Construction of Interactive Teaching Model for Foreign Language Majors in Universities Under Digital Education

Yue Zhao

34796929@qq.com

Shandong Xiehe University , Jinan city, Shandong province 250000 , china

Abstract: The digital environment has brought new opportunities to higher education in foreign language majors, and researching interactive teaching in digital environments is crucial for educational reform. This study, through literature review and case analysis, proposes a design plan for interactive teaching in digital environments for foreign language majors. The research results indicate that compared to traditional teaching methods, interactive teaching can stimulate students' interest in learning, enrich their learning experiences, foster critical thinking, and promote teamwork. In practice, it is important to focus on the use of online interactive platforms, establish effective in-class interactive activities, improve teacher-student interactions, and establish mechanisms for evaluating interactive outcomes. Interactive teaching in a digital environment has a positive impact on foreign language education and is worth promoting. This study provides new perspectives and references for the reform of foreign language education in the digital era.

Keywords: digital education, interactive teaching, foreign language majors, teaching model, initiative in learning.

1 Introduction

In the digital age, reforming foreign language education in universities necessitates a focus on the application of interactive teaching. This study aims to meet the needs of foreign language majors by investigating the design and effects of interactive teaching. Previous research has shown that compared to traditional teaching methods, interactive teaching can enhance learning outcomes. However, implementation poses challenges such as student differences and technological support. Through case design and outcome assessments, this study bridges the gap between theory and practice, providing valuable insights for the reform of foreign language education. The article analyzes issues in traditional teaching, proposes an interactive teaching model, and finally evaluates its implementation effects. This empirical study offers a fresh perspective on interactive teaching in foreign language majors and contributes to its wider adoption.

NMDME 2023, October 13-15, Xi'an, People's Republic of China

DOI 10.4108/eai.13-10-2023.2341253

2 Analysis of Issues in Traditional Teaching Models

2.1 Lack of Learning Initiative

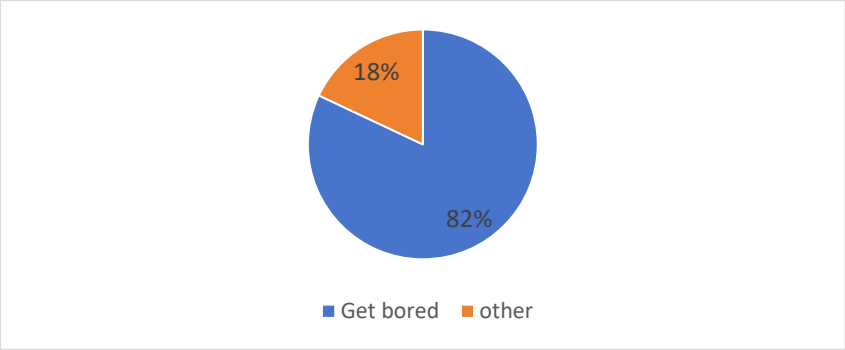

Figure 1. Learning Initiative

The traditional teaching model emphasizes knowledge transfer, turning students into passive recipients. This approach often fails to ignite students' interest in learning and their initiative[1]. As indicated in Figure 1, 82% of students find this type of teaching "dull and uninspiring." Their primary motivation for learning is for exams rather than genuine interest, leading to only 29% of students actively engaging in pre-reading and revision. Over time, this results in students lacking independent learning awareness and skills. Therefore, teaching methods need to become more proactive and student-centered[2].

