Research on Project-Based Teaching Strategies for the Chinese Curriculum of International Baccalaureate (IB) based on the SAMR Model

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Abstract: In the digital era, there have been significant changes in international students' Chinese language learning patterns and methods. The integration of information technology and project-based teaching not only promotes the demand for applications and learning media but also provides new opportunities to enhance student's critical thinking abilities. However, project-based teaching of information technology and Chinese is prone to the misconception of seeking the most suitable application or learning medium for verification. The SAMR (Substitution, Augmentation, Modification and Redefinition) model is an educational model based on Bloom's taxonomy of educational objectives for "creative" teaching. This information technology-integrated teaching method provides students with diverse learning experiences. The Chinese language course of the International Baccalaureate (IB) aims to cultivate students' profound understanding of literature, language, and culture by providing a critical exploration learning experience in the field of language and literature. It encourages students to explore similarities and differences between different cultures, delve into topics or works of interest, and conduct independent language and literature research projects. The project-based learning approach helps students meet their further academic research and personal growth skills needs, cultivating them as language users and lifelong learners who are willing to explore and have critical thinking skills. The application exploration of the SAMR model in project-based teaching proposes relevant suggestions for the integration of information technology and Chinese teaching in the digital era and provides some new focus points for effective strategies and paths of IB Chinese teaching: encouraging teachers to improve students' skills in collaboration, communication, creativity, and critical thinking (4C) through advanced teaching at four different levels of SAMR model, flexible use of teaching rounds, creation of GRASPS teaching evaluation scenarios, and design of conceptual driving tasks, in order to achieve the improvement of language and literature construction and application abilities, and further promote the collaboration and autonomy of IB Chinese project-based learning process.

Keywords: IB Chinese course; Project-based teaching; SAMR model

1. Introduction

The International Baccalaureate (IB) program is a comprehensive curriculum system that provides high-quality

international education to students worldwide. IB includes Primary Years Programme (PYP), Middle Years Programme (MYP), DP (Diploma Program) and CP (Career-related Program) at different stages of education covering the entire school age from kindergarten to high school, providing students with diverse and in-depth learning experiences. The course emphasizes the comprehensiveness of disciplines, independent thinking, community service and the importance of language, aiming to cultivate students into lifelong learners with an international perspective, cross-cultural awareness and global background knowledge [1]. As of November 2022, 5611 schools worldwide have passed IBO certification. Since its establishment in 1968, the number of IB programs has steadily increased worldwide. According to the IB World School 2022 Yearbook (data as of November 2021), the total number of IB course programs offered worldwide has reached 7382 [2].

In May 2023, a total of 134,010 candidates participated in the IB University Preparatory Diploma Examination, of which only 3.6% chose Chinese language and literature as the examination subjects, with a total of 4,891 students. The proportion of candidates who choose Chinese language acquisition as the exam subject is 4.7% of the total number of candidates, with a total of 4,725. Developing a curriculum development strategy for technology integration involves enriching the content of Chinese courses and aiming to enhance the attractiveness of Chinese subjects. This can attract more international students to choose Chinese as one of the subjects of IB, construct a more influential Chinese international education dissemination model and create more employment opportunities for students. The implementation of this strategy will provide IB students with more diverse and practical Chinese subject experiences, gradually increasing the proportion of Chinese exams, injecting new vitality into the Chinese international education industry, and promoting sustainable development.

Breakthrough artificial intelligence dialogue systems such as ChatGPT have revolutionized the education field with their excellent conversational language interaction capabilities and extensive knowledge base. This technology not only provides powerful assistance in the teaching process but also offers new possibilities for innovative evaluation methods.

However, this change also comes with challenges. Educators need to deeply understand and adapt to these new technologies to unleash their potential fully. In addition, educational institutions need to develop corresponding policies and regulations to ensure that the use of these technologies in education is safe, responsible and beneficial. In the digital era, Chinese language learning is undergoing unprecedented transformation, providing broad development space for more creative and personalized education. However, educators and decision-makers must work together to solve new educational challenges.

2. The application of SAMR model in IB Chinese curriculum

The SAMR model is a fourth-order model created by educational researcher Dr. Ruben Puentedura, and is used to classify and evaluate ways of integrating educational technology. The four stages of the SAMR model are Substitution, Augmentation, Modification and Redefinition [3]. This model aims to help educators better understand how they integrate technology, encourage them to strive towards higher levels of integration and ensure that technology integration can substantially change the learning experience, rather than just replacing traditional tools with technology.

2.1. The advantages of the SAMR model

(1) Enhanced learning experience: The SAMR model provides a clear framework to help educators understand how they integrate technology. By identifying the characteristics of different stages, educators can better evaluate their teaching practices and motivate themselves to strive toward higher levels of integration. This helps ensure that integrated technologies are not just substitutes for

traditional tools but can substantially change the learning experience.

(2) Adapting to different needs and differentiated teaching: The SAMR model encourages educators to use technology differently according to the different needs of students. The integration approach at different stages allows educators to adapt to students' learning styles and levels through modification and redefinition on the basis of substitution and enhancement, thereby better achieving differentiated teaching [4].

