

On Student-Centered Process Assessment in The Context of Higher Education Reform Empowered with Artificial Intelligence

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ABSTRACT: Establishing a student-centered teaching paradigm in higher education is the core issue of current higher education reform. With the development of AI technology and the widespread application of AI tools in the field of education, it is an important issue to consider how to use AI tools to reform the traditional teacher centered student academic evaluation model. Exploring the goals and principles of a student-centered process evaluation model in theory, as well as the necessity and feasibility of AI empowering process evaluation, can provide a theoretical basis for reforming the academic evaluation system of higher education under the development trend of AI empowering higher education.

KEYWORDS: Higher education, Process assessment, Student-centered

1. INTRODUCTION

Under the traditional education model, the empiricist concept that “students passively receive knowledge transmission from teachers” has long dominated our higher education. Since the 1980s, the proposal and promotion of the student-centered higher education teaching paradigm have triggered a wave of reforms in the teaching ideology, concepts, and methods of higher education. Entering the 2000s, China has also entered a new era of higher education reform centered on “the all-around development of individuals”. In this process, the traditional student academic performance evaluation system, which uses a single summative assessment score as the evaluation criterion, can no longer meet the teaching goal of comprehensively improving the comprehensive qualities of educational targets. Therefore, process evaluation has been proposed and discussed, and was officially approved and announced as an educational term by the National Commission for Terminology in Sciences and Technologies in 2013. Process evaluation is a value judgment characterized by emphasizing the changes in the development process of the evaluation object. It is a comprehensive evaluation of students’ performance during the learning process, the achievements they have made, and the development of their emotions, attitudes, strategies, etc. Its role in higher education has been increasingly recognized by educators.

Currently, the domestic academic community has not conducted systematic theoretical research on process evaluation. The current teaching reforms mainly focus on the specific content, methods, and steps of process evaluation for a certain course or major, but there is a lack of universally applicable research results. Meanwhile, scholars’ research perspectives on process evaluation are mainly concentrated at the tool level. They do not regard it as an organic part of teaching practice and ignore the internal logical relationship between process evaluation and the achievement of teaching goals, the improvement of teaching effects, and the promotion of students’ autonomous learning. The purpose of this study is to discuss and construct a student-centered process evaluation system from the aspects of systematic theoretical support and standardized operation procedures. The establishment of this system will contribute to the in-depth integration of process evaluation and the student-centered teaching paradigm, and enhance the scientificity and rationality of the new paradigm of higher education teaching evaluation.

2. THE IMPORTANCE OF BUILDING A STUDENT-CENTERED PROCESS EVALUATION MODEL

Since the concept of formative assessment was put forward, many universities have carried out reforms in the academic evaluation system and established a new evaluation method that combines formative assessment with summative assessment. Compared with the traditional single-summative assessment system, this new evaluation method can more comprehensively and accurately reflect students’ learning processes and actual abilities. It can also stimulate students’ learning motivation and enthusiasm, and promote the improvement of teaching methods and the enhancement of teaching quality.

Summative assessment often only focuses on students’ performance at a certain point in time, which easily leads students to study only for exams and neglect their usual learning accumulation and the real improvement of abilities. In contrast, in addition to

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considering students' final academic scores, the new evaluation method continuously observes, records, and analyzes students' performance during the learning process through formative assessment. This includes various factors such as classroom participation, homework completion, and teamwork abilities, thus providing more abundant and three-dimensional evaluation information. The introduction of the formative assessment method can guide students to actively participate in classroom discussions, complete their homework seriously, and conduct self-reflection actively. This continuous attention and feedback can enhance students' sense of learning responsibility and self-management ability, enabling them to continuously gain a sense of achievement and satisfaction during the learning process, and thus maintain long-lasting learning motivation. From the teachers' perspective, formative assessment helps teachers gain a deeper understanding of students' learning dynamics and promptly identify and solve the problems students encounter during the learning process. Teachers can also obtain timely feedback from students on teaching content and methods, which is helpful for them to reflect on what is effective and what needs adjustment and improvement. The feedback mechanism in formative assessment helps teachers evaluate teaching strategies, optimize teaching designs, improve the pertinence and effectiveness of teaching, and thereby enhance the overall teaching quality. At the same time, formative assessment also provides teachers with more opportunities to interact with students, strengthening the communication and understanding between teachers and students and contributing to the establishment of a more harmonious and positive teaching atmosphere. The evaluation method that combines formative assessment with summative assessment is more in line with modern educational concepts and development trends. It can comprehensively evaluate students' development in various aspects such as knowledge, skills, attitudes, and values through diversified evaluation means, thus providing more solid support and guidance for students' future development.