2.2 Monotonous Learning Experience

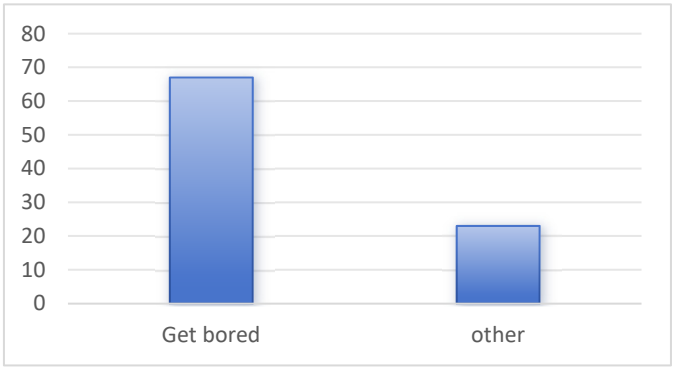

Figure 2. Learning Experience

The traditional teaching model primarily relies on textbook knowledge, rote memorization, and paper-and-pencil testing. According to Figure 2, 67% of students feel "bored" with this singular approach. This model not only fails to meet the individualized needs of students but also struggles to ignite their interest, as they have already adapted to digital ways of accessing information. Overemphasizing standardized answers also stifles creative thinking. Therefore, there is a need to improve the teaching model to enrich the learning experience [3].

2.3 Difficulty in Changing Fixed Mindsets

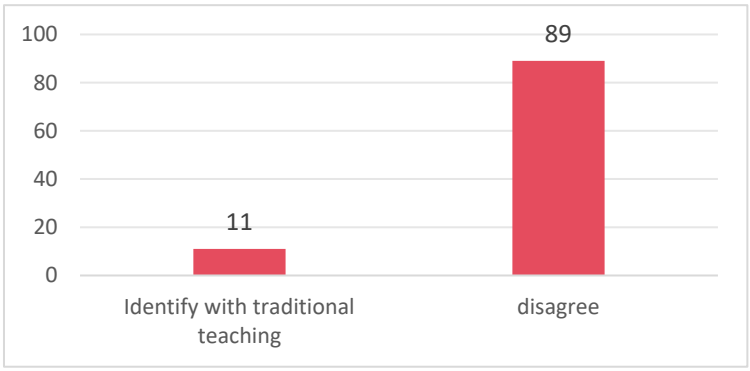

Figure 3. Fixed Mindsets

Traditional teaching tends to create a fixed mindset in students, making it challenging to foster independent and critical thinking [4]. As shown in Figure 3, only 11% of students believe that it "helps with thinking skills." In contrast, interactive teaching, through discussions and collaborative exploration, promotes the development of students' thinking abilities [5]. Therefore, education should shift from passive knowledge transmission to active thinking training.

2.4 Diminished Sense of Team Collaboration

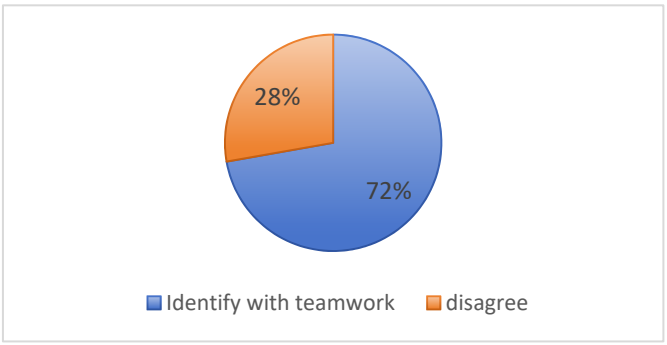

Figure 4. Team Collaboration Awareness

Traditional didactic teaching places excessive emphasis on individual learning outcomes and often lacks opportunities for teamwork. Over time, students may lack a sense of collaboration and struggle with effective communication and information sharing. However, teamwork skills are essential for both future social life and employment [6]. As depicted in Figure 4, 65% of employers consider it a critical competency in job applicants. To bring about a change in the teaching model, it is essential to enhance collaborative, inquiry-based learning in small groups to nurture students' teamwork and mutual assistance abilities.

