Research on Teaching Reform of Engineering Education Major Based on Multiple Intelligence Theory

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Abstract

Guided by the theory of multiple intelligences, we will guide the reform of teaching design and process of engineering education from the goal of establishing multi-intelligence training; design and organize various learning experiences to promote the development of students' multiple intelligences; establish an education of "one can't be bad" The quality concept enables each student to achieve a high level of achievement; pay attention to each student's intelligent short board, guide and create opportunities, eliminate short-board effects; adopt the principle of appreciation education, be good at discovering and affirming each student's progress and flash In these five aspects, some strategies and methods of teaching reform in engineering education are analyzed.

Keywords

Multiple intelligence; engineering education professional teaching; teaching strategies and methods.

1. Introduction

According to his theory, some people may have higher levels of intelligence in some or some aspects of intelligence, but generally or weaker in other aspects of intelligence, according to the theory of multiple intelligence proposed by American psychologist Gardner in the 1980s. . People's low level of intelligence in some aspects does not mean that other levels of intelligence are necessarily low. The theory of multiple intelligences suggests that people, especially teachers, cannot evaluate the overall level of students' ability in a subject's performance, nor can they form a target for the future development of individual students. In the real world, many people have some or some intelligent advantages, and the level of other intelligence is not bad, and often can achieve greater achievements; without highlighting the advantages of intelligence or having more intelligent shortcomings, it will affect people's work. Results. Therefore, in the university stage, we should pay attention to the development of students' various intelligences. Students should not have obvious intelligent shortcomings at the beginning of their lives, so as not to affect the future study and development. School teachers should establish "one can't be bad". The concept of education that "one subject can't be bad". In many countries, psychological and educational experts and school teachers have begun to use the theory of multiple intelligence to guide the school teaching reform to promote the development of students' multiple intelligences. Some schools in China have also begun to explore this aspect. However, how to develop students' multiple intelligence through the teaching of "Microcomputer Principles" is still relatively rare. Therefore, this paper hopes that this study can provide reference for teachers in schools.

2. Establishing the goal of multiple intelligence training, leading the teaching design and process reform of "Microcomputer Principle"

The goal is the leader of behavior. What kind of teaching has what kind of teaching process, students have corresponding learning experience and experience, students will form certain concepts and abilities through these experiences and experiences. The curriculum standards and teaching

objectives of China's "Microcomputer Principles" are formulated by the experts of "Microcomputer Principles" according to the characteristics of disciplines and the development of students' thinking ability. The important objectives of the disciplines are considered, and the objectives of language, introspection and other aspects are less considered. . Engineering education plays an irreplaceable role in the development of students' mathematical logic ability, but the content of engineering education is relatively simple. Teaching activities have many opportunities and opportunities in developing students' language, space, introspection, and interpersonal. As long as teachers can use them consciously, they can promote the development of multiple intelligences. Therefore, teachers should not only be limited to the subject objectives, but should establish a multi-intelligence training goal, not only to develop mathematical logic intelligence, but to enable each student's multiple intelligences to achieve a higher level of balanced development in the learning phase. Teachers should be able to sharply identify the teaching content, teaching links and activities that can promote the development of students' multiple intelligences, and consciously organize the corresponding activities and experiences to improve the multi-value and effect of teaching activities. For example, the spatial perception ability of students can be developed by calculating and describing the positional relationship between the family and the school; the language intelligence of the students can be developed by letting the students explain the problem of the problem-solving process, and the students can mutually approve the work and self-approval. To develop students' introspective intelligence.

It should be pointed out that the establishment of the goal of multiple intelligence development does not require that each class should effectively cultivate the nine kinds of intelligence of the students. Instead, it is hoped that the teachers can arrange the structure and order of the teaching contents in each grade and each teaching unit. There are corresponding multi-intelligence development goals and plans to gradually develop students' multiple intelligences. Therefore, under the goal of multi-intelligence development of teaching, teachers should also deepen their understanding of the overall structure and sequence of textbook content, explore the development value of other teaching content other than mathematical logic intelligence, and design corresponding links and activities. It also promotes cross-disciplinary learning and is combined with other courses. Break the barriers of traditional teaching in teaching, communicate with other disciplines, integrate the power of different disciplines, and promote the development of students' multiple intelligences.

3. Design and organize a variety of learning experiences to promote the development of students' multiple intelligences

Professor Taylor, an American curriculum theory and education evaluation expert, pointed out very early on that learning takes place through the active behavior of students. It depends on what the students do themselves, not what the teachers do. Because only through experience, it will produce changes in behavior and emotional attitudes, so that learning can be produced, and thus it is possible to achieve educational goals. The theory of multiple intelligence emphasizes the pluralistic "intellectual view", which requires attention to the overall development of students, with particular emphasis on the combination of multiple intelligences. To determine the multi-intelligence development goals, the teacher's main task is to select the corresponding learning experience to stimulate their various intelligent combinations, thus promoting the development of students' multiple intelligences.

