

The Mechanisms and Formation Paths of Interdiscipline: A Methodological Perspective Based on the Discipline of Chinese Language

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Abstract: Interdisciplinary thematic teaching is an innovative measure to lead the reform of teaching methods under the background of new curriculum reform standards. The core of interdiscipline thematic teaching is to blend multidisciplinary content and perspectives on the premise of upholding discipline centeredness, optimize teaching design and classroom content, and highlight the educational goals through multiple mechanistic routes, clarify the interdisciplinary nature, pay attention to situational teaching, promote integrated education and seek ecological restoration.

Keywords: Interdisciplinary teaching; Mechanism analysis; Integration of disciplines

1. An Analysis of the Current Interdisciplinary Situation and Dilemma

Interdisciplinary thematic learning is a new concept proposed by the amendment of the new curriculum, which plays an important role in breaking the disciplinary barriers and realizing the comprehensiveness and practicality of the curriculum. The Curriculum Standards of Chinese Language for Compulsory Education (2022 Edition) points out that: As one of the extended learning task groups, interdisciplinary learning aims to guide students to connect inside and outside the classroom, and inside and outside the school, broaden the field of Chinese learning and application, and improve the language application ability in the practice activities of Chinese^[1]. However, there are still many teachers who do not clearly define interdisciplinary connotation and do not apply it to Chinese.

It is the key to solve the problem to define the concept of "interdiscipline" and clarify its characteristics. Teaching often become a mere formality, the reason is to treat interdiscipline with "discipline" thinking as before, which do not fundamentally solve the problems^[2]. A single discipline can no longer solve the growing economic, social and other problems, interdiscipline emerged as a way of thinking to deal with the problems. Students who truly adopt interdisciplinary thinking are few and far between, and teachers need to break their own and students' thinking boundaries and learn to integrate and synthesize new ways of thinking.

2. Reel Silk from Cocoons : Clarifying the Historical Context of Interdiscipline

2.1 Finding by hard and thorough search to explore the Sprouts of Abroad

The initial interdisciplinary form originated from the university military alliance after World War II. "Interdiscipline" appeared in the "Textbook Liaison theory" and "Apperceptive mass" theory of Herbart in the United States in the 1920s. In the western literature of the 1920s and 1930s, the specialized term "interdiscipline" was first coined by R.S. Woodworth, a psychologist at Columbia University in the United States, in 1926. He believed that interdiscipline was a research field involving two or more disciplines beyond the boundary of a known discipline^[3]. On the basis of following the internal logic of each discipline, the knowledge system should be rebuilt to establish meaningful and valuable links between disciplines^[4].

2.2 Exploring the Roots of Culture: Interdiscipline flourishes in China's Fertile Soil

The interdiscipline in China was first combined with the study of history, so the author sorted out the literature survey on the interdisciplinary research in China (as shown in Figure 1). In 1988, Dehong Niu put forward the Experiment of Interdisciplinary Reform of Liberal Arts in Middle School that proposes to "create horizontal liberal arts in high school" to discuss the new concept of "The Coexistence of Three Kingdoms" from three aspects: history, geography, and politics, which emphasizes the big concept of no

separation of politics, geography and history.

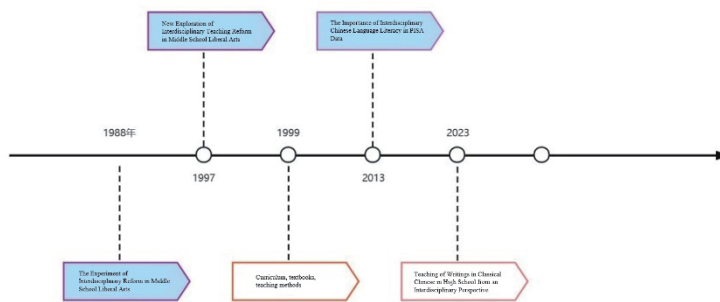


Figure 1: Breakthroughs in interdisciplinary domestic literature investigation

“The Importance of Interdisciplinary Chinese Literacy Based on PISA Data” pointed out that reading is the cornerstone to support other disciplines. The data showed the correlation coefficient between reading and mathematical science, and testified that the barriers between literature and science and engineering could be broken through the data.

3. Decoding the Characteristics of “Cross” and Sorting out Interdisciplinary Paths

Based on the differences in generation method, content and composition methods, we explore the essence of interdiscipline to conclude that interdiscipline has the characteristics of heterogeneity, fragmentation and collaboration. Firstly, heterogeneity means that the formation environment and generation method of any knowledge are different. Precisely because of the existence of knowledge heterogeneity that different knowledge collides with each other, resulting in different disciplinary feelings and interdisciplinary value. Secondly, interdiscipline has the characteristic of fragmentation. Fragmentation refers to splitting complete knowledge and the essence of holistic things into many small details and fragments. Fragmentation effectively connects unrelated fragments to make them present a new and more meaningful hierarchical structure. Thirdly, interdiscipline has the synergy nature, that is, the characteristic of interdisciplinary comprehensiveness. By breaking down interdisciplinary boundaries to integrate different disciplines, interdiscipline makes up for the knowledge gap caused by the division of disciplines, and focuses on improving overall learning abilities, which is the synergy nature of interdiscipline. In order to further weaken interdisciplinary barriers, teachers need to further improve their own abilities, uphold the theoretical depth, thickness and accuracy of the discipline, through iteration and research between different disciplines.

