“San Hua” Different-Step Teaching and Cultivation of College Student’s Creativity

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Abstract: The main task of universities is to develop with creative spirit and practice ability of senior specialized talents. “San Hua” different-step teaching as a new teaching method, problem-based teaching and subject-based teaching, integrated teaching (referred to as the “San Hua” teaching) unity in the teaching process, has changed the traditional teaching students knowledge of passive acceptance, make the students’ autonomous learning and teachers’ asynchronous guidance to create a democratic and equal and cooperative learning environment, stimulate the students’ learning motivation, internal effectively train students’ self-study ability, the ability to analyze and solve problems, and development of creative thinking, and scientific research quality and students practical ability, direct service for social and economic development.

Keywords: Different-step teaching; “San Hua” teaching; College students; Creativity

1. INTRODUCTION

Creation is an inexhaustible motive force of human social development. In the long course of development of human civilization, human progress of each step are condensed to create the ideological essence, is this all just the cumulative progress of material into a highly developed society today. The Higher Education Innovation and technological innovation as a knowledge base system, its duty is to cultivate the spirit and practical ability to create high-level expertise, the training needs of the times by teaching creative talents is an important task of colleges and universities.

2. CREATIVE CONTENT

2.1 The meaning of creativity

For the understanding of creativity, researchers discuss mainly from the creation of products, of the process and of the individual. Such as: the results from the creation of view, “creativity is the basis of some objective, using all known information, to produce a new, unique, social or personal value of the intellectual quality of products”[1], from the process point of view, the most typical argument is that the British psychologist Wallas proposed the “four stages theory” in 1926. It is preparation (gathering information), incubation (for information in a breeding state, to mature), clear (found problem-solving approach), verification (testing and improving the solution); from the creation of the individual, the U.S. psychologist Guilford said: “The creative personality is to create a representative figure of the combination of those features, this basic feature is the sensitivity, the concept of fluency, mental set of flexibility, new ideas, comprehensive ability, analytical ability, restructuring or re-define the ability of the breadth of the concept of structure and evaluation capacity, these characteristics in different areas have different binding mode”[2].

I believe that the psychological process of creating is not revealed until the creation of products from the definition of it is quite convincing. So this article that: creativity is a field, the individual use of the information known to produce a socially recognized innovative, unique and valuable quality of the results of intelligence. For this definition, a description of the following:

First, the products are innovative, unique, only to be socially accepted to a conclusion. If the rating agencies identified by the community, that the results relative to history is new, compared to similar products is unique, and to the positive development of society, then this outcome is a creation. If identified, that this was before the invention of this thing, this is a meaningful development of the creative individual. From this perspective, the former to create is the real creation, but the latter to create, we call it class to create.

Second, since the outcome is judged whether an individual with creative standards, then the individual only in the minds of generating creative ideas is not enough (this concept is only the individual himself knows that it is in implicit state), also need to Such creative ideas into practical results, will formalize the concept, to show outside. Such results can be a real product, it can be expressed in words something.

2.2 Create the conditions for behavior

From the above analysis, the results can be seen from the definition of creativity, not only produce creative concept of implicit, also have the ability be concept results. Thus creating the conditions as follows:

Related fields of knowledge: knowledge of related fields provide the raw materials to create. From the information processing point of view, to create is a combination of information, so the more knowledge, creative ideas generated the greater. Although sometimes
there will be solution to the problem of knowledge play the role of mindset and hinder the individual to a new direction to explore, but it played a positive role far beyond its negative impact.

Relevant skills fields: it refers to a number of practical skills. If the individual has the skill areas related to skills, he is likely to creative ideas into practical results.

Creative thinking: the creative potential of the individual whether or not the key to whether he is a creative idea, not a creative idea, it would not create. The creative idea generation depends on creative thinking. Creative thinking is the key of creativity.

Individual motivation and interest: creative ideas do not simply happen, nor will their results into creation, it must have the engine and the “belt”, use them to start thinking. Therefore, it must be to create motivation and interest.

The right environment: whether it is social, family or school, their environment should be democratic, free and relaxed, which is produced by the individual to create the soil.

