

Based on C-STEAM Education Case Teaching 5C Model

Xia Liao

School of Business, Guangzhou College of Technology and Business, Guangzhou 510850, Guangdong, China.

Abstract : STEAM education is an interdisciplinary integrated education that integrates science, technology, engineering, arts, and mathematics. Due to the lack of Chinese localization, C-STEAM education is proposed on this basis, that is, cultural elements into education. This article is based on the C-STEAM education, combining with the information processing theory to build the new liberal arts majors in colleges and universities case teaching 5C model, including cultural perception, cultural cognition, content (major) discussion, connection with practice, and the summary and reflection on five steps, compound talents training goal of colleges and universities, in order to achieve new liberal arts majors in case teaching for the future reference for practical application.

Keywords : C-STEAM; Cultural Elements; Case Teaching; 5C Model

1. Introduction

Culture is the soft power of social development and plays an important role in individual development. With the increasing degree of social competition, enterprises have diverse demands for talents, especially for liberal arts positions, which require data processing, analysis capabilities, and so on. Only the education of liberal arts itself could not meet the needs of social talents, so the education of liberal arts students also put forward higher requirements for corresponding education. The STEAM education is proposed by American scholars Yakman and Lee (2012) on the basis of STEM (Science, Technology, Engineering, Mathematics) education, introducing the discipline of art. An interdisciplinary integrated education model that integrates science, technology, engineering, art, and mathematics. As STEAM education comes from other countries, it lacks the localized development of the Chinese context. Based on the profound and excellent traditional cultural context in China, Zhang Zehui et al. (2020) proposed to incorporate culture into STEAM education and proposed C-STEAM education. C-STEAM does not simply superimpose various disciplines but integrates education for the cultural inheritance, with cultural inheritance as the goal orientation and multi-disciplinary integration education as the realization method to cultivate talents.

At present, there are three main problems in the integration education of new liberal arts and sciences: one-sitization, separation of theory and practice, and lack of scientific selection of subjects in multi-disciplinary education. Wu (2020) points out that the construction of new liberal arts needs to solve three forward-looking problems, including the characteristics of the new era, knowledge innovation, and cross integration. Therefore, many scholars have proposed solutions from different perspectives, and the most effective mode is STEAM. Zhang Huirong (2021) put forward such as STEAM aims to improve students' creative ability to solve real problems and complex science, cultivate comprehensive, creative, and applied talents education mode, promote the STEAM education reform is conducive to comprehensive, complex, innovative, and applied talents training, thus can improve the teaching quality of the whole education. As a very important way to train new liberal arts professionals in higher education, multi-

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disciplinary integration education is still in the stage of exploration, so there are still many problems to be solved. Case teaching is a very important means in the course of discipline integration education for new liberal arts majors. Currently, there is no guiding framework for case teaching in discipline integration education of new liberal arts. Therefore, through in-depth research on C-STEAM, this paper constructed a 5C model of case teaching of new liberal arts specialty in colleges and universities based on information processing theory in order to achieve the goal of cultivating new liberal arts talents in colleges and universities.

2. Practical difficulties and solutions

With social development and scientific and technological progress, the industrial structure has become more and more complex, and the disadvantages of the demand for discipline refinement in the past have become more and more obvious. The demand for talents in society now mostly develops to compound and comprehensive demand, so the demand for talents has become a trend of multi-disciplinary and interdisciplinary integration. Liberal arts are an important tool for people to understand and transform the world. Compared with traditional liberal arts, Wang and Zhang (2019) put forward that the new liberal arts have four new characteristics: strategic, innovative, integrated, and developmental. Among them, integration refers to the cross integration of multiple disciplines; That is, the education of new liberal arts no longer exists in the content of the major itself, and the knowledge of other disciplines needs to be integrated into the education process.