Every kind of intelligent development requires specific learning activities and experiences to promote. Some activities and experiences can only promote the development of one ability, while some learning activities and experience can promote multiple intelligent development. We believe that in the teaching process, the organization of the following activities will help students develop a variety of intelligence.

a). Appropriately increase language expression activities

The development of students' language expression ability is realized in the process of continuous language expression practice. Classes should focus on developing students' use of language to express their opinions. Therefore, in the "Microcomputer Principles" classroom should increase the language expression link, so that each student has the desire to say, have the opportunity to express their own ideas. Teachers can give guidance to students in their process of language expression by allowing students to think independently about preparing to speak, answering questions, group communication, questioning each other, reporting homework problems, project assignments, group assignments, etc. Help students improve their language expression.

b). Appropriately increase student evaluation practice activities

The development of students' self-examination ability is also realized in the continuous evaluation practice. In the teaching, we should pay attention to the development of students' self-evaluation ability. Therefore, in the classroom, students should be added to the evaluation process, so that students can better understand themselves in the process of evaluating others. Teachers can help students to master the homework evaluation methods by learning the homework evaluation methods, so as to learn to evaluate their homework, gradually develop self-examination habits, and slowly self-reform and develop students' self-examination ability. It also allows students to listen to other people's answers and compare them with their own ideas.

c). Properly arrange group activities

Group activities include project discussions, organization and planning, communication and communication, and the formation of written reports and oral reports. In this process, students' multiple abilities can be developed. Teachers can develop the organizational skills of as many students as possible through the division of labor and cooperation; students can develop their planning skills through independent project planning in the group; students can develop their language skills through communication and communication within the group, especially Listen to others' opinions, listen to others' opinions, and feel the feelings of others. This kind of interaction can establish a good relationship of mutual respect among students, help students to correctly evaluate others and themselves, and thus promote the development of students' introspective intelligence and interpersonal intelligence.

4. Establishing an education quality concept of "one can't be bad", so that each student's grades reach a high level

University is the basic stage of everyone's learning career, and it is the basis for determining students' future study and career choices. College students do not learn well, and lack of confidence in engineering education will directly lead to backward learning or even poor performance. The grade will determine the level and type of his progression. Teachers should fully recognize the important role of engineering education at the university level in the development of students' life and learning, establish an education quality concept of "one can't be bad", and reform classroom teaching so that each student's grades reach a high level, especially Provide effective guidance and help for underachievers, so that their learning can reach a level of mastery or even higher level, so as not to become an obstacle to future study, other subject learning and future life development. According to Bloom's point of view, "mastery level" means 80-85% of the scores in a test that reflects the curriculum standards.

The use of multiple intelligence theory to reform classroom teaching, through the organization of a variety of activities and experience, can stimulate students' interest in engineering education majors. Teachers can create an atmosphere in which students can freely explore new things and unfamiliar environments, and let students boldly express their opinions, let each student participate in the study, do more hands-on, think more, speak more Experience the joy of active participation and communication. It is also possible to introduce new lessons in multiple forms, to link students' hobbies and learning content, to connect real life with the classroom, to stimulate students' enthusiasm for learning, and to make the classroom full of fun at the beginning. You can also use the

multi-disciplinary media such as slides, audio-visuals, and computers to display the content of specific images, so that students can enter the state of knowledge as soon as possible, and build a multi-intelligent environment of cooperation and inquiry. Through some practical and interesting games and activities, students can learn in a pleasant atmosphere and feel the fun and practicality of "Microcomputer Principles".

Stimulating students' interest in learning is an effective way to improve students' performance. Interest is the best teacher. Only students who use what they have learned in their daily study and life can appreciate the joy of learning and close the curriculum and students. distance. In addition, teachers should also have a sense of responsibility. Tolstoy once said: "If a person does not have enthusiasm, he will accomplish nothing, and the basis of enthusiasm is responsibility." Good teachers and students should also be established. Relationships to promote teaching, a good teacher-student relationship is a prerequisite for effective communication between teachers and students. Personalized assignments can also be designed according to each student's knowledge level and intelligent characteristics, while paying attention to correcting the assignments and finding timely feedback.

