Research Concept, Value and Strategy Based on Internet Mode

QIN QI

ABSTRACT

Research learning is a creative learning method cultivated by education practice for many years under the context of education overall reform. Teachers should utilize network character, temporality and spatiality, resource attribute and convenience of Internet teaching mode for renewing education idea and establishing new outlook on talents. Students can actively explore in open, free and harmonious contexts, thereby training students' logical thinking, dialectical thinking, divergent thinking, image thinking, transverse and longitudinal thinking as well as intuition thinking, providing good research learning environment, enriching information channel, integrating learning resources, cultivating problem consciousness, creating problem situation, and achieving beneficial conditions for making full use of research learning under Internet mode. Students can form good way of thinking, and innovating learning thinking mode.

KEYWORDS

Internet mode, Research learning, Value, Strategy.

INTRODUCTION

Research learning is the development trend of education curriculum reform in China and foreign countries. It is a creative learning method developed by education practice for many years, which embodies the requirements of the times on education development. Research learning in colleges and universities is in line with essence and development trend of higher education. It also should adapt to complex and changing international and domestic form for exploring the cultivation of high-quality innovative talents, thereby promoting education course reform in colleges and universities. The popularity of the Internet has brought a wealth of information resources, thereby providing the research learning with growth soil and nutrients. An education teaching system of information-based and Internet-based resources sharing is established. An internet mode of encouraging students in research learning is created. Students’ innovative thinking is cultivated. Students can change from passive learning to self- exploration research learning, which is beneficial for cultivating students’ innovative thinking. It has important theoretical significance and practical value to explore the Internet model research learning.
CONCEPT OF RESEARCH LEARNING UNDER INTERNET MODE

There has been no unified view on understanding concepts of research learning in academia. Domestic scholars think that research learning is a learning activity in the process of learning research with problems as the carrier, active exploration as the feature and change of traditional learning mode as the purpose. It has openness, exploratory and practical characteristics. Students can independently discover problems, select problems, explore problems and determine problems in learning and social life under the guidance of teachers, thereby obtaining knowledge, applying knowledge, making the conclusion, and finally answering the problems. It is a learning activity process.

The author believes that the research learning under Internet mode is shown as follows: traditional learning mode is changed under the Internet education background, teachers and students form a research learning community. Teachers create network research learning mode, cultivate students' problem consciousness, and guide students to use Internet information resources for autonomous, inquiry and cooperative learning, and train students' information gathering and analysis ability. Students can grasp scientific research methods, and engage in research guidance, knowledge sharing, process evaluation and achievement exchange through the Internet communication channels for the ultimate goal of cultivating innovative talents with cooperation consciousness and critical spirit. Research learning under Internet mode is an extension of traditional classroom teaching for the basic goal of cultivating students' innovation ability and practice ability in initiative exploration. The learning mode is directed to all students, and they can develop comprehensively actively, vividly and lively. Students' innovative spirit and creative ability are cultivated mainly. This is the core concept of research learning and innovation education mode.

VALUE OF RESEARCH LEARNING UNDER INTERNET MODE

Prof. He Kekang, a well-known Chinese scholar, believes that innovative talents should possess innovative consciousness, creative thinking and creative ability, wherein creative thinking is the foundation and the core to cultivate innovative talents. It is believed that constructivism is an important theoretical basis to realize creative thinking cultivation. Six elements of creative thinking are proposed: logical thinking, dialectical thinking, divergent thinking, image thinking, transverse and longitudinal thinking as well as intuition thinking [1]. Wang Qi and Yang Gaixue also believe that research learning is a learning mode of constructivism theory [1]. Therefore, the research learning is an effective learning mode to cultivate students’ creative thinking. Internet is the effective environment and carrier for research learning to construct constructivism theory. Research learning under Internet mode has important guidance significance to cultivate students’ creative thinking and innovation ability.

Communication, discussion, debate and cooperative learning are emphasized in the research learning under Internet mode, which is conducive to cultivation of students' logical thinking

Cooperative learning is focused in research learning under Internet mode. Teachers and students exchange and discuss through Internet communication
channels. It is not constrained easily as traditional face-to-face exchange. A relaxed, equal and free environment can be formed easily. Students publish and discuss own views and ideas. Teachers should guide students to learn eclecticism, how to get rid of the weed and keep the flower of the leek and how to complement each other. Their ideas can be constantly enriched in discussion, and mutually reacted in emotions, which is conducive to the cultivation of logical thinking.

**Internet is utilized to enrich the data for constant refutation - thinking - learning - rebuttal, which is conducive to the cultivation of students' dialectical thinking**

Internet communication channels are utilized for ‘dialogue’ discussion. Student's views are positive and reverse. The objectives may be consistent, but the methods are not the same. When different views are observed, students may think whether own methods are correct and perfect or not. Then, students should take the initiative to access to information. Views are reasoned and corrected. Therefore, students' knowledge structure is constantly enriched, improved and developed in the process of ‘argue - thinking - learning - argue’, which is conducive to cultivation of the students' dialectical thinking.