Xiong (2021) believes that information society is the concentrated embodiment of discipline integration, an information society is an important symbol of modern society. However, the construction of new liberal arts currently faces many practical problems. Wu (2020) points out that the construction of new liberal arts needs to solve three forward-looking problems, including the characteristics of the new era, knowledge innovation, and cross integration. Ma (2021) puts forward four problems in the current construction of new liberal arts, among which the discipline classification system does not meet the needs of social talents, and the talent training system cannot meet the goals and requirements of talent training. Xiong (2021) points out that liberal arts students have a sense of distance from the information society and are unable to use computer technology to solve practical problems; That is, effective discipline integration is not achieved in talent cultivation of discipline integration education. Huang and He (2021) pointed out that in the past liberal arts were devoted to explaining the world and only focused on theoretical interpretation etc. To sum up, there are three main problems in the current integration education of new arts and sciences: one-sitization, separation of theory and practice, and lack of scientific selection of subjects in multi-disciplinary education. These problems restrict the development of liberal arts education, lead to talent training that does not meet the needs of society, and trigger the public to question the training model of liberal arts education.

In order to solve the problems of interdisciplinary integration education, case teaching has proved to be an effective teaching method from theory to practice and is an important means of new interdisciplinary integration education, but there are many problems at present. Zhu (2013) analyzed the problems existing in case teaching of fiscal disciplines, such as the ‘full load’ teaching of cases, the appropriateness of case selection, and the failure to ‘combine theory with practice’ in case teaching. Huang (2015) analyzed the existing problems in case teaching of business administration, such as insufficient understanding of the importance of case teaching, lack of management cases, and excessive subjectivity. Li et al. (2017) put forward multiple dilemmas in the current practice of case teaching, such as the excessively single objective of case teaching and the lack of consideration of localized cultural context, etc., especially the problems of cultural deficiency and ethnic culture deficiency.

The most important and core problem of new liberal arts education lies in the insufficiently close and integrated construction of new liberal arts specialty, discipline integration, and culture. The new liberal arts should focus on ‘changing the world,’ so the development of liberal arts should not only exist at the theoretical level but should be connected with society and practice. Meanwhile, the ‘cultural’ factor should be placed in an important educational position. C-STEAM education provides a guiding framework for the construction of new liberal arts, the integration of disciplines, and the effective combination of culture, and provides practical ideas for the case teaching of new liberal arts in the future.

3. C-STEAM: Case teaching 5C model

Zhang Zehui et al. (2020) closely constructed the C-STEAM design 6C model based on cultural factors. From the content of the model, this model is relatively suitable for culture-related professional teaching, but it lacks universality; that is, it lacks application

to various majors of new liberal arts. In essence, the discipline integration education cannot be separated from the theoretical knowledge related to the major. Therefore, in order to better carry out the discipline integration education of new liberal arts, this paper builds 5C model of case teaching of new liberal arts in colleges and universities from the perspective of cultural inheritance based on C-STEAM education research and information processing theory (as shown in Figure 1). 5C model includes five steps: cultural perception, cultural cognition, content (major) discussion, connection with practice, summary and reflection, so as to achieve the goal of composite talent training.

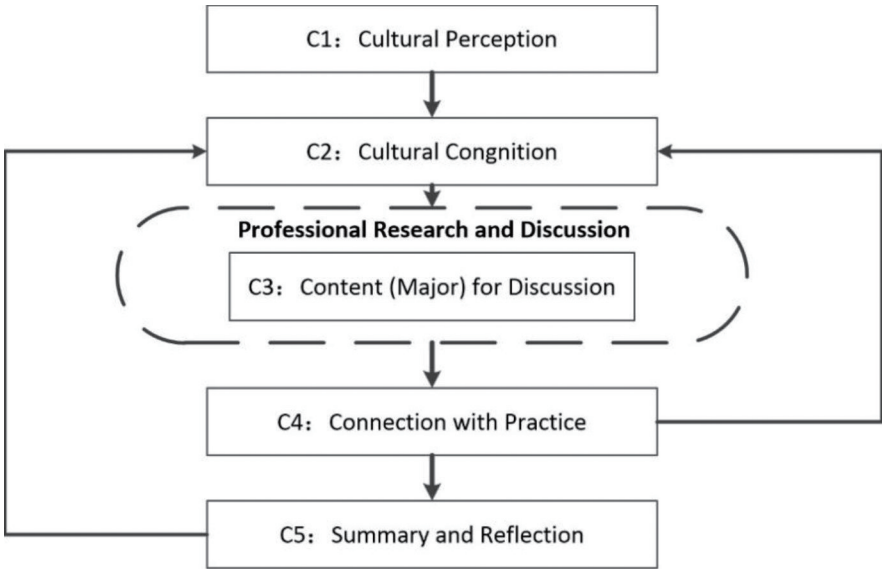


Figure 1. Case Teaching 5C Model for Cultural Inheritance C-STEAM Education.

