

Application of Precision Teaching Under the Guidance of Big Data in The Course of Internal Medicine Nursing

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Abstract: Objective: To explore the application of precision teaching under the guidance of big data in the course of internal medicine nursing. Methods: One class was randomly selected as the experimental group from the classes offering the course of internal medicine nursing in 2019, and the other class was randomly selected as the control group. The precise teaching method and traditional teaching method under the guidance of big data are respectively used for teaching. After learning, the final examination results and teaching quality are evaluated, and the evaluation results are compared and the teaching effect is evaluated. Results: the final examination scores of the experimental group were better than those of the control group ($P < 0.05$). Students responded well to the accurate teaching evaluation under the guidance of big data. Conclusion: The application of precision teaching under the guidance of big data in the course of internal medicine nursing has achieved good results, can improve the clinical ability of students, and is worth further promotion.

Keywords: Big data, Precision teaching, Internal medicine nursing.

1. Introduction

Precision teaching is based on the operational conditioning principle of the famous psychologist Skinner [1]. Precision teaching shows that it can better improve students' learning performance and sense of achievement than traditional teaching practice. The emergence of big data and cloud data provides a good opportunity for the extensive development of precision teaching. The course of internal medicine nursing is a compulsory course for nursing students and an important theoretical basis for future clinical practice and work after graduation. Through the application of precision teaching based on big data in the course of internal medicine nursing, this study preliminarily discusses the effectiveness and role of big data in this course.

2. Object and Method

2.1. Research Object

Among the classes offering the course of internal medicine nursing in 2019, one class was randomly selected as the experimental group, and the other class was randomly selected as the control group. There was no significant difference between the two groups in terms of age, gender, learning basis and other related pre medical courses ($P > 0.05$).

2.2. Teaching Methods

The teaching of the experimental group first analyzes the literature and builds a big data processing center. On the basis of clarifying the teaching objectives and key and difficult points of each topic, reasonably organize the teaching contents, select appropriate teaching methods, and design appropriate learning activities, such as problem discrimination, summary, simulation operation, etc. Use app to build online courses, select and process various teaching resources according to the teaching plan, and build an online learning resource package suitable for nursing students. Before class, release the resources required for special study, arrange the pre class study task list, and specify the specific

requirements for study. Tencent classroom live online teaching was adopted in the class. Teachers explained the learning contents by creating situations, task guidance and other methods, and displayed the relevant experimental operation models, or organized learning groups to cooperate in group discussion and display the learning results around the unit theme. Finally, according to the teaching diagnosis, reflect on the existing problems and clarify the direction of improvement. According to the three dimensions of specific knowledge and ability foundation dimension, learning ability dimension and learning attitude dimension, students are divided into type 3A, type 2A and typeA learners. Accurate teaching based on online learning data analysis. Before the live class, provide personalized resources and set different task points according to different types of students, and require students to discuss interactively in the platform discussion area and message area to feedback the preview. After class, guide students to summarize and summarize the completed thematic learning contents through mind maps, flow charts, etc. while personalized feedback assignments, prepare special topics or record micro lessons for common problems for students to learn independently. The control group also adopted the form of discussion and live teaching. The tasks were arranged uniformly before the class. The content and release time of the Mu class were the same as those of the experimental group, but no personalized resources were provided. Tencent's live classroom teaching is also adopted, mainly teaching method and discussion method, without personalized teaching according to different types of students.

2.3. Observation Indexes and Evaluation Criteria

Student learning effect evaluation: the total score of the final examination course is 100 points, including multiple choice questions and case analysis. In addition, students' evaluation of teachers' teaching quality was investigated after the live broadcast of each topic. The questionnaire evaluates the teaching attitude, teaching content, teaching methods,

teaching norms, teaching organization, teaching ability and teaching effect. Likert grade 5 scoring method is adopted for each option, ranging from very consistent (5 points) to very inconsistent (1 point).

2.4. Statistical Methods

SPSS 19.0 statistical software was used for data analysis. The measurement data are expressed by ($\bar{x}\pm s$) and compared by t test; The counting data is expressed in (%) and used for comparison χ^2 test, $P < 0.05$ means the difference is statistically significant.

3. Results

3.1. Evaluation of Students' Final Examination Results

In terms of course scores, the test scores of the experimental group were higher than those of the control group, and the difference was statistically significant ($P < 0.05$). (see Table 1)

Table 1. Comparison of final examination results of internal medicine nursing course between the two groups (points, $\bar{x}\pm s$)

Group	total score
Experimental group (n=50)	91.45±15.4535
Control group (n=50)	89.03±18.56
T value	0.703
P value	0.485

3.2. Comparison of Evaluation of Teachers' Teaching Effect Between Two Groups of Nursing Students

After the end of the course, the scores of the two groups of

nursing students on the evaluation of teaching quality are compared in Table 2. The scores of the teachers in the experimental group in teaching methods and teaching effects are higher than those in the control group, and the differences are statistically significant ($P < 0.05$).

