

Psychological Thinking Mode of Constructivism Research

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Abstract: Learning is the process in which individuals construct knowledge. This means that learning is active, and knowledge is self-construction rather than passive cramming; learners should make active choices and processing of external information; learning should not only acquire new knowledge and experience, but also transform existing knowledge and experience. Therefore, this study focuses on constructivism-oriented psychological thinking mode, how students acquire knowledge, and emphasizes the subjectivity of learners to guide learners to master methods from new knowledge and experience, and internalize them into new knowledge literacy and ability.

1. Introduction

The common learning mode is to impart or inculcate in a high position. There is no basic interaction between teachers and students, lack of communication, lack of dialogue, and even lack of thinking collision in the classroom. We are in a knowledge-based economy era that attaches great importance to the spirit of innovation and practical ability. We are also in an era in which a country attaches more and more importance to the cause of education. The teaching system must follow the principle of practice, but in today's teaching system, there is a phenomenon that emphasizes theory rather than practice. In the teaching arrangement, curriculum design is emphasized, while the arrangement of practical activities is neglected. The cultivation of students' practical ability is seriously neglected. As a theory of education and learning, constructivism is mainly represented by Piaget's theory of cognitive development, Vygotsky's theory of social culture and history and Bruner's theory of target classification. Its basic point of view emphasizes that learning is the process in which individuals construct knowledge. This means that learning is active, knowledge is self-construction rather than passive cramming; learners should make active choices and processing of external information; learning should not only acquire new knowledge and experience, but also transform existing knowledge and experience. Psychological thinking mode guided by constructivism pays attention to how students acquire knowledge and emphasizes learners' subjectivity. This paper discusses and analyses the psychological thinking mode of Constructivism research.

2. The Connotation and Characteristics of Constructivism

The core of constructivism theory is that "knowledge is not passively accepted, but actively constructed by cognitive subjects". Knowledge is not acquired through imparting, but through meaning construction by learners in a certain context, i.e. social and cultural background, with the help of learning and others (including teachers and learning partners), using necessary learning materials. The experience of learners promotes reflection, assimilation and adaptation of existing knowledge. Constructivism emphasizes students' exploration and job-hunting in the field of theoretical knowledge, and actively discovers the system construction of theoretical knowledge they have learned. It is not simply to memorize the knowledge imparted by teachers in their minds like traditional teaching. In other words, students do not blindly accept knowledge actively. Learners acquire knowledge through meaning construction and master the procedure of solving problems. This requires students to give full play to their cognitive subject's active role in learning, to actively think and explore with the inspiration, guidance and help of teachers, so that they can smoothly complete the meaning construction of thematic knowledge, thereby gradually improving their

self-control ability, learning to study independently, and laying a good foundation for lifelong learning [3]. Under the constructivist view of teaching, students' roles can be defined as teaching subjects and active participants in learning activities, active constructors of knowledge, collectors and sharers of information, self-testers, self-monitors and diagnosers. In organizing the teaching process, teachers should respect students' cognitive characteristics and emphasize students' cognitive role as the main body. Teachers should clarify their guiding position and act as promoters and helpers of students' meaning construction, rather than imparters. Give consideration to students' sociality and situationality, take students' original knowledge and experience as the basis point, to guide students to master methods from new knowledge and experience, and internalize them into new students' knowledge literacy and ability [5].

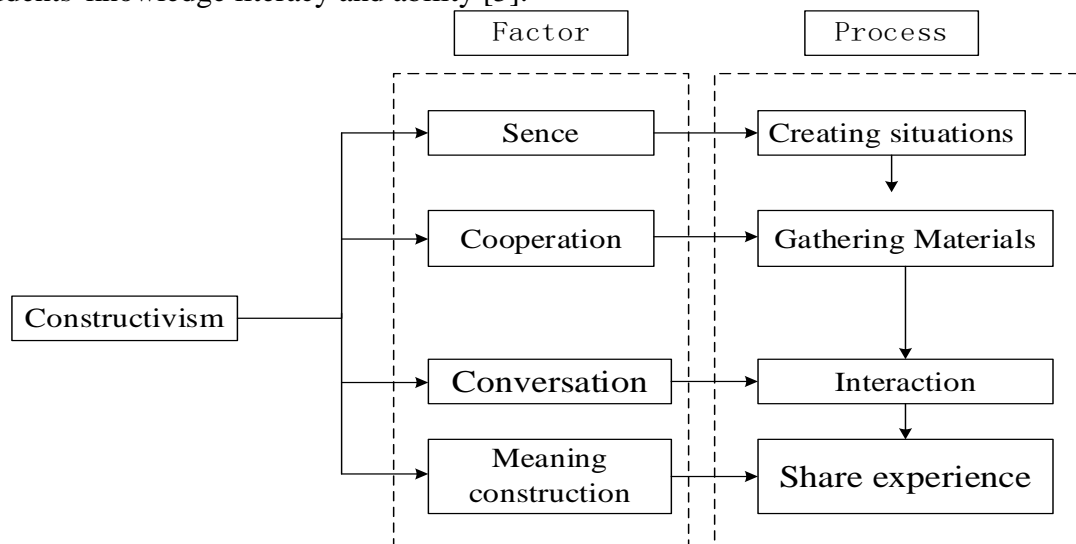


Fig 1 Constructivist-oriented thinking process

2.1 Psychological Thinking Mode Guided by Constructivism

Constructivism pays attention to the process of knowledge acquisition and the confirmation of learning objectives