3. CREATIVITY CHARACTERISTICS AND EXPRESSIONS OF COLLEGE STUDENTS

Primary and secondary schools to create individual development is mainly a good class to create. Most students in the 18-25 age period, the psychological development of a growing maturity and independence of abstract thinking are much higher than the primary and secondary students, while students with some professional knowledge and skills, so many of them may be combined with professional course of study to create a high production level of achievement made. Rich combination of many creative people, to create the results they produce most of the period also youth. So college life should be one of the most active period, and they generate more social value creation. Therefore, find their creative potential and characteristics, which to cultivate their creativity is very important.

3.1 Individual performance

3.1.1 A strong curiosity

Curiosity is the premise that problem, students will go without question, not engaged in a creative activities.

3.1.2 Take risks and challenge the spirit of the Adventure and challenge

Students of adventure and challenges in the courage to break through regular, dare to adventure, afraid of failure.

3.1.3 Independent personality

Independent, self-learning performance in the ideological and unyielding from others, do not blindly follow the action, does not believe in authority, like its own, and not according to the wishes of teachers, not conformity, so am not gregarious.

3.1.4 A rich imagination

Always good at creative imagination, it is not produced before the creation of the results, individual results in mind, imagine the shape, the other view, some idea may be absurd. Indeed, it is valuable to imagine that before driving the people to implement it, create new products.

In short, creative students always showed some distinctive personality characteristics, as long as we usually look closely, you can identify them. However, the study showed that the surveyed college students in the initial creation of personality characteristics of those with a ratio of 7.9%, while those with the creation of personality characteristics compared to only 5.5% [3]. This ratio is very low, indicating the creation of our students there are many problems in personality.

3.2 Thinking characteristics

3.2.1 Good at finding links and patterns between things - reflects the ability of inductive thinking

Students in learning and life will meet many complicated things, creative students find the differences and similarities between them, find the link between each other, or from a large number of examples of a kind of generalized principles and conclusion.

3.2.2 More questions for a solution - reflects the ability of deductive thinking

A formula, principle or method can be used to solve many problems, he explains the migration of knowledge, it also reflects the ability of deductive thinking.

3.2.3 From a different perspective

Students learn the knowledge is “profound” of knowledge, non-superficial knowledge, so there are always creative students to think from different angles the problem.

3.2.4 Do not rely on the collective recognized - reflects the independence of thought

Lack of independence of the student’s view of things most people tend to rely on, a herd performance, and independence of the strong students often do not rely on the collective recognized, always have their own independent opinions.

Researchers will also have information collection capabilities, sensitivity and fluency, and to explore college students thinking skills for evaluating whether
the initial characteristics of several indicators of creativity. Survey, with an initial rate of those creative features and 23.5%, while the rate of creative features are only 8.5%.

3.3 Performance results

Students form the major innovations for the college students on campus with access to innovative or social impact of scientific and technological achievements, inventions, patents, technology, soft science achievements, academic and literary works, etc..

3.3.1 Science and technology innovation

Such as scientific inventions, patent results, physical, and other kinds of science and technology through Cooperative project results.

3.3.2 Has a certain academic value of the academic, independent of literary and artistic works (calligraphy, painting, original songs, etc.)

3.3.3 Creative project categories

Cultural creative works of art, such as case planning, conceptual design, physical, creative market products, and other kinds of creativity through Cooperative project results.

3.3.4 Inventions in various scientific and technological activities, or the results match

3.3.5 College students self start

Self-start a high degree of creativity of college students performance.

4. “SAN HUA” OF DIFFERENT STEP TEACHING AND STUDENTS INNOVATIVE SPIRIT AND PRACTICAL ABILITY

Today the world tailor training innovative talents to improve competitiveness, but rather the essence of innovation is creativity, creativity can be seen whether a country has become a key factor in competitive capacity. Creative talents creative education model can not be separated. Creativity for College Students now broadly in two ways: First, create a set of specialized courses, the second is to organize students to participate in creative practice. Teaching through professional courses to train students creative approach to very few systems theory. As we all know, teaching as to achieve the education goals, the main way complete the personnel training, training in creativity, should play an important role. However, my university teaching system emphasized teaching expertise, lack of student self-involvement, explore and practice of learning, the knowledge of this passive recipient of culture is not conducive to the Cultivation of Creativity. The investigation also showed that: 44% of the students that “most of the teachers teach is completely duplicate the content of textbooks, students find themselves in a passive acceptance of tension”; 45.8 percent of the students that most teachers still use traditional teaching methods, not the group discussions, student forums to encourage students to independently explore the way into the classroom. Therefore, the reform of university teaching students the innovative spirit and practical ability appears imminent!