In practice, there are some common misunderstandings when universities conduct formative assessment. These misunderstandings often stem from misinterpretations of the concept of formative assessment or deviations in implementation. Some universities simply equate formative assessment with increasing the proportion of usual grades, while neglecting the diversity and pertinence of assessment. Although this approach seemingly increases the attention to the learning process, it actually fails to touch on the core of formative assessment, which is to comprehensively reflect students' learning dynamics and ability development through diversified assessment methods. Some universities overly rely on quantitative indicators such as attendance rates and the number of submitted assignments during the implementation of formative assessment, while ignoring the qualitative assessment of students' learning attitudes, thinking abilities, and innovative capabilities. This one-sided emphasis on quantitative data easily leads to the assessment becoming a mere formality and fails to truly promote the improvement of students' comprehensive qualities. In addition, some universities lack systematicness and coherence in formative assessment. The assessment criteria are unclear, and the feedback mechanism is imperfect, making it difficult for students to obtain effective guidance and directions for improvement.

Student-centered formative assessment not only focuses on students' learning outcomes but also attaches great importance to their learning processes. Through continuous attention and feedback, it helps students discover their own strengths and weaknesses, and stimulates their learning motivation and self-management abilities. This assessment method can guide students to change from passively receiving knowledge to actively participating in learning, and cultivate their critical thinking, innovative capabilities, and teamwork spirit, so as to better adapt to the needs of future society. From the perspective of educational goals, formative assessment must be student-centered because the fundamental purpose of education is to promote the all-around development of students, and formative assessment is an important means to achieve this goal. The original intention of formative assessment is to help students find problems, improve their learning, and promote their growth. However, if the assessment system is divorced from the core position of students, it is likely to become a formal tool and lose its due educational significance.

If the assessment system overly focuses on external standards or forms, it often ignores students' internal needs and diversity. Some assessment methods may rely on unified quantitative indicators such as attendance rates, the number of submitted assignments, or exam scores. Although these indicators are convenient for statistics and comparison, they cannot comprehensively reflect students' learning status and ability development. The learning process of students is complex and multi-dimensional. Different students have different learning styles, interests, and ability bases. If the assessment system fails to make flexible adjustments according to these differences, the assessment results will be one-sided and cannot truly reflect students' actual learning effects. This assessment method not only fails to help students find problems but may also cover up their real learning needs, leading to a disconnection between the assessment and students' actual learning.

The core of formative assessment lies in helping students find problems and improve their learning methods through continuous attention and feedback, and helping students identify their own strengths and weaknesses through feedback and providing them with directions for improvement. However, if the assessment design is only from the perspective of teachers or administrators and the assessment only stays at the level of grading or ranking, it will increase students' learning burden. If the assessment method overly emphasizes ranking or competition, it will cause students to focus on how to cope with the assessment rather than how to truly learn. It not only fails to stimulate students' learning motivation but may also weaken their learning interest and initiative, and even trigger anxiety and resistance. In the long run, students may lose enthusiasm for learning, and the effectiveness of the assessment will also be greatly reduced. If students can only learn about their own performance through the assessment but cannot get feedback on

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problems or improvement strategies, such an assessment has very limited significance for students and may also cause confusion among students. Then the incentive and guiding role of the assessment will be out of the question.

If the formative assessment system is not student-centered, teachers will not be able to accurately grasp students' learning dynamics and needs through the assessment results, and thus it will be difficult for them to adjust teaching content and methods in a timely manner. Teachers will not be able to make targeted teaching improvements based on the assessment results, ultimately affecting the teaching effect. This disconnection between assessment and teaching not only fails to promote students' learning but may also make the teaching process a mere formality, making it difficult to achieve the real educational goals.