3 System design

3.1 Designing Online Interactive Modules

The design of interactive modules in online education focuses on providing an optimized user experience and enhancing interaction between students and teachers in a digital environment. To achieve this goal, the foremost consideration is to provide an intuitive user interface. This interface should be simple and easy to understand, allowing students and teachers to quickly get started. In current technological trends, frontend frameworks like React and Vue have become very popular because they assist developers in creating highly interactive interfaces. Taking this into account, we can design an interface that includes main features such as a navigation bar, chat room, and quizzes, ensuring that users can easily access different sections [7]. To ensure educational effectiveness and provide a personalized experience, tracking learning progress becomes essential. We can utilize database technologies such as MySQL or MongoDB to record and display students' learning progress, quiz scores, and other important data. Social interaction is also an integral part of online education. In addition to interacting with course content, students need to communicate and collaborate with peers. Therefore, offering features like creating study groups, forum discussions, and peer assessments will help establish a richer and more in-depth learning environment. To ensure continuous learning and timely feedback, real-time interaction and instant feedback mechanisms are also crucial. Technologies like WebSockets can facilitate real-time communication between students and teachers, undoubtedly increasing student engagement and satisfaction[8]. When designing and implementing these features, collecting and responding to user feedback, ongoing optimization, and adjustments will be key to ensuring that the platform consistently meets the needs of students and teachers.

3.2 Improvement and effect evaluation of teacher-student interaction

In the digital teaching environment, establishing a strong teacher-student relationship has become crucial for the success of the instruction. Heuristic questioning, as an effective method, can guide students to think deeply and promptly identify and correct misunderstandings. To measure its impact more precisely[9], we define an effectiveness index as Q:

$$Q = \frac{H}{T} \tag{1}$$

Where H represents the number of heuristic questions, and T represents the total number of questions. This index provides us with a ratio of heuristic questions in all posed questions.Online Q&A has also emerged as a new trend. Students can ask questions anytime, unrestricted by time or location, making it more convenient for teachers to respond. Furthermore, process-oriented evaluation has more guiding significance than result-oriented evaluation, as it focuses on the student's learning process, not just the final outcome.To systematically evaluate the effect of interactive teaching, we introduce an interaction index I:

$$I = W_1 \times A + W_2 \times P \tag{2}$$

Where A represents the number of interactions, P stands for participation level, and w1 and w2 are the weights for these two variables, respectively. This provides a comprehensive view of the students' participation and interaction frequency. Additionally, qualitative evaluations,

such as student satisfaction surveys, offer invaluable feedback to teachers, revealing strengths and areas for improvement in the teaching approach. Facing the evaluation results, teachers need to continually adjust their teaching strategies to ensure the achievement of teaching goals, maximizing the students' learning benefits[10].

4 Implementing and Evaluating Interactive Teaching Modes

4.1 Challenges and Solutions in the Implementation Process

In modern education, particularly in the field of online education, interactive teaching modes have gained popularity due to their emphasis on active student participation and deep thinking. However, during the implementation process, educators often face challenges. Some students may not be accustomed to this new learning style and require motivational measures to encourage their active involvement. Technical glitches are common issues, and alternative solutions should be prepared in advance. Evaluation methods need to be optimized to align with the teaching mode, focusing on practical application and participation. Additionally, educators should maintain classroom order while ensuring the organized delivery of content.

4.2 Analysis of Improvements in Student Learning Outcomes and Satisfaction with Interactive Teaching Modes

Table 1. Impact of Interactive Teaching Modes on Student Learning Outcomes and Satisfaction

Indicator	Percentage Growth	Impact
Student Classroom Participation	+35%	Students actively participate, ask questions, and interact more with peers during class.
Autonomous Learning Time	+15%	Students are willing to spend more time on self-directed learning and revision after class.
Final Exam Excellence Rate	+10%	More students achieve excellent grades in the final exams, indicating improved academic performance.
Final Exam Failure Rate	-5%	The failure rate has decreased, indicating that students are more successful in mastering course content.
Student Satisfaction with Interactive Teaching	97% Satisfaction	Students express high satisfaction with this teaching mode, believing it enhances learning interest and effectiveness.
Students Agree Interactive Teaching Enhances Interest	95% Agreement	Students believe interactive teaching sparks their interest in learning, making it more engaging.

