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Research on the Optimization of Teaching and Learning Path in the Context of Educational Data

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Abstract: With the repeated in-depth development of the technological revolution, the combination of education and technology constantly shows a new form. Modern education and Internet education have become the new direction of the current education development efforts. The development of technology has brought great Gospel for the national education. Based on this, from the traditional and modern perspectives, this paper discusses the form and significance of teaching and learning paths, to show the new value of education brought by the change of teaching and learning paths under the background of educational data.

Key words: Educational data; Teaching and learning paths; The new form; New meaning

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1 Introduction

With the continuous advancement of the industrial process of human society and the iterative update of development modes, modern intelligent intercommunication technologies such as Internet technology, 5G technology and artificial intelligence have become an important pillar of education and knowledge innovation, and technology is promoting the reform of all aspects of education and teaching. The content and teaching order of learning are not limited to the traditional textbook knowledge and fixed teaching and learning order, but the new knowledge creatively generated by learners based on the original basic knowledge and the new teaching mode explored and developed by educators which is beneficial to students' mental development. The teacher gradually becomes the designer in the intelligent teaching environment and the guide of students' learning. Although these changes are still in their infancy, the trend is unstoppable. Along with these developments and changes, the previous educational theories and teaching methods appear to be inadequate for the analysis and application of the current educational situation. At the same time, the call for optimizing the educational theories in the era of big data is getting higher and higher.

As the key of the whole teaching process, teaching and learning paths affect many aspects such as classroom teaching objectives, teaching ideas and teaching methods. Based on the method of contrast, the optimization process of teaching and learning path under the background of educational data is analyzed from many aspects.

2 The form of traditional teaching and learning paths

2.1 The representation of traditional teaching and learning paths

In our country, the history of exam-oriented education is deeply rooted. While ensuring the basic education fairness, it has also produced some negative effects, increasing the academic burden of students, and the classroom can not be adjusted flexibly, which makes many novel and efficient classroom reforms fail to show their due value. The traditional teaching and learning approach is based on textbooks and handouts, with teachers' teaching as the main support, guiding students to preview before class, teachers' explanation in class and students' review after class. When students prepare before class, they can be divided into independent preview and third-party supervision preview. If students have high consciousness and strong independent learning ability, the former will greatly reduce the teacher's lecture burden and improve the overall efficiency of class. If students need the assistance of a third party (teachers, etc., who are higher than the learners' current cognitive level), the way and depth of the assistance need to be considered. However, no matter which

kind of preparation method is adopted, it can not guarantee that students' preparation degree is very consistent with the ideal situation of teachers, nor can it effectively exercise students' self-learning ability. Teachers impart knowledge in class, the teacher and students can always face-to-face interaction, on the one hand can guarantee the teaching content of systemic, according to the curriculum standard, purposeful, planned and organized to carry out the teaching work, problem solving and has the characteristics of timeliness, efficiency, effectiveness, on the other hand can also be very good for precept, teachers' positive personal charm and conduct positively influence the development of students.

2.2 The dilemma of traditional teaching and learning path

Now with the arrival of the new era, the society is changing on the requirement of the students, the shortage of the traditional classroom teaching has displayed its single: (1) the teaching content, form a simple, boring, difficult to arouse the enthusiasm of students, teachers also are in dominant position in teaching of the non-computer majors, for lack of focus on students' actual situation, for their own lack of reflection on teaching process. (2) Since teaching is conducted for the purpose of examination and students also study for the purpose of examination, teachers still sort out the teaching content with the exam outline. Teaching ideas have not been fully opened, the lack of flexible adjustment, the day after day model will inevitably bring students a sense of fatigue in learning, reduce the enthusiasm for learning, at the same time, the comprehensive quality of students has not significantly improved, so that the advocacy of personalized teaching become a fantasy.

3 Teaching and learning path optimization method under the background of educational data

3.1 The morphological characteristics of teaching and learning paths under the background of educational data

Under the new educational background, the way of education and teaching has undergone a great change, and the order of teaching and learning is not restricted to the traditional "three steps". The methods of preview - class - review after class have been expanded, more flexible and diverse. The time and space restriction of teaching is broken, and the sharing of learning resources is more convenient and effective. Teachers can arrange ahead of schedule, arrangement before class content, and content can be such as video, audio, animation, courseware, a variety of ways, the student is no longer a simple preview textbook knowledge, but there is a direct line affects the students' thinking, so that teachers can have goal is passed to the students before class, greatly improve the efficiency of the preparation, mobilize the students' interest in learning, students' positive thinking. Students' questions after class can also be communicated with teachers in real time through the education platform, so as to solve students' problems in the first time. Of course, teaching under the background of educational data also has some disadvantages, such as poor interactivity, numerous and complex teaching resources, and the influence of network environment. Students need to have certain screening ability, but on the whole, the advantages outweigh the disadvantages.