(3) Encourage students to use technology actively: The SAMR model emphasizes students' active participation in learning and encourages them to make autonomous decisions. By integrating technology, students can participate more actively in the learning process, cultivate their initiative and cooperation, and thus promote a more effective learning experience.

2.2. Effective implementation of teaching and evaluation objectives

Through thoughtful preparation and targeted guidance, teachers can combine information technology to assist teaching, making course content more vivid and interesting while achieving teaching and evaluation objectives better. Under the framework of the SAMR model, teachers can ensure the comprehensive development of students in Chinese language courses and better utilize information technology to support the learning process by replacing, enhancing, modifying, and redefining different teaching activities.

2.3. Explicit teaching in learning methods

Approaches to Learning (ATL) is an important concept in IB, covering aspects such as information literacy and media literacy [5]. The application of the SAMR model enables teachers to explicitly teach and cultivate students' abilities in information technology in Chinese courses. By purposefully introducing and using various information technology tools in the classroom, teachers can cultivate students' abilities in information search, screening and evaluation, enabling them to better adapt to the development and changes of future society.

In the context of the IB course, students' comprehensive development not only includes language skills but also requires the cultivation of modern skills such as information and media literacy. The SAMR model provides a powerful framework for teachers to better integrate information technology and promote students' comprehensive development in the Chinese language and ATL.

3. Exploration of deep integration of the SAMR model and project-based teaching in IB Chinese curriculum

3.1. The integration of knowledge and practice

Integrate information technology with IB Chinese project-based teaching, guided by core competencies and form a fully autonomous and cooperative teaching process through four stages of substitution, enhancement, modification and reshaping of the SAMR model. The teaching process includes a combination of learning methods, project-based learning processes and SAMR models.[6] Students participate in real and meaningful projects through information technology, thereby cultivating comprehensive abilities while learning the language.

3.2. The teaching process is authentic and meaningful

Emphasis is placed on creating authentic and meaningful teaching processes in project-based teaching, with a focus on situational construction in authenticity assessment. Using GRASPS (Goals, Roles, Audience, Situation, Product/Performance, Standards) as a common performance evaluation method, student project tasks

are designed using this model to enable students to use language in specific contexts and demonstrate their understanding and application of core competencies [7].

3.3. Teachers provide supportive interaction

The Pedagogy Wheel is a graphical tool designed to help educators effectively integrate and select different teaching strategies, technical tools, and teaching methods. This wheel chart presents various teaching elements, covering multiple aspects from the cognitive level to the creative level. The Pedagogy Wheel is divided into 7 layers, each representing a specific learning area or teaching principle, extending from core competencies to the SAMR model [8]. In each section, educators can find relevant teaching strategies, techniques and methods to support students in learning across different disciplines and abilities. The purpose of this tool is to encourage educators to think about how to integrate technology and teaching methods better to improve student engagement and understanding. The Pedagogy Wheel not only emphasizes the application of technology but also emphasizes the selection of teaching methods to meet the learning needs of students [9].

Teachers provide supportive interaction during the teaching process, guide students in their learning, and ensure they can effectively apply information technology in projects. There is a close relationship between the action verbs in the Pedagogy Wheel and the directive terminology of the International Baccalaureate Organization (IBO) [10]. The action verbs of the teaching round describe the activities of students at different cognitive levels, which are consistent with the instructional terminology of IB [11]. In this process, utilizing the flexibility of project-based teaching helps students link learning requirements with applied technologies. Specifying the action verbs required for the goal will guide students to apply technology in real-life projects, play their role in language learning, and achieve comprehensive development of core competencies and IB Chinese teaching objectives [12].

4. Suggestions for integrating the IB Chinese curriculum with the SAMR model in teaching

4.1. Step out of the misconceptions of verifying the most suitable application or learning medium

Avoid the misconception that specific applications or learning media should be validated; instead, focus on finding the most beneficial integration methods for student learning. The key is to understand and grasp the advantages of different technical tools and integrate them into the teaching process to enhance effectiveness [13]. Educators should flexibly use various tools to meet the learning needs of different students.

4.2. Emphasize the real-time feedback of formative assessment in the integration process

In the integration process, focus on real-time feedback from formative assessment to ensure that educators can timely understand students' learning progress. Avoid overly focusing on the process of using technology, but ensure that technology integration is meaningful. Such real-time feedback helps educators adjust their teaching strategies, better meet the needs of students and ensure that integrated technologies can truly promote student learning [14].

4.3. Using technology to inspire students to participate in Chinese activities

Educators should flexibly utilize various resources, including online tools, applications, etc., to enhance students' interest and motivation in learning. By promoting proactive cooperation, students can better demonstrate their understanding of the Chinese language subject with technical support and cultivate their

teamwork and creative thinking abilities [15].

5. Conclusion

In summary, with the reform and development of information technology education, the ways for international students to learn Chinese are constantly evolving towards informatization, digitization and depending on the platform. Therefore, the SAMR model has become an important way to promote the expansion and implementation of Chinese courses. Especially in teaching Chinese courses for International Baccalaureate (IB), project-based teaching methods can be further combined to improve the efficiency and quality of student learning through project activities and division of labor cooperation, achieving the goal and effect of integrating IB Chinese courses with the SAMR model for teaching.

Disclosure statement

The author declares no conflict of interest.

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