

A Study on Exploring Interdisciplinary Educating

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Abstract

The concept of inter-discipline is no longer unfamiliar under the background of trans-boundary integration. Interdisciplinary teaching has its advantages in several aspects such as quality education, subject assistance. This paper focus on discussion on several aspects of interdisciplinary education: educational function, subject system, mechanism and implementation. The aim is to reveal the existing problems during interdisciplinary educating activities and seek for the solutions. By studying the cross-disciplinary education system this study tries to seek the suitable training mode of interdisciplinary educating for China, so that it can play a more active and role in in higher institution and universities.

Key words: interdisciplinary educating, education, teaching research

Introduction

Inter-discipline concept is no longer unfamiliar in the era of rapid development and innovation of science and technology, inter-discipline combines two or more disciplines, which transcends the depth of the original discipline and extends the research field from different perspectives. Interdisciplinary cooperation has become the future development trend in solving complex problems. New emerging industries need to cooperate with inter-discipline know-how to solve complex problems, thus it is key to cultivate and integrate the concept of Interdisciplinary educating method into traditional teaching structure in order to meet the job market requirement.

Interdisciplinary higher education was put forward and highly valued by educators in 1930s. Take United States as an example, in 2000, 60 first-level interdisciplinary disciplines were established, accounting for 21 percent of the total number of subjects. In addition, there are interdisciplinary education in similar subject groups and within disciplines. Independent interdisciplinary research institutions were established, joint teaching between teaching institutions and enterprises and institutions were also carried out in many fields like medicine, computer science, mechanics, Design etc.

1. Integrate interdisciplinary teaching into traditional teaching mode

The development of interdisciplinary disciplines has formed a certain educational model and has been widely used in the teaching system of colleges and universities. Recently, there have been attempts in general elective courses and postgraduate teaching, especially in medicine, computer science, physics, mechanics and design, in which the importance of interdisciplinary knowledge teaching is more

and more emphasized and, integration of Interdisciplinary teaching into traditional teaching mode are becoming a new trend.

1.1 Interdisciplinary teaching based on general elective courses

With the goal of expanding students' horizons and promoting their comprehensive development, general elective courses play an important role in colleges and universities. Students of different majors can choose courses of different majors and have certain requirements on elective credits, thus promoting students' learning of interdisciplinary subjects. In addition, elective course is relatively flexible and easier to implement since it depends on students' will to choose, thus could help reduce students' pressure on. Furthermore, the MOOC platform and various online teaching sources also make interdisciplinary learning more accessible and feasible.

1.2 Interdisciplinary teaching and dual degree

1.3 Interdisciplinary teaching between similar disciplines

1.4 Workshop-based short-term practical to solve problems using interdisciplinary knowledge

2. Problems in the implementation of interdisciplinary teaching

As interdisciplinary education constantly growing, there are also some problems during the development process which worth more attention and reflection, such as the effectiveness of interdisciplinary teaching, it may stay on the level of primary understanding and lack of practical ability to solve the real-life problem with their interdisciplinary knowledge, which may ascribe to lacking systematic construction of interdisciplinary disciplines so that the interdisciplinary teaching still stay on relatively surface level.

2.1 Lack of systematic construction of interdisciplinary disciplines

Cross-disciplinary education is likely confined to the level of contact and understanding at the moment. It is still a problem such as lacking independent first-level discipline and its own cross-disciplinary teaching group apart from the general elective courses. Therefore, there is no real construction of a cross-disciplinary teaching system; besides, courses such as dual degrees, professional elective courses and general elective courses have not formed an effective inclusion in the sense of mutual understanding.

2.2 Lack of consciousness and initiative

The existing cross-discipline courses are mostly built in elective course platform or in a cross-discipline team and workshop formed for a certain project. Long-term and stable research subject group co-operation mechanism is lacking, also, the initiative of the research of the innovative cross-discipline is still lacking.

2.3 Lack of practical ability

With regard to non-professional learning, in-depth knowledge is missing, some interdisciplinary courses are more about appreciation, understanding the methodology, there is no clear teaching target set and no restrict requirement for students, this may inferior their abilities to solve real problems by utilizing the interdisciplinary knowledge.

3. Exploration of the multi-disciplinary education model

3.1 The systematic construction of inter-discipline

Cross-disciplinary education has been paid more and more attention, however, the promotion of systematic teaching mode is needed to effectively implement the interdisciplinary education in higher education: multi-direction and first-level inter-discipline, cross subject group, course that help to promote the interaction between different subject are crucial, in order to build cross-disciplinary cognitive education, together with inter-discipline comprehensive education and, comprehensive inter-disciplinary education system.

3.2 Carrying out the project-based cross-disciplinary cooperative teaching

Funding project is regarded as the practical teaching implementation of the interdiscipline. It is not only the most effective way to promote the cultivation of interdisciplinary talents, but also to accelerate the transformation of interdisciplinary teaching achievements and the formation of a sound operating mechanism for scientific research projects. In funding project, complex problems require virious of inter-disciplinary knowledge, thus students have the opportunities to integrate their background knowledge with knowledge of new field, try to solve problems and deal with problems then gradually the goal of interdiscipline training can be achieved.

3.3 Multiple forms of interdisciplinary education

Together with the traditional ways mentioned above, it is also important to absorb social forces, form educational alliances with enterprises, institutions and social organizations, to overcome the difficulties that cannot be solved by classroom instructing.

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