3. THE GOALS AND PRINCIPLES OF STUDENT-CENTERED PROCESS EVALUATION

Learning is a dynamic process rather than a static outcome. This concept determines that the core of formative assessment lies in inferring whether learning has truly occurred by observing students' behaviors and performances, as well as whether there have been positive changes in students' cognition, abilities, and attitudes before and after teaching activities. The overall goal of formative assessment is to help students achieve comprehensive and in-depth growth through continuous attention, feedback, and guidance. This goal not only focuses on students' mastery of knowledge but also attaches great importance to the development of their thinking skills, innovation abilities, cooperation skills, and self-management abilities during the learning process. However, achieving the overall goal of formative assessment is not an overnight task. It is composed of several interrelated sub-goals. These sub-goals are the concretization and refinement of the overall goal, providing a clear direction and path for the implementation of formative assessment.

One of the sub-goals of formative assessment is to comprehensively reflect students' learning processes. This means that assessment should not only focus on students' final grades but also on their participation, effort, and coping strategies when facing difficulties in learning. Through diverse assessment methods such as classroom performance, group discussions, and project assignments, teachers can gain a more comprehensive understanding of students' learning states and thus provide more targeted guidance. The second sub-goal is to stimulate students' learning motivation. Formative assessment helps students build self-confidence and enhance their learning interest and initiative through timely feedback and positive incentives. Teachers can help students identify their progress and deficiencies through personalized feedback, thereby inspiring their motivation to continuously improve. The third sub-goal is to promote teaching improvement. Formative assessment is not only an evaluation of students but also a test of teaching effectiveness. Through the assessment results, teachers can identify problems in teaching and adjust teaching strategies to better meet students' learning needs. The relationship between the overall goal and the sub-goals is complementary and inseparable. The overall goal provides macro-guidance for the sub-goals, clarifying the fundamental direction of formative assessment. In contrast, the sub-goals are the specific implementation of the overall goal. Through a series of specific assessment activities and feedback mechanisms, the overall goal of promoting students' all-around development is gradually achieved.

To achieve the above goals, when designing the formative evaluation system, colleges and universities should adhere to the following basic principles:

Firstly, the principle of comprehensiveness in evaluation requires that evaluation not only focuses on students' academic performance but also covers various aspects such as their learning attitudes, thinking abilities, cooperation skills, and emotional experiences. This principle is highly consistent with the holistic development concept emphasized in the student-centered teaching model. In this model, teaching is no longer confined to knowledge transmission but focuses on cultivating students' comprehensive qualities and helping them achieve all-around development in cognitive, emotional, and social aspects. Therefore, the evaluation design based on the comprehensiveness principle can better support the realization of teaching goals and enable students to receive multi-dimensional attention and guidance during the learning process.

Secondly, the principle of individualization in evaluation emphasizes that evaluation should be flexibly adjusted according to students' individual differences, respecting each student's learning style, interests, and ability foundation. This principle is complementary to the "teaching students in accordance with their aptitude" concept in the student-centered teaching model. In this model, teachers need to design differentiated teaching strategies according to students' characteristics to meet the learning needs of different students. The individualized evaluation can provide teachers with more accurate information about students, helping them better implement differentiated teaching. By observing students' performance in group discussions, teachers can discover the advantages of some students in cooperative learning and provide them with more opportunities to showcase and practice. This interaction between evaluation and teaching can not only improve students' learning outcomes but also enhance their learning confidence and motivation.

Thirdly, the principle of timeliness in evaluation requires that evaluation should be continuously carried out during the learning process, and students should be helped to identify problems and improve their learning methods through timely feedback. This principle is closely related to the dynamic adjustment concept in the student-centered teaching model. In this model, teachers need to continuously adjust teaching strategies according to students' learning progress to ensure the effectiveness of teaching activities. The timely evaluation can provide teachers with real-time information about students, helping them better grasp the teaching rhythm.

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Through classroom questions and discussions, teachers can promptly identify students' misunderstandings of certain knowledge points and conduct targeted explanations in subsequent teaching. This dynamic combination of evaluation and teaching can not only improve teaching efficiency but also help students better master learning content.