Table 2. Comparison of the evaluation scores of the two groups of nursing students on teaching quality (points, $\bar{x}\pm s$)

Group	teaching attitude	teaching content	teaching method	teaching standard	teaching organization	teaching ability	teaching effect
Experimental group (n=50)	17.56±5.32	32.24±10.26	16.56±6.34	43.38±11.58	21.36±7.42	25.23±8.23	23.36±5.340
Control group (n=50)	15.23±5.44	32.25±8.87	12.24±5.96	41.62±10.23	18.56±8.05	22.52±9.64	20.23±7.44
T value	1.968	0.122	3.236	0.496	1.693	1.814	2.254
P value	0.052	0.905	0.002	0.624	0.093	0.075	0.029

4. Discussion

4.1. Accurate Teaching and Big Data Analysis of Learning Situation

Precision teaching is to accurately identify the learning needs of learning objects, accurately formulate targeted teaching objectives and select teaching methods, so as to design targeted teaching strategies to help students at different levels accurately acquire knowledge, skills or abilities that meet their own development laws and meet their own needs [2-3]. In the practice of precision teaching, we should first accurately understand the learning situation, then determine the goal and choose the teaching content and form. Learning situation data analysis is to conduct in-depth mining and correlation analysis on the student learning data recorded in the teaching process, and finally visualize the analysis results to understand the students' learning status, learning progress, learning input and learning effect. The analysis of learning situation before class points out the basic direction for the problems in the teaching implementation process, such as the selection of teaching content, the selection of teaching methods and the determination of teaching starting point. The real-time learning situation analysis in the teaching process can provide an important basis for teachers to adjust and improve the teaching progress and teaching activities and promote the effective generation of teaching. The analysis of learning situation after class can promote the reflection after

teaching and provide important information for the presupposition and adjustment of subsequent teaching. In conclusion, the analysis of learning data provides a reference for teachers to make teaching improvement, carry out teaching intervention and make teaching decisions. Therefore, the use of information technology such as artificial intelligence, big data and cloud computing to accurately record students' learning behavior and visualize students' knowledge status to achieve accurate teaching and personalized learning has become the focus of education experts in the new era.

The key to the construction of the accurate teaching mode based on the analysis of learning data in this study is that the teaching design centered on learning activities should run through the five elements of teaching objectives, content, interaction, resources and evaluation. However, at present, the research on precision teaching supported by information technology in China is still in the initial stage, and there are still some key problems to be solved. For example, how to use artificial intelligence, big data, cloud computing and other information technology to assist precision teaching? Nursing courses are highly professional and practical. How to build a suitable precision teaching model? Therefore, this study intends to build an accurate teaching model based on the analysis of learning situation data, aiming to promote the efficient and personalized learning of students, and also to encourage teachers to optimize the teaching design according to the results of learning situation analysis, so as to achieve

the teaching effect of "students' personality" and "teachers' accurate teaching".

4.2. Accurate Teaching Based on Big Data Is Conducive to Improving Students' Participation and Learning Effect

The results of this study show that the final test scores of the experimental group are significantly higher than those of the control group after the end of the course ($P < 0.05$), indicating that precision teaching based on big data analysis can help improve students' participation and learning effect.

In this study, we designed teaching plans for different types of nursing students in groups through the analysis of pre class learning data, and published rich graphics, videos and other resources on the platform to enhance students' interest in learning. By arranging learning tasks before class, supervisor promote nursing students to actively participate in online learning, drive learning behavior through learning data report feedback, thus promoting nursing students' autonomous learning behavior and laying a foundation for follow-up online live learning. In this research class, the teaching organization methods such as heuristic, exploratory, participatory and case discussion are used to carry out precise teaching based on Tencent classroom live broadcast, which embodies the educational concept of "student-centered" and "teaching according to students' aptitude", and also plays the role of teacher guidance, inspiration and supervision. Through classroom teaching observation, it is found that the students in the experimental group have significantly improved their speeches, questions and presentations in the live class. According to the learning feedback of different types of nursing students after class, this study aims to improve the knowledge framework of nursing students through knowledge expansion or foundation consolidation. The students in the experimental group also responded well to the teaching evaluation.

4.3. Deficiency and Prospect

In order to meet the needs of students' personalized learning, this study applies the precise teaching mode based on the analysis of learning data to the teaching of internal medicine nursing. Although it improves students' participation and teaching satisfaction, there is also a problemIt's not enough. At present, there are problems such as incomplete monitoring data, and the platform can not fully

record the teaching track of teachers and the learning performance of students, which leads to limited teaching evaluation and decision-making support. It is hoped that in the future teaching platform can record the process of "teaching" and "learning" in more detail and intelligently, and push corresponding learning resources for students. In terms of curriculum resources, this study also needs to further develop and improve curriculum resources to meet the common and personalized needs of students. In addition, this study uses data mining and analysis based on the intelligent teaching platform to analyze the learning situation. Due to the limitations of technical conditions, visual presentation such as student portraits is not adopted. It is hoped that the next research can further use more advanced technologies to mine and analyze the learning situation data [4-5].

5. Conclusions

In short, the precision teaching mode under the guidance of big data can improve students' performance and improve their teaching evaluation, which is worth promoting.

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