Traditional psychological thinking, teaching activities start from the analysis of teaching objectives too much, and regard it as a guide for teachers to carry out teaching activities and a standard to measure the teaching effect. However, how to translate teaching objectives into students' learning objectives is often lack of careful thinking, which results in that the teaching objectives are not consistent with students' orientation of learning activities and expectations of learning outcomes, thus it is difficult for students to actively, deeply and concentratively engage in learning. Then, under what circumstances can students recognize teaching objectives as self-learning objectives? Constructivist learning concept has important inspiration for us to solve this problem. Constructivist learning theory holds that:

a) Learning is a process in which learners actively construct internal psychological representations. The learning process is a process in which learners interact with the sensory information received in the environment and actively construct the meaning of information.

b) Learning is an active process. Learning is not the transfer of knowledge from teachers to students, nor the passive learning and recording of information, but the active construction of his interpretation of information, reflecting the monitoring role of consciousness.

c) Construction in learning is bidirectional, which includes assimilation and adaptation. It can be seen that constructivism not only has a new interpretation of knowledge, but also pays attention to how learners construct knowledge on the basis of their original knowledge, psychological structure and beliefs. Constructivism's understanding of learning enlightens us to realize that students are not passive acceptance and obedience in the teaching situation, but active construction of external teaching influence on the basis of existing experience. The result of learning is not that students accept knowledge, but that individual knowledge has been transformed. Since it is transformed, it is

bound to relate to students' knowledge and experience preparation before learning. Therefore, teaching objectives are recognized by students, and the formation of students' learning objectives should be marked by students' expectations of developing and transforming experience on the basis of existing experience. The teaching objectives and tasks should not only start from the teaching content, but also be reflected in the development of students' subjectivity, so as to reflect the consistency of teaching objectives and learning objectives.

2.2 Constructivism Pays Attention to Dimension and Multi-level Procedural Evaluation

Traditional teaching evaluation is a single result evaluation, which does not attach importance to the evaluation of students' learning process, that is, knowledge construction process. Constructivist teaching view holds that teaching evaluation should pay attention to the evaluation of students' knowledge construction process, including how to find knowledge, how to involve cognitive strategies and self-monitoring, and how to explore and innovate in knowledge construction, which should be included in the content of teaching evaluation. This will fundamentally change the current single outcome evaluation model. Constructivist teaching evaluation view advocates that learning outcomes should be evaluated from multi-dimensional and multi-level perspectives. Evaluation should be based on reflecting the level differences in the process of students' knowledge construction, such as knowledge framework, strategy level, reflective and critical thinking level and innovation ability. In addition, according to the characteristics of knowledge network structure, we should develop our teaching evaluation from a single concept of logical thinking evaluation to a multi-dimensional concept of creative and critical thinking evaluation. This requires that students should be encouraged to use their brains in teaching, not to pursue the only answer, do more exploration, and pay attention to the influence of students' thinking development in the content design of teaching evaluation. In today's information age, there are many ways for students to acquire knowledge. The uniqueness of answers does not conform to the idea of knowledge construction, nor does it conform to the openness of people's knowledge structure. Only by changing the concept of teaching evaluation can we put the concrete measures of constructivist teaching concept into practice.

2.3 Constructivism Guides Students to Construct New Knowledge and Experience

Psychological teaching mainly deepens the problems from study and discussion, and summarizes the ideas, methods and measures of research to solve the main tasks of higher vocational psychological education. When introducing case teaching, teachers should embody the vocational competence standard of Higher Vocational psychology, and improve vocational students' practical and decision-making ability from the aspects of Vocational psychology, post psychological cognition and employment psychology. The integration of constructivism and case teaching method lies in the concrete presentation of the general application of psychological Abstract concepts, especially through specific cases and situations, the theory and concepts of psychology are refined to varying degrees. In the study of case-based teaching method, students examine psychological knowledge from multiple perspectives, and establish the relationship between the meaning of concepts and specific situations, form background experience, stimulate students to acquire reasoning, analysis and discrimination ability from case-based learning, and complete the internalization and meaning construction of new psychological knowledge and skills [4]. Therefore, in the construction of psychological case teaching method, we need to grasp four points. First, we should pay attention to the problem and show the cases. For the selection and introduction of cases, we should pay attention to appropriate ways, stimulate students' enthusiasm for inquiry, be able to approach psychological theory from the proposition of case problems, open students' thinking and cognitive horizons, guide students to explore cases from different perspectives and using different methods, together with students to alleviate the actual problems encountered in cases, and summarize the best solutions to the problems. To extend and enrich students' theoretical knowledge and application skills. effectively exploit and utilize low-grade and unconventional oil and gas resources, petroleum engineering technology has made rapid progress, which will play a key role in the commercial breakthrough of deep coal underground gasification. High-precision