4.1 Higher “San Hua” of different step teaching nature of teaching

“San Hua” of different step teaching is a kind of asynchronous teaching methods to study the situation as the basis for purposeful, planned, organized and controlled by the macro and micro dynamic self-management system, the problem of teaching and subject teaching and the integration of teaching three stages of teaching an organic unity of the teaching process, so that individual students learn and teachers to conduct asynchronous guidance closely, and teaching objectives with the development of modern economic and social needs of the direct integration of open information technology teaching. Referred to as the “three” of asynchronous teaching methods.

4.1.1 Problem –based teaching

Problem–based teaching means, the existing high school curriculum teaching contents into a series of learning problems have internal relations, the teaching process to students in teachers’ guidance, independent analysis problem, problem-solving another creation of the learning process. In this one phase student learning is the predecessor or contemporaries knowledge and creating result. Students should master it must through their own learning activities are typically emersion predecessors or contemporaries for understanding the process of creation and achievements. So this is a process of creation. Through teaching stage, students not only learn knowledge system, more important is to cultivate their ability of self-study and analysis problem, problem-solving ability, and innovative teaching problems for transitional stage to lay a solid teaching stage task.

4.1.2 Subject-based teaching

Subject-based teaching, also known as creating teaching stage. At this stage students through exploration, discovery and creation of their predecessors or contemporaries did not understand and create things. It means that the problem of the teaching process, students under the guidance of teachers, according to the professional (or courses) content development needs and requirements of social development, to identify research projects for scientific research, access to scientific research process. Students of topics can be the subject of single subject, it can be multi-disciplinary, cross-disciplinary comprehensive subject.
4.1.3 Integration of teaching
Integration of teaching means that students under the guidance of teachers, teaching himself through the issue of access to knowledge for social practice and teaching subjects achieved through scientific research into the wealth of knowledge form the spirit or the reality of social productive forces, directly China’s socialist modernization process. This is created with the modern economic and social development needs of the direct integration of the comprehensive development of innovative high-level expertise, to achieve goals of modern higher education in the final stage. This phase also known as service teaching stage.

Problem-based teaching is subject-based teaching and the basis for the integration of teaching and teaching always throughout the university.

4.2 “San Hua” of different-step teaching operating mode of six-step-teaching
“Different-step teaching structure” consists of the teacher’s “five-step guidance system” (ask questions --- instruction method --- clear learning --- discussion --- strengthening effect) and the student’s “six-step learning system “(self-study --- practice --- listening --- homework --- correct --- summary) instead of two self-contained each other in the systems combination of composition. That the students of the “six-step learning system” into a general, named “students learning” and its insertion in the second step of the teacher behind the five-step guide. Constitute teaching for learning services teaching- six-step structure: direct methods to ask questions --- students learn to understand seminars to students at --- hardening effect [7]. However, the six separate process is not absolute, but also not always have to be strictly asynchronous teaching classes to complete the process of these six.

4.2.1 Ask questions
Teachers will be teaching the content unit was presented through questions, problem-based teaching practice. Teachers raised the issue that contains two types of operations. One for the basic operations (main solution to every cell contains the key and difficult issues); and those for large operations, students learned the use of a unit or several units of knowledge together to solve a big problem (the former or contemporaries of concern to the more meaningful development of theory or application of a hot issue). On the latter issue can be raised by teachers, students can study according to their interest in teaching content of the combined unit the subject of inquiry.

4.2.2 Instruction method
Ask questions, the teacher should instruct the whole class to solve the problem. As recommended by the professional authority to the students of literature, the network platform to explore the issue of attention for students to study fewer detours.

4.2.3 Students learning
The next time into the autonomous learning, each student from their own reality, the use of the “six-step learning” to address the teachers and their learning process in question.

4.2.4 Clear learning
Through visits (conditional can also be a forum for online course platform or QQ group, e-mail, etc.), teachers understand student learning and learning problems.

