Research on the Innovation of Chinese-German Consecutive Interpretation Teaching Model Based on Smart Courses

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Abstract: Aiming at the problems of fragmented knowledge and explicit ideological and political elements in traditional Chinese-German translation teaching, this paper constructs an innovative consecutive interpretation teaching model integrated with smart courses. Based on constructivist learning theory and the PACTE model, taking the "Reform and Opening-up" unit as a teaching case, it adopts teaching methods such as policy deconstruction, cultural comparison and practical simulation. This model has effectively improved students' comprehensive translation and cross-cultural communication capabilities, and realized the organic unity of knowledge transmission and value guidance.

Keywords: Knowledge Graph; MOOC; Chinese-German Consecutive Interpretation; Teaching Model

1. Introduction

As China is increasingly moving towards the center of the world stage, clearly and accurately explaining China's path and solutions to the international community has become a national strategic demand. As an important European language, German is a key medium for spreading China's voice to German-speaking countries. However, traditional Chinese-German consecutive interpretation teaching focuses more on linear conversion training at the linguistic level, with two prominent problems. Firstly, the teaching content is often fragmented, lacking systematic deconstruction and connection of China's characteristic political and economic discourses. Secondly, ideological and political education elements are often integrated in an explicit and indoctrinative way, which is awkwardly combined with the training of professional skills, making it difficult to achieve the imperceptible educational effect.

To address the above dilemmas, this study explores an innovative teaching path empowered by technology. It builds a multimodal learning environment relying on the MOOC platform and introduces Knowledge Graph technology to integrate teaching resources in a structured and visualized manner. With "Reform and Opening-up" as the core theme, it constructs a three-dimensional teaching system integrating linguistic knowledge, cultural background, translation strategies and ideological and political elements. This study aims to verify the effectiveness of this model in improving students' Chinese-German consecutive interpretation ability, especially cross-cultural communication efficiency, and provide theoretical reference and practical cases for the teaching reform of similar courses.

2. Theoretical Basis

2.1 Creation of Translation Teaching Scenarios under Constructivist Learning Theory

Constructivist learning theory emphasizes the role of scenarios and collaboration in knowledge construction. "Constructivist learning methods can effectively develop creative thinking skills, and these methods play a more positive role in online collaborative learning environments".

In this teaching model, learning resources provided by the smart course platform are used. The "German Speech Course" smart course provides learners with rich multimodal scenarios (policy texts, leaders' speech videos, German media reports, etc.) beyond the time and space limits of the classroom. Through nodes and edges, the Knowledge Graph systematically organizes these scenario elements, guiding learners to actively explore and construct the expression paradigms and communication rules of China's characteristic discourses such as "reform stability narrative" in German.

2.2 Comprehensive Application of the PACTE Translation Competence Model

The PACTE (Process in the Acquisition of Translation Competence and Evaluation) Group defines translation competence as "the underlying system of knowledge and skills necessary for a translator to perform translations". It is a comprehensive competence consisting of bilingual competence, extra-linguistic competence, instrumental competence, knowledge competence, strategic competence, and psycho-physiological components. It provides an operable and empirically testable translation competence framework for translation research, shifting the research focus from "translation comparison" to "translation process" and "translator cognition".

Guided by this model, the teaching design covers multiple dimensions: training strategic and bilingual competence through "metaphor translation workshops"; cultivating instrumental and extra-

linguistic competence through "Sino-German reform data comparison" projects; strengthening psycho-physiological elements through "VR scenario simulation". In this process, the Knowledge Graph serves as the "central nervous system" for integrating and manifesting these competences, making abstract translation competences visualized, trackable and cultivable.

2.3 Research on Chinese-German Translation from the Perspective of Cross-Cultural Communication

There are significant differences between Chinese and German political texts in logical structure, argumentation methods and cultural images. Ignoring these differences is likely to lead to strong "translationese", obstacles to audience understanding and even misunderstandings. Therefore, improving cross-cultural communication efficiency cannot stop at linguistic correctness, but must go deep into the level of cultural adaptation.

This study constructs a "German perspective" case library to guide students to actively compare and analyze the differences in reports on the same event by Chinese and German media. Thus, in translation practice, they consciously switch to the audience's perspective and seek the best way to express "Chinese narrative" and "international expression".