Fourthly, the principle of development in evaluation emphasizes that evaluation should aim to promote students' development rather than simply rank or grade them. This principle is highly consistent with the student growth-centered concept in the student-centered teaching model. In this model, the goal of teaching is to help students achieve self-improvement and ability development, rather than simply completing teaching tasks. The developmental evaluation can help students clarify their progress directions and stimulate their learning motivation through positive incentives and guidance. Through the evaluation of project assignments, teachers can provide students with specific improvement suggestions to help them enhance their practical abilities and innovative thinking. This combination of evaluation and teaching can not only promote students' ability development but also cultivate their self-learning ability and lifelong learning awareness.

There is a profound logical connection between the basic principles of student-centered process teaching evaluation and the student-centered teaching model. These principles not only provide scientific guidance for evaluation design, but also provide important support for the effective implementation of teaching models. Through comprehensive, personalized, timely, and developmental evaluations, teachers can better focus on students' learning processes, meet their learning needs, and promote their all-round development. The organic integration of evaluation and teaching is the key to realizing the student-centered educational philosophy.

4. THE NECESSITY AND FEASIBILITY OF AI EMPOWERING STUDENT-CENTERED PROCESS EVALUATION

When exploring the necessity of AI-enabled formative evaluation, we need to conduct in-depth analyses from multiple dimensions, including the internal needs of educational development, the transformation of students' learning models, and the improvement of the educational evaluation system. The core of formative evaluation lies in helping students achieve comprehensive and in-depth growth through continuous attention, feedback, and guidance. The introduction of AI technology is precisely to address the many challenges this goal faces in the traditional education model, thus providing necessary support for the optimization of the educational evaluation system.

Firstly, modern education is moving towards the directions of personalization, diversification, and lifelong learning. Students' learning needs and learning models are constantly changing. Traditional teaching evaluation methods are often limited to standardized tests and unified evaluation criteria, which are difficult to adapt to students' individual differences and diverse needs. AI technology can deeply mine students' learning behaviors, cognitive levels, and emotional states through big-data analysis and intelligent algorithms, thereby providing teachers with more accurate personalized evaluation support. This support not only helps teachers better understand students' learning characteristics but also enables them to customize learning paths and feedback content for each student, thus meeting their personalized development needs. Therefore, AI-enabled formative evaluation is an inevitable choice to adapt to the trend of educational development and implement the student-centered teaching concept.

Secondly, the comprehensiveness and dynamism of formative evaluation require that the evaluation can cover the entire learning process of students and provide timely feedback and guidance. However, in the traditional teaching model, teachers are often limited by time and energy, making it difficult to continuously track and deeply analyze each student's learning process. AI technology can comprehensively record students' learning trajectories and instantly generate evaluation results through automated data collection and real-time analysis. This technology-supported dynamic evaluation mechanism not only helps teachers more efficiently monitor students' learning progress but also provides students with timely feedback and improvement suggestions, thus avoiding the accumulation of learning problems. Therefore, AI-enabled formative evaluation is a necessary means to improve the efficiency and effectiveness of evaluation and achieve the in-depth integration of teaching and evaluation.

In addition, the developmental goal of formative evaluation emphasizes that evaluation should be centered on promoting students' development, rather than simply ranking or grading students. In the traditional evaluation system, evaluation results are often simplified to scores or grades, which are difficult to fully reflect students' growth and progress. AI technology can more clearly present students' growth trajectories through long-term data tracking and trend analysis and provide scientific basis for their future learning plans. , an intelligent growth record system can record students' learning performance at different stages and generate visual growth reports to help students and teachers jointly formulate the next-step learning plans. This developmental evaluation method not only promotes students' ability improvement but also cultivates their self-learning awareness and lifelong learning ability. Therefore, AI-enabled formative evaluation is a necessary path to achieve students' all-around development and cultivate future talents.