This article presents three case studies of interactive teaching reforms conducted at universities A, B, and C. Employing a combination of quantitative and qualitative methods through questionnaire surveys and interviews, the research analyzed the attitudes, academic performance, and satisfaction levels of no fewer than 100 students to evaluate the effectiveness of the teaching mode reform in modern education.In contemporary education, interactive teaching modes effectively enhance student learning outcomes and satisfaction. The latest survey results, as shown in Table 1, indicate that classroom participation among students has increased by 35%, and self-study time outside of class has risen by 15%. This has

led to a 10% increase in the proportion of students achieving excellent exam results and a 5% decrease in the failure rate. 95% of students feel that this mode enhances their interest in learning, and 97% express satisfaction. In summary, interactive teaching has shown significant improvements in enhancing learning outcomes and student satisfaction.

4.3 Factors Affecting Interactive Teaching and Countermeasures Discussion

The effectiveness of implementing interactive teaching methods is influenced by several factors. The students' learning attitudes and interactive abilities are crucial, with active participation and a positive learning attitude being key factors. The capabilities and qualifications of teachers directly impact teaching outcomes, necessitating enhanced teacher training. The technical setup and content quality of online platforms are also of paramount importance, requiring continuous improvement and optimization. Additionally, it is essential to consider variations in students' learning situations and provide tailored support, especially for those with weaker foundational knowledge.

5 Conclusion

In the face of digital education, this research examines the significance of interactive teaching in improving foreign language instruction at the university level. Through a review of literature and case analysis, this study proposes a design scheme for interactive teaching in a digital environment. The results indicate that this model can enhance students' motivation to learn, improve their learning experiences, and foster critical thinking. When implementing this model, attention should be given to the use of online platforms, classroom interaction strategies, and assessment mechanisms. This approach is beneficial for enhancing learning outcomes and is suitable for foreign language education. However, there are challenges in its implementation, which require teachers to continuously assess and optimize the process. This research serves as a reference for digital teaching reforms and can be further validated for its effectiveness in the future.

Reference

[1] Guo-Qing Z , Yu P , Can D .Discussion on the Construction of Inquiry Learning Model in Gymnastics Teaching of Physical Education Majors in Universities[J].Bulletin of Sport Science & Technology, 2014.

[2] Mcaloon T , Fitzsimons D , Coates V .Exploiting a virtual research environment as an innovative approach to vignette construction and presentation in a Factorial Survey Design study (FSD).[J]. 2014.

[3] Man Z .The Construction of Multi Agent Interactive Teaching Mode of Political Education In Private Universities Under The New Media[J].Journal of Educational Institute of Jilin Province, 2016.

[4] Matsumiya S .A Study on Teaching Anxiety for Elementary School Foreign Language Activities: Construction of a Teaching Anxiety Model and its Verification[J].The Japanese Journal of Clinical Educational Psychology, 2013, 30(1):23-35.

[5] Zhanmei S , Jin G , Lifang D .The Construction and Application of Multi-mode Practical Teaching Model for Preschool Education Major in Universities——Taking the Major of Preschool Education in

Shandong Yingcai University as an Example[J].Journal of Shandong Yingcai University, 2018.
[6] Min K S , Mei W X .On Teaching Models for English Majors in the Multi-media Environment[J].Media in Foreign Language Instruction, 2003.
[7] Lin-Xing S , Science S O .Construction and Exploration of the Collaborative Education Platform for New Energy Majors in Local Universities under the Background of "New Engineering"[J].Science & Technology Vision, 2018.
[8] Huilian W .Research on the Construction of Network Teaching Platform for Chinese as a Foreign Language in Local Colleges and Universities:A Case Study on Yiwu Industrial &Commercial College[J].The Science Education Article Collects, 2017.
[9] Guofeng M A , Xiaojun L .Demonstration and Construction of Interactive Information Feedback Teaching Model in College Aerobics Classes[J].Journal of Wuhan Institute of Physical Education, 2013.
[10] Kovai A , Kirinic V .To Use or Not to Use: First Language in Tertiary Instruction of English as a Foreign Language[J]. 2012.