3. Case Study: Teaching Practice of Chinese-German Consecutive Interpretation in the "Reform and Opening-up" Unit

3.1 Analysis of Research Objects

The research objects are postgraduates in the second semester of the German interpretation major. They have mastered basic translation theories and skills, but face three major challenges when dealing with interpretation tasks on the theme of "China's Reform and Opening-up". At the knowledge level, they have an insufficient understanding of core concepts such as "Frühe Phase des Sozialismus" and a single grasp of the translation of culture-loaded words (e.g., "crossing the river by feeling the stones"). At the ability level, they find it difficult to effectively reconstruct the logical structure of political texts (e.g., the nine experiences in the "Summary of Forty Years of Reform and Opening-up") and have obvious deficiencies in cross-cultural comparative analysis ability (e.g., differences in Sino-German reform paths). At the literacy level, their understanding of the international significance of reform and opening-up is vague, and they lack the awareness of using evaluations from German experts in textbooks (e.g., "Reform changes the world") to enhance communication effects.

3.2 Teaching Design

3.2.1 Teaching Objectives

According to students' learning situation, a "trinity" teaching model is constructed, organically integrating policy discourse deconstruction, cross-cultural comparative analysis and practical scenario simulation. In the teaching framework design, clear knowledge objectives are set: mastering the official translations of terms such as "development concept"; ability objectives: completing consecutive interpretation of speeches with logical coherence $\geqslant$ 90%; literacy objectives: strengthening international identity narrative and confidence in Chinese solutions.

3.2.2 Teaching Resources

Make full use of resources provided by the "Reform and Opening-up" thematic module of the smart course, including synchronized textbook videos, a case library of German media reports, and a multi-dimensional "Reform and Opening-up Knowledge Graph". This Knowledge Graph includes four types of nodes: policy terms, data cases, international evaluations and speech strategies, dynamically linking textbook content with multimodal resources through connection methods such as inclusion and comparison relationships.

3.2.3 Teaching Process

The teaching implementation is divided into three stages: pre-class, in-class and post-class.

In the pre-class stage, knowledge pre-construction is achieved through MOOC autonomous learning and Knowledge Graph exploration. Students fill in the "Textbook Terminology Pre-learning Form" and submit translations. Based on this, teachers identify common problems, such as literal translation deviations and insufficient cultural image transmission of "a crucial move".

In the in-class stage, policy discourse analysis, cross-cultural interpretation training and ideological and political communication strategy training are carried out: comparing "moving the cheese" with corresponding German expressions in metaphor translation workshops; handling professional terms such as "foreign investment share ratio restrictions" in the simulation of consecutive interpretation of Boao Forum speeches; strengthening the transmission of concepts such as "action enhances knowledge" in the interpretation of Sino-German scholar dialogues.

In the post-class stage, extended application is promoted through hierarchical assignment design and dynamic feedback mechanisms. The basic level requires terminology memory, the improvement level requires sorting out the Sino-German reform timeline, and the innovation level requires writing German speeches integrating Sino-German concepts.

This case follows the design-based research paradigm, collects multi-source data relying on the smart course platform, and systematically evaluates and analyzes the teaching effect. Teaching effect is evaluated through multi-source data collection from the smart course. Process data comes from Knowledge Graph usage records; output data includes interpretation

recording texts; reflective data is obtained through learning reports and interviews. Data analysis shows that there is a significant correlation between Knowledge Graph usage and interpretation performance. Students have achieved significant improvements in terms of terminology accuracy, logical coherence and cultural adaptability, with post-test scores increasing by more than 40 percentage points compared with pre-test scores.

3.3 Specific Analysis of Research Theory and Teaching Design

The case adopts a progressive teaching design to form a logical closed loop, ensuring that all links are closely connected and gradually deepened. Teaching implementation focuses on the parallel development of intensive text reading and knowledge structuring, which is specifically reflected in the following stages:

3.3.1 Policy Discourse Deconstruction Stage

Relying on smart course resources, teachers guide students to conduct paragraph-by-paragraph intensive reading of the "Reform and Opening-up" unit in the "German Speech Course", marking core terms such as "common prosperity" and "supply-side reform". The Knowledge Graph is constructed simultaneously, taking these terms as core nodes and associating them with their standard German translations (e.g., angebotsorientierte Reformen), interpretations, usage examples and relevant policy documents to form a structured knowledge network.