Finally, educational equity is an important goal of educational development, while traditional evaluation methods often have difficulty taking into account the resource differences among different regions, schools, and students. AI technology can provide high-quality evaluation support for more students through intelligent evaluation tools and resource-sharing platforms, thus narrowing the educational gap. , an intelligent learning platform can provide students in remote areas with the same learning

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resources and evaluation services as those in urban areas, helping them obtain more equitable educational opportunities. Therefore, AI-enabled formative evaluation is a necessary measure to promote educational equity and achieve inclusive education.

When exploring the feasibility of AI-enabled formative evaluation, we need to conduct in-depth analyses from multiple dimensions, such as the maturity of technological development, the adaptability to educational scenarios, and the operability of implementation paths. The application of AI technology in the education field has made remarkable progress. Its capabilities in data collection, analysis, and feedback provide a solid technological foundation for the optimization of formative evaluation. The feasibility of this technological support is not only reflected in the realization of its functions but also in its in-depth integration with educational scenarios and the sustainability of practical applications.

Firstly, the capabilities of AI technology in data collection and processing provide technological guarantees for the comprehensiveness and dynamism of formative evaluation. Modern AI systems can use multi-modal data collection technologies to record real-time multi-dimensional information such as students' learning behaviors, interaction performances, and emotional states. , an intelligent classroom system can capture students' facial expressions, intonation, and classroom participation through cameras and sensors, thereby generating comprehensive learning analysis reports. This efficient data collection and processing ability enables teachers to have a more comprehensive understanding of students' learning processes and provides richer evidence for evaluation. Meanwhile, the automated analysis function of AI technology can significantly reduce teachers' workload, making formative evaluation more operable in actual teaching.

Secondly, the advantages of AI technology in personalized analysis provide technological support for the accuracy and adaptability of formative evaluation. Through machine learning and data mining algorithms, AI systems can automatically generate personalized evaluation results and feedback suggestions based on students' learning histories and behavior patterns. , an intelligent learning platform can identify students' weak knowledge points according to their homework performance and test scores and recommend targeted learning resources. This personalized analysis ability not only helps teachers better meet students' learning needs but also provides more accurate learning guidance for students, thus enhancing the effectiveness of formative evaluation.

In addition, the capabilities of AI technology in real-time feedback and dynamic adjustment provide technological support for the timeliness and flexibility of formative evaluation. Traditional evaluation methods often take a long time to generate results, while AI systems can generate evaluation feedback immediately through real-time data processing and automated analysis. , an intelligent homework correction system can generate a detailed evaluation report immediately after students submit their homework, pointing out their mistakes and improvement directions. This immediate feedback mechanism not only helps students quickly adjust their learning strategies but also provides teachers with a basis for dynamic teaching adjustment, thus enhancing the timeliness of formative evaluation.

Finally, the capabilities of AI technology in data visualization and developmental analysis provide technological support for the long-term tracking and trend prediction of formative evaluation. Through long-term data tracking and visualization analysis, AI systems can clearly present students' growth trajectories and provide a scientific basis for their future learning plans. , an intelligent growth record system can record students' learning performances at different stages and generate visual growth reports to help students and teachers jointly formulate the next-step learning plans. This developmental analysis ability not only promotes students' ability improvement but also provides a more scientific basis for educational decision-making, thus enhancing the sustainability of formative evaluation.

In conclusion, it is not only feasible but also necessary to empower formative teaching evaluation with AI technology. Guided by the principles of comprehensiveness, personalization, timeliness, and development, AI technology can provide educators with more efficient and accurate evaluation tools, thereby promoting the overall goal of students' all-around development to be achieved on a larger scale. This in-depth integration of technology and education can not only improve teaching quality but also provide new possibilities for educational equity and personalized development. In the context of educational digital transformation, AI-enabled formative teaching evaluation will become an important trend in future education development, providing strong support for cultivating future talents with lifelong learning abilities and innovative qualities.

5. RISKS AND COUNTERMEASURES OF AI EMPOWERING PROCESS ASSESSMENT

In the practice of AI-enabled formative evaluation, although technology has brought many conveniences and possibilities to educational evaluation, its potential risks cannot be ignored. Especially for student-centered evaluation methods, these risks may have a profound impact on students' growth, educational equity, and teaching ethics. Educators must be highly vigilant about these risks when introducing AI technology and take effective countermeasures in practice.