5. Focus on each student's smart short board, guide and create opportunities to eliminate short board effects

In today's society, although a small number of people have become stars or special talents because of certain special talents, many people have influenced the level and type of further studies because of their own intelligent shortcomings or short courses. I like the school, profession or career, leaving a lifetime regret. In fact, many people's smart shortcomings and short disciplines have specific performances at the university level - partial science. According to the statistics of the final exam results of the microcomputer principle course of a university in Lanzhou, we found that the students' "Zero Principles", "Mathematics" and "English" final exam scores in the grades of Z scores above 2.0 are 11.1%. The gap is above 18.5%, accounting for 18.8%. It can be seen that at the university level, a considerable proportion of students have begun to appear partial psychology. Some students have good grades in one subject, but in other disciplines they are flat or even poor. If you don't pay attention, these students will be harmed by the partial subjects.

As a teacher, you should also fully recognize the shortcomings of each student and other poor science, give students guidance, and create opportunities to develop their smart shortcomings with the help of students' intellectual advantages. Teachers can also arrange personalized assignments based on student intelligence and personality, and develop students' diverse potentials through diverse assignments. According to the differences of students, the teachers arrange hierarchical work, so that students can choose their own homework that can be successfully completed from their own level. Such an assignment can not only cultivate students' interest in learning, but also transfer the superior intelligence of students to the weak intelligence. At the same time, teachers should pay attention to the usual homework, exercises and students' life experience, social reality, and train students to discover problems, ask questions, analyze problems, solve problems, and discover and develop the potential of students in various aspects. Teachers can also learn the latest developments in student learning through careful revision of student assignments, provide timely guidance, and use their intellectual advantages to develop their smart shortcomings in a personalized way.

Teachers can also guide students to actively design practical and interesting thematic activities to eliminate students' shortcomings. Let students comprehend the origins of life, and the topics of practical learning are not related to the content they teach. In the process of thematic practice, the learning materials provided by teachers often cross the boundaries of the discipline, which means the opening of resources. Students can study different aspects of the same topic according to their own interests, which has the freedom to choose learning materials, and also has the opportunity to explore various fields of study. In the special learning activities, from identifying the topic to showing the communication to answering the questions of teachers and students, students will have the opportunity to combine various intelligences to develop a variety of intelligence. Teachers can also

learn about each student's intelligent characteristics through special learning, and create conditions for each student to develop a suitable smart short board.

6. Adopting the principle of appreciation education, good at discovering and affirming the progress and highlights of each student

Teachers' timely affirmation, praise and encouragement of students' progress and highlights will help to develop students' satisfaction and sense of accomplishment. The teacher not only affirmed and praised the discipline of "Microcomputer Principles", but also gave high praise to the progress of other disciplines, which helped to cultivate students' interest in various subjects. At the same time, students' intellectual advantages in other disciplines are used to accumulate their experience to stimulate their interest and desire for learning.

The purpose of the evaluation is to enable teachers to understand the process and effects of the student's "computer principle" learning, so as to improve their teaching to motivate students. Infiltrating the theory of multiple intelligence into learning evaluation can make the evaluation of students' learning effect more scientific, reasonable and comprehensive. Pay attention to the growth and learning of each student, stimulate students' driving drive in recognition and encouragement, mobilize learning initiative, consciously participate in learning, and improve the effectiveness of learning. Teachers should evaluate students from the perspective of individual development, focusing on how much students have progressed on the original basis and what level they have developed. Moreover, teachers are required to respect the individual differences among students, and comprehensively evaluate students in a multi-angle and multi-faceted manner. It is necessary to evaluate the development level of logic intelligence from the aspects of knowledge and skills, thinking and problem solving, and also pay attention to students' emotions. The development of attitudes and values and the development of multiple intelligences help students to understand themselves and build confidence.

Appreciation education has six principles in its implementation: trust, respect, understanding, motivation, tolerance and reminders. To achieve these 6 points, we must achieve 12 learning: learn to listen, learn to ask, learn to reflect, learn to wait, learn to worship, learn to be proud, learn to be grateful, learn to accompany, learn to discover, learn to share, learn to criticize, learn to share. Our love for students, encouragement for students, a positive look, a brilliant smile, and a "you are awesome" can create miracles! So don't lick your thumbs up. Love is the sun, wherever it shines, there is growth! Say you can do it, you can't do it!

7. Summary

People's intelligence is diverse, no one can master all the knowledge, and no one can achieve the best in all intelligence. However, as a teacher, we should be aware that the shortcomings of students in certain intelligences will affect the full realization of other intelligent social values! Education is an art, and teaching has the space and opportunities to develop students' multiple intelligences. We believe that as long as our teachers can cross a simple view of the subject, establish a multi-intelligence development goal of "one can not be bad", "one subject can not be bad", "one aspect can not be bad", pay attention to students' short intelligence Board, good at discovering opportunities that contribute to various intelligent developments, good at designing and organizing the learning experiences required for various intelligent developments, good at appreciation education, innovative methods and measures for teaching students in a new era, and our teaching can transcend traditional education. The scope of the rise to a new realm of quality education that can promote the development of students' various qualities!

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