individuals, paying attention to the specialised cultivation of the individual; they also need to set up an interdisciplinary vision and pay attention to the migration and correlation between disciplines. What's more, they need to pay more attention to the emotional state of students provide immediate encouragement and assistance, pay attention to the urgent needs of students and make immediate changes to the teaching process through student feedback.

To cope with the risks and challenges, the course content needs to be updated and revised, abandoning overly homogenised clichés, focusing on the dynamic knowledge of AI that is difficult to operate, and avoiding excessive encroachment of AI technology into the field of practice, to ensure the completeness and diversity of the practical courses.

This study is based on the relevant literature and cases and failed to research the students of Henan Normal University. Conclusions of the study are universal but lack practical testing, the future direction of the study should pay more attention to the differences between different schools.

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With the background of the specific policies or teaching methods of the relevant schools, the results of the study will be of more practical value.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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