Firstly, the data dependence and algorithm limitations of AI technology may have a negative impact on students' personalized development. The core of formative evaluation lies in paying attention to students' individual differences and learning processes. However, the evaluation results of AI systems are often based on the analysis of large-scale data and algorithm operations. Nevertheless, the integrity of data and the accuracy of algorithms can be restricted by various factors. If an AI system only relies on students' academic performance or online behavior data while ignoring their emotional experiences, creativity, or social interaction

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abilities, the evaluation results may be one-sided and even mislead students' growth directions. In addition, algorithm design may have biases or limitations, such as unfair treatment of certain student groups or simplified processing of complex learning processes. Such technological limitations may cause the evaluation results to deviate from students' actual development needs, thus weakening the original intention of formative evaluation.

Secondly, the privacy and data security issues of AI technology may pose threats to students' rights and interests. Formative evaluation requires the collection and analysis of students' multi-dimensional data, including learning behaviors, emotional states, and even biometric information. If there are no strict security measures during the collection and storage of this data, it may lead to the leakage or abuse of students' privacy. , if the facial expressions or voice data of students recorded by an intelligent classroom system are misused or leaked, it may have a negative impact on students' mental health and social relationships. Moreover, issues regarding data ownership and usage rights may also trigger ethical disputes. Educators must ensure that the data usage of AI systems complies with ethical norms and take effective measures to protect students' privacy and data security.

In addition, over-reliance on AI technology may weaken educators' professional judgment and teaching autonomy. Formative evaluation not only requires technological support but also the professional insights and humanistic care of educators. However, if educators overly rely on the evaluation results of AI systems and ignore their own teaching experience and intuitive judgment, the evaluation process may become mechanized. Since the evaluation reports generated by AI systems may not fully reflect students' learning motivation, creativity, or cooperation ability, which are precisely the key information that educators can capture through observation and interaction. This technological dependence may limit educators' initiative and creativity in teaching, thus affecting the realization of the student-centered teaching concept.

Finally, the popularization and application of AI technology may exacerbate educational inequality. Although AI technology provides new possibilities for educational evaluation, its application cost and technological threshold may make it difficult for schools or regions with scarce resources to enjoy the technological dividends. The use of intelligent learning platforms and data analysis tools requires a large amount of capital investment and technical support, which may not be guaranteed in poor areas. This technological gap may lead to further differentiation in the quality of educational evaluation, thus exacerbating educational inequality. When introducing AI technology, educators must pay attention to its application fairness and popularity to ensure that all students can benefit from it.

Faced with the risks associated with AI-enabled formative evaluation, educators need to take comprehensive measures from multiple levels, including technical design, ethical norms, educator capacity enhancement, and policy guarantees, to minimize the adverse effects of AI intervention and ensure that technological applications truly serve the student-centered educational goals. These measures not only need to focus on the optimization of technology but also integrate humanistic care and ethical considerations into educational practice, thereby achieving the in-depth integration of technology and education.

Firstly, at the technical design level, it is essential to ensure that the data collection and analysis processes of AI systems are comprehensive and transparent. The algorithm design of AI systems should fully consider the multi-dimensional characteristics of students' learning processes, avoiding over-reliance on single data sources or simplified evaluation criteria. , in an intelligent classroom system, in addition to recording students' academic performance and participation, their creativity, cooperation ability, and emotional state should also be considered. At the same time, the algorithm design should follow the principle of transparency, ensuring that educators and students can understand the logic behind the generation of evaluation results, avoiding the distrust caused by the black box effect. In addition, technology developers should work closely with educators to continuously improve the adaptability and accuracy of AI systems through iterative optimization and user feedback, so that they can better meet the needs of formative evaluation.

Secondly, at the ethical norms level, strict data privacy protection mechanisms and ethical review systems must be established. Educational institutions and technology developers should jointly formulate clear data usage norms to ensure that students' personal information and learning data are fully protected during the collection, storage, and usage processes. , technical means such as data anonymization, encrypted storage, and access control can be used to prevent data leakage and misuse. At the same time, an ethical review committee should be established to regularly evaluate the application scenarios and data usage of AI systems to ensure that they comply with educational ethics and student rights protection requirements. In addition, educators should cultivate students' awareness of data privacy and self-protection abilities through classroom discussions and educational activities, enabling them to actively participate in the supervision and management of data usage.