3.1 Decoding Framework: Exploring the Methodology of Interdisciplinary Formation

Teachers should carry out secondary processing of teaching process through general cognition, form different understanding, views or concepts from others, and realize knowledge sublimation between disciplines. It is crucial to achieve high-quality integration between different disciplines, form a “1+1>2” perspective fusion, clarify the overall depth of disciplines and the flow of teaching experience, and form the flow between knowledge.

Disciplines are organizational life entities that need to engage in metabolism within its own order space, absorb nutrients from each other in the reticular structure lineage in which different disciplines contact and interact with each other to achieve the cycle of disciplinary life. Firstly, the relevant disciplinary knowledge should be “crumbled to pieces” and “reshuffled”. Firstly, the relevant disciplinary knowledge should be “crumbled to pieces” and “reshuffled” to separate relevant knowledge systems, which should be conducted with “dispersion first, then integration”. Knowledge separation should be based on specific goals, namely the core problem to be solved. Secondly, reorganizing the knowledge within relevant disciplines is to consider whether the knowledge can establish internal connections to solve practical problems. It should be noted that in the grinding-in process of relevant knowledge systems and knowledge, it is inevitable that new “knowledge fragmentation” will occur to reintegrate fragmented knowledge. Thirdly, teachers should focus on the core issues, according to the actual needs, to establish internal links for knowledge or carry out some degree of transformation and reorganization, to organically merge and synthesize the dispersed knowledge, so as to build interdisciplinary knowledge system. As shown in Figure 2.

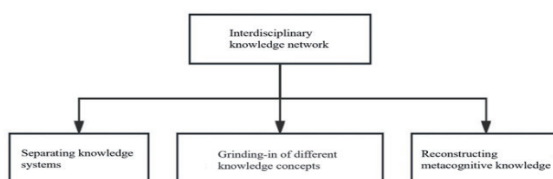


Figure 2: Framework diagram of interdisciplinary mechanism formation

3.2 Reorganization:Sorting out the Path of Interdisciplinary Formation

Education points to the essential development of human life and interdisciplinary is with the boundary of space and time. At different stages of students' mental development, it is necessary to adopt different courses and learning methods. How to conduct interdisciplinary integration is a problem worth thinking about. The production is based on disciplines and coordinating disciplines also needs to go beyond the knowledge system between disciplines. Interdiscipline is to break the barriers of single discipline in the past, realize the circulation between different disciplines, and open the complex ecosystem. As shown in Figure 3.

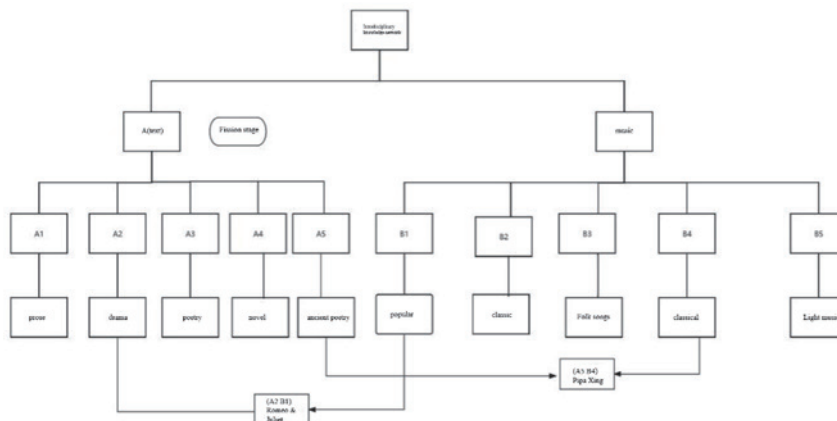


Figure 3:Combination diagram of fission process

In the concept of chemical molecules, molecules undergo fission, and form chains to form new disciplinary organizations. The Connotation, Mechanism and Evolution Path of interdiscipline puts forward three stages of the formation path of interdiscipline, which are fission, chain formation, and the formation of interdisciplinary knowledge network, which are borrowed and relocated to interdisciplinary fields. Firstly, the first stage of interdiscipline is the fission stage, which generally refers to the split and change of a certain thing. The interdisciplinary field should take the problem as the core and fission itself into the nodes of new and old knowledge. For example, the combination of Chinese language and music forms a new chain that refers to the lines connecting different knowledge nodes. Secondly, a complete interdisciplinary knowledge chain can be formed only when the knowledge nodes fissioned by various disciplines are interactively integrated. For example, a knowledge node fissioned by A interacts and integrates with a knowledge node fissioned by B to form a new interdisciplinary knowledge chain. Thirdly, it is the stage of interdisciplinary knowledge network. With the continuous addition of different knowledge nodes and knowledge chains, the interdisciplinary knowledge network will become closer and broader, and in this process, new disciplinary growth points will be constantly nurtured to promote interdisciplinary development.

3.3 Mutual integration and coexistence, together going to the ultimate goal of education

The integration of disciplines refers to the re-integration of existing resources, the realization of circulation and transfer of value, and the sharing of results. Firstly, it is necessary to establish the knowledge reserve of disciplinary groups with a problem-oriented approach, form an information linkage mechanism through teaching reflection and teaching research cooperation of the teacher community, and finally integrate into a new knowledge system, which is also an important manifestation of interdisciplinary innovation characteristics. As a new type of knowledge production mode, the ultimate goal of interdiscipline is to solve complex problems in society through continuous innovation. The ultimate goal of education is to train students to become adults, and the fundamental task of education is to make people wise, make people moral with intelligence, and finally make people to be kind.

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