3.2 Implementation requirements of teaching and learning paths under the background of educational data

Education data under the background of the implementation of the teaching and learning should be on the basis of traditional teaching, for effective innovation, bidirectional complementary teaching, the implementation of the new path to get rid of a fixed mode, in the stage of preparation before class, learning pace and the choice of learning materials should be combined with the current social new demand for teenagers to innovate, to fully respect the students' psychological development order, the choice of education data must conform to student's cognitive order, appropriate increase in recent developments. In the numerous data, teaching resources should be strictly selected. According to the characteristics of students at different ages, different teaching resources should be selected instead of one size fits all. Teaching and learning of the path optimization will inevitably lead to education data appeared frequently in the teaching process and occupy a certain amount of time, as the education intervention, data communication and interaction between teachers and students is less, interaction between teachers and students and teachers the opportunity to interact will reduce, will it affect the potential of teaching, such as moral character, example learning, education data application should pay attention to this aspect of education. The optimization of the path should give full play to students' autonomy, cultivate students' ability to choose network education resources independently, and enhance their self-learning ability. Schools should increase the investment of

Internet teaching resources to meet the learning needs of students, and the basic hardware facilities should be guaranteed.

4 The new significance of teaching and learning path innovation under the background of educational data

4.1 Teaching and learning path optimization to promote teachers' innovation in teaching

The optimization of teaching and learning path pays attention to giving full play to the guiding role of teachers, and abandons the model of "one-sentence teaching". The optimization of the path is accompanied by the improvement of teaching means and teaching strategies, and teachers carry out teaching innovation from many aspects. In the selection of teaching AIDS, flexible and diverse wisdom teaching tools can help teachers to present the teaching materials to perfection. Under the premise of strictly following the curriculum plan, teachers constantly promote the personalized development of students, avoid letting students be fixed in the unified "factory mode", at the same time, flexible supervision and inspection, the inspection focus on the comprehensive ability of students. The application of teaching materials has abandoned the old concept and explored the extensibility of teaching materials. The selection of teaching methods and strategies is flexible and varied. The teaching sequence is adjusted and changed timely while ensuring the general direction, so as to ensure the overall improvement of teaching by the application of educational data to the maximum, and promote teachers to carry out innovative teaching.

4.2 Teaching and learning path optimization to develop students' autonomous learning ability

Traditional learning mentality is carried out based on the order of the teacher's teaching and student's main reference learning object is a textbook, in has not started the formal curriculum, students for the understanding of the textbooks just rely on the existing knowledge and extracurricular books, students' learning interest and learning enthusiasm more than the degree of over learning, learning motivation gradually decline. Optimization of the teaching and learning path and education to the development and application of large data enrich the students' learning resources, develop the students' learning vision, can be very good to mobilize the enthusiasm of students learning, cultivate the students' self-study ability, make students better understand the true meaning of learning, make "teach them to fish" really "teach them to fish". The development of new classroom teaching scenarios, can let the students from interest to immerse themselves in doing and then to the ability to really develop self-study.

4.3 The optimization of teaching and learning paths promotes the development of wisdom evaluation

In the traditional classroom teaching and learning path formation of the evaluation system is based on academic achievement and classroom performance, according to the academic achievement and teaching needs to the student for diagnostic evaluation, formative evaluation and summative evaluation, in most cases the teacher as a student academic achievement to uniform scores, this will affect the students' stereotype, often because of poor student performance and disapprove of students to the development of other aspects. This gradually evolving deformity evaluation lacks the analysis of the whole learning path of students, which is not conducive to the overall development of students' comprehensive quality. With the continuous progress of teaching and learning paths, the way and Angle of evaluating students will also change. Education data will comprehensively assess students' conditions according to students' learning paths, learning methods and learning states used in each path, so as to facilitate educators to timely adjust teaching methods and methods according to student information feedback from each node. At the same time, big data of education makes objective and efficient analysis of different evaluation results, and then assists teachers to propose solutions to problems.

5 Conclusion

Under the background of big data in education, modern education is necessarily data-driven rather than purely empirical practice. To education big data as modern education important support assistant, display data, by showing the learning behavior of educates, describes the basic knowledge and skills development, its ultimate value lies in through the change of the teaching and learning path to awaken the educate more main body consciousness, to clarify how to better educated to carry out the knowledge and skills of study, how to gradually improve the ability of learning. At present, teaching optimization based on education big data has penetrated into many aspects of teaching. We should call for more wisdom, and researchers in computer science, education science, psychology and other fields should gradually participate in the development of new education and teaching under the background of big data.

References

[1] Mao G, Zhou YL, He WT. The development direction of teaching evaluation theory under the background of education big data [J]. Electronic Education Research, 2020,41 (10) : 22-28.

[2] Gu XQ, Du H. Reflection and Dialogue on the Important Proposition of "Reconstruction of Pedagogy Theory in the Information Technology Era" [J]. Research on Modern Distance Education, 2019(1) : 3-10.

[3] Wang BL.30 Years of Educational Reform in China (Curriculum and Teaching Volume)[M]. Beijing: Beijing Normal University Press, 2009:192.

[4] Yang KC. Why education is big data[J]. Electronic Education Research, 2019, 40(2): 7-13.

[5] Zhu ZT, Wei F. Educational Informatization 2.0: Starting from Intelligent Education and Leading the way from Intelligent Education [J]. E-Education Research, 2018,39 (9) : 5-16.

[6] Sun FR. Educational Research, 2012, 33(12): 77-83. (in Chinese)