3.1 Cultural perception (C1)

Perception is the human brain’s intuitive reflection of objective existence, which can be people, objects, situations, etc. Cultural perception (C1) refers to that students from their initial sense through reading case materials in case teaching. This process is the first step from the world outside the case to the world of the case. Everyone’s initial feeling of objective existence will be different, and it is the difference that enriches cultural feeling.

3.2 Cultural Cognition (C2)

Cognition is based on sense with corresponding meaning, interpretation, etc. Solomon’s understanding of cognition includes exposure, attention, and interpretation. Everyone’s personal experience is different because of their different experience, knowledge, and environment, which leads to different views and interpretations of things. Cultural cognition (C2) refers to that in case teaching, and students form their own understanding and interpretation through reading the cultural connotations involved in case materials.

3.3 Content (major) discussion (C3)

Liberal arts include marketing, e-commerce, international trade, business administration, and other majors, covering all humanities disciplines, and each major has its own professional field content. No matter how the teaching is reformed, the introduction of professional content should not deviate from the core point. Content (Major) discussion (C3) refers to the in-depth analysis of cases in various forms such as teachers, students, student groups, and teams in case teaching, and the professional content involved in the case is studied and discussed.

3.4 Connection with practice (C4)

There are various forms of liberal arts practice, such as project-based work and the introduction of real enterprise projects. Through case teaching, students can not only understand the cultural perception and professional content theory part but also how to put the knowledge into real production practice. Connection with practice (C4) refers to that in case teaching, teachers and students extend and expand the knowledge they have learned, connect the knowledge to the society based on experience, and carry out classroom discussion and after-school project-based homework.

3.5 Summary and reflection (C5)

Any learning without summing up and thinking will float to the surface. Summary and reflection (C5) refer to that in case teaching, teachers guide students to further summarize and think about the first four processes in terms of professionalism, cultural perception, and practice.

All majors of new liberal arts have their own characteristics and professional contents in case teaching. The five steps involved in the 5C model, which is built with the inheritance of excellent traditional culture as the guidance, can be adjusted according to the professional characteristics in the specific implementation process.

4. Practical application: the case of ERKE

This paper takes the marketing major as an example and uses the case teaching 5C model developed in this paper to analyze the case. This paper chooses ‘Erke’ brand donates 50 million yuan for Henan as a case study. In step C1, professional teachers show this case in the form of words, pictures or videos, so that students can have intuitive cultural feelings through the materials. In step C2, under the guidance of teachers, further explore the cultural connotation and study the corporate social responsibility demonstrated by the case. In step C3, the research and discussion is mainly based on professional content. This case is to discuss how to influence consumers’ purchasing behavior in marketing, so this step needs to be adjusted according to professional characteristics and course content. In step C4, there are many practical problems involved in this case. For the focus of the course, it is necessary to let students know how marketers influence consumers’ behaviors by enhancing their sense of social responsibility towards enterprises. Therefore, such theories can be applied to other cases for extension and expansion. In step C5, after the understanding and analysis mentioned above, students are encouraged to take the initiative to think and summarize all viewpoints so as to improve their memory and internalization of the contents and core values of the major.

5. Conclusion

Keywords such as digital, intelligence, science and technology, information, innovation, literacy, and civilization have been mentioned by many scholars in various fields and are also an important part of social development. At present, the most important and core problem of new liberal arts education lies in the close integration of new liberal arts specialty construction, discipline integration, and culture. Case teaching has proved to be an effective teaching method from theory to practice and an important means of new liberal arts discipline integration education, this article is based on the C-STEAM education bring culture into the important position of education by combining with the information processing theory to build the new liberal arts majors in colleges and universities for cultural inheritance case teaching 5C model, including cultural perception, cultural cognition, content (major) discussion, connection with practice, and the summary and reflection on five links, to achieve the compound talent training target. Future research can further verify the validity of the model from an empirical point of view or develop models in line with professional characteristics based on different specialties. The study also provides some references for the practical application of new liberal arts majors in case teaching in the future.

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