three-dimensional seismic exploration technology has been able to accurately identify the distribution of underground oil, gas, coal and groundwater reservoirs; U-shaped horizontal well drilling and completion technology in deep coal seam can ensure accurate borehole trajectory, effectively prevent collapse, and achieve large-scale underground furnace construction; burning oil layer technology has realized the "in-situ transformation" of super heavy oil resources, and heavy oil pyrolysis can be used for reference by coal pyrolysis; The progress of caliber coiled tubing and its matching tools and downhole complex operation technology can provide rich experience for precise guidance and control of underground gasification process. Once commercial breakthroughs have been made in the series of supporting technologies for underground coal gasification, it will effectively break the depth limit of coal development and utilization, activate huge amounts of deep coal resources, convert coal resources into gas in situ, and further synthesize oil and gas on the ground after purification.

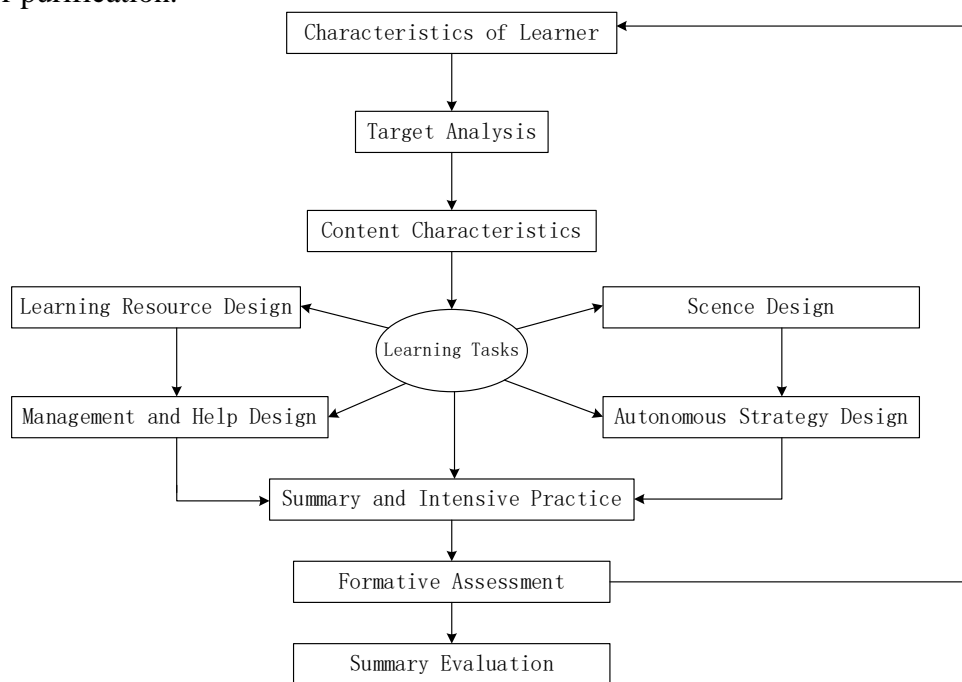


Fig 2 Psychological thinking learning mode guided by constructivism

The development of underground gasification in deep oil fields by natural gas mining enterprises can give full play to the advantages of comprehensive development of resources. In the process of oil and gas exploration, natural gas mining enterprises gradually deepen their understanding of medium and deep coal resources. Coal-bearing strata formed in different periods are widely distributed in the mining right areas of oil and gas enterprises. In the process of oil and gas exploration and development in Ordos, Tarim, Junggar and Erlian oil and gas basins, coal-bearing strata with large area distribution are drilled, and abundant geological and analytical data of coal seams are obtained. For coal and coals with different geological periods and different coal and rock qualities, coal and cocoals in the middle and deep strata are available.

Gasification resources have a certain understanding. Compared with coal enterprises, natural gas mining enterprises have obvious advantages in theory and technology of deep geological exploration due to the different main bodies of resource targets and long-term accumulation. The mature geological comprehensive evaluation technology, geophysical exploration technology series, horizontal well drilling and completion technology, continuous pipe integration technology, high temperature heavy oil thermal recovery technology series, real-time on-line monitoring technology, surface natural gas purification and treatment technology series of natural gas mining enterprises can lead the development of underground coal gasification industry through oil and gas development matching technology, through targeted improvement and application. In the key links of underground coal gasification, such as site selection, furnace construction, gas injection, ignition and production, micro-seismic monitoring technology is used to monitor the shape and size of coal

seam gasification caverns in real time; ignition, injection control and wellbore integrity of in-situ coal gasification technology can be used for reference in ignition and control links of underground coal gasification, which is expected to promote the underground coal gasification project in the middle and deep seams. Substantive breakthroughs have been made.

3. Conclusion

No theory can be perfect in itself. Psychological thinking mode guided by constructivism theory focuses on breaking the traditional one-way educational psychology mode, paying attention to students' subjectivity, emphasizing the relativity of knowledge, guiding students to construct psychological knowledge, skills and skills purposefully from the perspective of autonomous cognition, so as to enhance the interest, feasibility and effectiveness of teaching.

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