**Internet research learning is conducive to cultivating students' divergent thinking**

Internet is utilized for research learning. We should combine the multi-dimensional nature of the Internet to cultivate students' divergent thinking and help them to expand creative thinking space on the one hand. Students can break through the constraints and limitation of deficient practical experience and learning environment through Internet learning on the other hand, thereby exceeding time and space limitations, excavating students' divergent thinking and innovation potential. Students dare to open history in academic issues, and they pioneer. Traditional lecture-based teaching is a rapid and effective acceptance learning. However, students completely accept the knowledge taught by the teacher. It is difficult to form divergent thinking. In the research learning under Internet mode, students can actively search data, explore the essence of events and discover the relationship and rule among events in the learning process of independent exploration. Various thoughts, views and methods etc. are integrated, students can think and verify the knowledge taught by teacher, which is beneficial for training students' divergent thinking.

**The large ‘teaching resource database’ of Internet is utilized, which is conducive to cultivation of students' image thinking**

In traditional teaching, situation is created with graphics or context description aiming at the phenomena in the nature. Students have no life experience and observation, and it is difficult and limited to image the situation in graphics and text. However, multimedia teaching, simulation experiment, virtual reality, 3D technology etc. are integrated in the Internet teaching platform. Text, images, sound, animation, video, etc. are comprehensively used for creating teaching situation, the abstract model and space structure are displayed dynamically, three-dimensionally and visually. Students can integrate into the particular atmosphere for arousing their rich
imagination and emotional experience, which is conducive to the formation of students' image thinking and better understanding of relevant knowledge.

A research teaching team composed of multi-disciplinary teachers is organized, which is beneficial to students' horizontal and vertical thinking training through the intersection of disciplines

The university has formed a research teaching team composed of multi-disciplinary faculty members. Students' horizontal and vertical thinking is cultivated through crossed cultivation of discipline. The team should cultivate students for deep thinking exploitation on own knowledge. Students can stand in the forefront of discipline. Meanwhile, lateral thinking links should be conducted on other related disciplines. New discipline breakthrough points are further discovered through disciplinary intersection, thereby creating new achievements. Disciplinary intersection is helpful to cultivate the students' horizontal and vertical thinking.

Introduction of industry software application into classroom teaching, which is beneficial for students' intuitive thinking cultivation

Industry software application is introduced in classroom teaching. Students can practice the learned knowledge through professional software, which is beneficial for quick entrance into the job role after graduation. Meanwhile, the students' intuitive thinking is also cultivated, such as GIS (geographic information system) software. Geology, engineering, mineral, hydrology, meteorology and underground space data in urban and rural area are input, managed, operate, displayed and described for realizing visualized spatial analysis, 3D geological modeling, soil and water conservation and monitoring, mineral exploration and utilization, meteorological and geological hazard analysis and prediction, etc. Software simulation operation is beneficial for students to accumulate professional knowledge in maps, terrain, cloud, etc. and laying foundation for training intuitive thinking.

IMPLEMENTATION STRATEGY OF RESEARCH LEARNING UNDER INTERNET MODE

Provide learning space of independent cooperation and create harmonious and relaxed research atmosphere

The environmental factors in research learning mainly refer to the research atmosphere consisting of schools, teachers and students, etc. Teachers create an environment of free online discussion and communication between teachers and students. Research interests, enthusiasm and dedication are required for face-to-face communication with students in the classroom and online synchronous or asynchronous communication with students through the Internet. Students are encouraged to take the initiative to observation, and they should be good at independent thinking and dare to give independent opinions and challenge. Students should actively explore and try to practice, who should not be afraid of ridicule and failure. They should not blindly follow teacher authority without superstition on textbooks and materials. Students’ innovation consciousness of daring to think, daring
to do and daring to speak is cultivated. Each student can speak out cheerfully, and explore the conclusion of the problem by himself, which not only embody the characteristics of learning initiative, independence, openness, etc., but also make students to collide ideas and produce wisdom spark through research learning.

It has been proved by practice that students can engage in research learning in the atmosphere of democracy, freedom, relaxation and harmony. They can gain enlightenment and deep thinking, and the creative thinking can be improved. On the contrary, students will be lack of free thinking, reflection and critical thinking space if they study in a suppressed or too free and loose environment, which greatly hinder the development of students' creative thinking.