4.2.5 Discussion
For students, classification and the individual instruction, the teachers and students interact and improve together. Students can also carry on learning and BBS through learning, students of the mutual cooperation and mutual between, problems unresolved. This process is a student in individual learning ways of exploration, research, and the process of problem solving.

4.2.6 Strengthening effect
Basically solved the problem of students, the teacher (or students and teachers) can be summarized the results of the study, evaluation, that is, strengthening.

4.3 “San Hua” of different-step teaching students to effectively train the innovative spirit and practical ability
First, the problem of teaching effective self-learning ability of students to analyze issues and solve problems for the future and create more knowledge to achieve the basis of raw materials, but also help train students creative thinking.

Because of the “three” of teaching through problem-driven lead teaching, teachers teaching the existing course content, into a series of learning problems intrinsically linked to teaching activities into the students under the guidance of teachers, self-analyzing and solving problems process of exploration. The traditional teaching method primarily to passive acceptance of knowledge, and asynchronous teaching students to learn the real subject, teachers play the role of asynchronous guidance, students have a lot of independent learning and exploration of the time, and thus can effectively develop students self-learning ability so as to obtain more knowledge for self-creation basis. Experiments show that the asynchronous teaching, 93.4% of the students that effectively enhance their learning ability, and aroused great interest in learning, 90% of the students that the increase in their analysis of problems and problem-solving abilities[8].

Teaching of the thinking process is also a development process. Each student is bound to solve a problem typically reproduce in the mind of previous thinking process to solve this problem, so that reproducibility of thinking is the basis for creative thinking. When students
run into after their predecessors had not encountered a new problem, you can use this thinking to analyze and solve problems, it will certainly creative thinking by identifying, analyzing and solving problems and nurtured. Similarly, scholars in Taiwan have offered called “PBL (Project-Based Learning)” mode, which advocates creating an active participation and discussion of students learning scenarios, and thus arouse students interest in learning situations, it is issue-driven to trigger a variety of learning activities, learning, students in the learning process must ask questions, define problems, collect data, learn and work together to create concrete results, and thus stimulate their creative thinking ability.

Second, through project-based teaching, training students in professional practice research quality and capacity. The subject of the teaching period, students began trying to carry out practical activities innovations that engage in extra-curricular activities, research, or engage in “small inventions”, “small to create,” or to participate in the teacher’s subject. It changes the student teachers in the past simply to accept the transfer of knowledge-based learning, students build an open learning environment, providing multi-channel access to knowledge and opportunities for applied practice, so as to nurture their creative spirit and practical ability. In other words, students participate in the process of scientific research is the quality of formation and development of its innovative process. For example, Cheng Xuhua information courses through the use of asynchronous teaching, 95% of the students thought the results to improve their search skills. Therefore, the three “of asynchronous teaching” can effectively improve their professional skills.

Third, different-step teaching learning situation from the start, help inspire students to learn the internal motivation, to develop creative personality.

Creativity training needs of a democratic, free, cooperative classroom atmosphere. Asynchronous Teacher’s identity has always been there to guide, rather than autocratic authority. While the classroom gave the students a lot of self-study time and space, students in thinking and action are free, and very little interference by others. Between the student and the student is cooperative, because students can learn, you can also group learning, group learning to play the full effect. In short, the appropriate atmosphere for the students provided a fertile environment for creative learning.

5. CONCLUSION

Creation of human and social development of the inexhaustible motive force, results from the creation to see creativity as a produce new, unique social value of products. It requires individuals not only to generate creative ideas implicit, but should be formalized this concept, the ability to show outside. Undertake higher education training for social development with the creative spirit and practical ability, teaching as the main way to achieve the education goals, fostering creative talents should play a major role. Through the problem, the subject and the integration of teaching, “San Hua” different-step teaching changes the students passively receiving knowledge, the lack of hands-on practice situation, the student’s individual learning and teachers combine asynchronous guidance, the creation of a democratic, free, relaxed atmosphere for learning. By developing self-learning abilities, analyze problems and problem-solving ability to develop creative thinking, create an independent, autonomous, critical, questioning spirit of the creative personality, training students in professional skills and practical ability for undergraduate creative act laid the foundation for the production.

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