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NEWSLETTER

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## **Promoting Student Interdisciplinary Learning: Mechanisms, the Learning Environment Design Model, and Empirical Research**

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**I**NTERDISCIPLINARY learning has become a highly recommended learning approach in Chinese compulsory education. Nevertheless, there exist a variety of problems with the current implementation of interdisciplinary learning, such as misconception of the approach and a lack of purposeful design. This study analyzed the mechanisms for promoting student interdisciplinary learning, constructed a model for interdisciplinary learning environment design, and conducted practical research based on the model.

### Mechanisms for Promoting Student Interdisciplinary Learning

- (i) In interdisciplinary learning, students must go through structured activities to develop higher-order thinking skills and realize deep learning.
- (ii) The primary purpose of interdisciplinary learning is to conflate knowledge from distinct disciplines and then for students to generate new knowledge after the processes of assimilation, internalization, and reconstruction.
- (iii) Image thinking and imaginative thinking entailed in interdisciplinary learning are beneficial for students integrating and establish associations between knowledge of multiple disciplines.

### Research Findings Based on the Model for Interdisciplinary Learning Environment Design

- The model could effectively reduce students' extraneous and intrinsic cognitive loads, increase their germane cognitive load, enhance their flow experience, and boost their higher-order thinking skills.
- In interdisciplinary learning, flow experience had positive effects on students' higher-order thinking skills development; the extraneous cognitive load negatively affected student flow experience; the germane cognitive load had a positively impact on student flow experience.
- In interdisciplinary learning, mutual impacts existed between student cognitive loads, flow experience, and higher-order thinking skills.

Source: *China Educational Technology*, 2023; 2023(8):59-63.