Enrich students' information knowledge channels and effectively integrate various resources

Enrich student information knowledge channel: colleges and universities should give full play to the advantages of information resources of campus network digital library and enrich students' information knowledge channels. Library acts as the school knowledge information center. It has rich literature information resources and information technology advantages in Internet, automation, informationization, construction of teaching material, etc. through long-term development and construction. Internet digital library gets rid of the space limitation of traditional library. Information and data in China and even all over the world are gathered together. It has the features of fast graphic retrieval and tool retrieval. Students and teachers can check library book catalog, books, journals, conference, scientific and technological achievements, other related literature as well as audio-visual materials in China and abroad. It is an ideal place for tens of millions of people to share information resources [ ]. Students can enter the Internet knowledge sharing space for broadening the vision, rich sources are available for make reproductive imagination, thereby inspiring and promoting the generation of the reproductive imagination.

Various resources are effectively integrated. First of all, human resources of multi-disciplinary teacher teams and out-campus tutors in all social industries are integrated, such as social humanities, science and technology, etc., a research teaching team is formed, thereby providing students with cross-major knowledge, experience, methods and technologies. It becomes a think tank to guide students for research learning. The intersection of disciplines is conducive to the cultivation of innovative talents, development of emerging industries and marginal disciplines. Meanwhile, it is also a cradle of inoculating research achievements. Secondly, existing Internet teaching platform of campus network, Internet boutique courses, electronic teaching database, special website, Internet open simulation laboratory and other support Internet research learning platforms are integrated. Digital construction integrating multi-dimensional three-dimensional learning resources provides students with a good Internet research learning environment.

Update education concept and establish a new concept of talent

Teachers should change the concept inconsistent with new science education thought, set up correct education concept, education concept, quality concept, course concept, talent concept, teacher concept, student concept etc. The education concept is changed according to the learning characteristics of college students and Internet
learning mode. Teachers should realize that university teachers are knowledge indoctrinator initiator to students on the one hand, they also should pay more attention to teach students of learning method, and the students can ‘learn to study’. Teachers should teach both knowledge and methods. Teachers should allow students to master the key of actively exploring the wide unknown students and master the ability and method to obtain knowledge and handle information. Students should be cultivated for applying the learned scientific knowledge into social life and practice creatively, and innovative complex talents should be trained.

Traditional learning is complemented and perfected by the research learning based on Internet mode. In the process, since students are lack of experience, and previous experience as reference is deficient, we should innovate firstly, and must meet various problems and defects. We may get nothing even after trying a lot. Teachers should not chide and criticize students, but should give more encouragement and support, thereby promoting students to generate research motivation and confidence to overcome difficulties. They can explore potential in practical activity through exploring and summarizing experience and lessons constantly. The research results can be strengthened timely during acquisition. They can discover hopes and realize self-value, thereby improving students’ scientific inquiry spirit and self-confidence.

**Cultivate the problem consciousness and create the problem situation**

Discovery and proposal of problems are more difficult than problem solution. Problem is the starting point of thinking and precondition of innovation [ ]. All inventions and creations come from life which are originated from problem proposal. Internet provides rich learning resources. Students can arrange their own learning contents and choose learning mode thereby improving learning initiative for improving enthusiasm and initiative of learning. The learned knowledge can be utilized for analyzing and solving problems. Materials and data can be collected in a targeted mode under the guidance of problem situation, thereby thinking deeply discovering problem, proposing problem, analyzing problem, putting forward hypothesis, causing argue, engaging in critical thinking and exploration, thereby solving problems. Students’ innovative thinking can be constantly developed and sublimated.

Creation of problem situation: it is the key to discover, explore and solve problems for stimulating students' thirst for knowledge and cultivating students' creative thinking. Creative thinking is always generated during problem solution. Teachers are not only indoctrinator of students in learning knowledge, but also should become helpers, promoters, front-runners, learning resources providers, learning situation founders and problem discoverers. The created problem situations can be progressive from less to more, from easy to complex, from perceptual to rational, from phenomenon to essence and from practice to theory and practice, which is beneficial to stimulate students' interest in learning, and improve the development of students' creative thinking ability.

Teachers should carefully analyze students' existing knowledge structure and all information resources for students to choose in the discipline curriculum teaching. Problem consciousness should be purposefully and playfully created, thereby creating teaching situation, excavating students' thirst for knowledge and creative potential, and stimulating creative thinking.
CONCLUSION

In short, students can engage in research learning on the Internet for opening up the field of vision, broadening the knowledge, getting rid of the lock of the book knowledge, opening the mentality, daring to break the conventional thinking, boldly imagining and putting forward their own ideas. The research learning under Internet mode is beneficial for arousing students’ learning and initiative enthusiasm, and enhancing their comprehensive ability to apply own learned knowledge and skills in solving practical problems thereby laying a foundation for lifelong learning and lifelong development. Teachers should constantly raise students’ practical scientific attitude and improve their scientific literacy. Teachers should train students’ theory practice ability and innovative thinking ability to discover problems, analyze problems and solve problems, and it has important significance to improve the students' practical ability, innovation ability and entrepreneurial ability.

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