At the level of educator capacity enhancement, it is essential to strengthen the professional training and technical support for teachers to help them better understand and apply AI technology. Educators are not only users of AI systems but also the leaders of educational evaluation. Therefore, educational institutions should enhance teachers' professional abilities in data analysis and AI technology application through training courses, workshops, and case sharing. , courses related to AI and Educational Evaluation can be offered to help teachers master the basic methods of data analysis and the operational skills of AI systems. At the same time, educators should maintain critical thinking about the application of technology, avoiding over-reliance on the evaluation results of AI systems, but rather using them as auxiliary tools, combined with their own teaching experience and professional judgment, to

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conduct comprehensive and in-depth evaluations. This combination of technology and humanism can make formative evaluation more aligned with the actual needs of students.

At the policy guarantee level, it is essential to promote the fair application and popularization of AI technology through institutional design and resource allocation. Educational authorities should formulate relevant policies to promote the standardized and standardized application of AI technology in educational evaluation, while paying attention to the special needs of resource-scarce areas and schools. , government subsidies, technical assistance, and resource sharing can be used to help poor areas and schools introduce intelligent learning platforms and data analysis tools, narrowing the technological gap. In addition, a cross-departmental cooperation mechanism should be established to integrate resources from education, technology, and finance departments to jointly promote the sustainable development of AI technology in educational evaluation. This policy support can provide a solid institutional guarantee for AI-enabled formative evaluation, ensuring its fairness and inclusiveness.

Finally, in educational practice, it is essential to focus on students' dominant position and participation, making AI technology a tool that truly promotes students' growth. Educators should encourage students to actively participate in the data collection and evaluation process through classroom activities and evaluation design, cultivating their self-reflection and autonomous learning abilities. , students can be guided to use intelligent learning platforms to record their learning progress and make self-adjustments and planning based on the feedback from AI systems. This student-led evaluation method can not only enhance their learning motivation but also make formative evaluation more aligned with their actual needs, thereby achieving the student-centered educational goals.

6. CONCLUSION

The teaching reform of higher education centered around students is a systematic reform. Process-oriented evaluation, which focuses on cultivating students' autonomous learning ability, paying attention to all-around learning effects, and emphasizing the role of measurement and feedback, is bound to become the core evaluation mechanism of the student-centered teaching paradigm. Only by placing students at the core of evaluation, taking into account their individual differences, learning experiences, and actual needs, can a scientific and effective evaluation system be designed, and the positive role of process-oriented evaluation be truly brought into play to promote students' all-round development and improve teaching quality.

The overall goal of student-centered process-oriented evaluation is to help students achieve comprehensive and in-depth growth through continuous attention, feedback, and guidance. The secondary goals include comprehensively reflecting students' learning processes, stimulating students' learning motivation, and promoting teaching improvement. The basic principles of process-oriented teaching evaluation include the principles of comprehensiveness, personalization, timeliness, and development. It is not only feasible but also necessary to empower process-oriented teaching evaluation with AI technology. AI technology can provide educators with more efficient and accurate evaluation tools, thus promoting the achievement of the overall goal of students' all-round development on a larger scale. However, while AI-empowered process-oriented evaluation brings convenience and possibilities, it is also accompanied by multiple risks such as data limitations, privacy and security issues, educators' autonomy, and educational inequality. Educators must be clearly aware of these risks in practice.

In the face of the risks of AI-empowered process-oriented evaluation, educators need to take comprehensive measures in multiple aspects, including technological optimization, ethical norms, capacity improvement, policy support, and student participation, to minimize the adverse effects. This multi-level response strategy can not only enhance the application effect of AI technology in educational evaluation but also optimize the educational evaluation system and achieve the goal of students' all-round development in the balance between technology and humanity. Only through the in-depth integration of technology and educational practice can AI-empowered process-oriented evaluation truly become an important driving force for promoting high-quality development in education.

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