3.3.2 Cross-Cultural Comparative Analysis Stage

Introduce reports and comments on China's relevant policies from German native media (e.g., Welt). Through the association function of the Knowledge Graph, students compare the similarities and differences in keyword selection, narrative framework and emotional tendency between Chinese and German texts. For example, comparing "targeted poverty alleviation" in textbooks with the expression zielgerichtete Armutsbekämpfung commonly used by German media, so as to extract the translation strategy of "functional equivalence" taking precedence over "literal equivalence".

3.3.3 Practical Scenario Simulation Stage

Design high-simulation interpretation tasks, such as "Sino-German Entrepreneur Dialogue at the Boao Forum" and "Introduction to China's Reform Achievements". Use VR technology or multimedia classrooms to create an immersive interpretation environment, requiring students to comprehensively use the knowledge and strategies constructed in the previous two stages to complete consecutive interpretation tasks. Teachers and peers provide targeted feedback through key strategy points recorded in the Knowledge Graph.

3.4 Path Realization of Knowledge Graph Empowering Chinese-German Consecutive Interpretation Teaching

In this case, the Knowledge Graph, as the core structure of intelligent teaching, effectively supports the teaching process integrating language and content.

3.4.1 Multidimensional Node Design

The nodes of the Knowledge Graph cover four dimensions: policy terms, data cases (e.g., World Bank reports), international evaluations and speech rhetorical strategies. They organically connect textbook content with external multimodal resources to construct a generative thematic knowledge system that can be continuously expanded.

3.4.2 Dynamic Evaluation Mechanism

The system automatically captures and records students' learning trajectories, including behavioral data such as node access frequency, the number of self-built association paths and independently uploaded supplementary cases. Such data serves as the core basis for process evaluation, providing teachers with accurate learning diagnosis to support the dynamic optimization of teaching strategies and personalized intervention.

4. Research Findings and Discussion

4.1 The Enhancing Role of Smart Courses in Cross-Cultural Communication Efficiency in Chinese-German Consecutive Interpretation Teaching

4.1.1 Systematic Innovation of Metaphor Translation Strategies

In response to the frequent occurrence of metaphorical phenomena in Chinese political discourses, this study systematically proposes a three-level metaphor conversion strategy with the help of the cross-linguistic comparison function of the Knowledge Graph (see Table 1):

Metaphor retention: Directly retain the original metaphor when cultural images are similar, such as translating "Reform is like sailing against the current" into "Reformen sind wie Boote gegen den Strom".

Metaphor conversion: When there is a dislocation of cultural images, replace them with functionally equivalent expressions in German. For example, instead of literally translating "iron rice bowl" as "eisernes Essgeschirr", convert it to "gesichertes Einkommen" which is common in German culture to mean stable income.

Meaning retention without metaphor: If the metaphor is difficult for German audiences to understand, abandon the image and translate its core meaning, such as translating "hard bones" as "schwierige Probleme (difficult problems)".

4.1.2 Enhancing the Internationalization and Persuasiveness of Data Communication

The achievements of China's reform and opening-up need to be presented with data and discourses recognized by the international community. In teaching, students are guided to directly quote report data from international institutions such as the World

Bank and the IMF, and the original sources of these data are linked through the Knowledge Graph. For example, comparing China's poverty reduction rate with Germany's social welfare expenditure ratio instead of unilaterally listing Chinese data. This kind of "international expression" based on third-party authoritative data greatly enhances the objectivity and persuasiveness of the translated output, and implicitly conveys the world significance of China's development.

Table 1. Comparison Table of Translation Strategies for Chinese-Characteristic Metaphors

Chinese Metaphor	Literal Translation	Functional-Equivalent Translation (Funktional-äquivalente Strategie)	Translation Strategy (Übersetzungsstrategie)
Window of Reform and Opening-up	Fenster der Reform	Tor zur Welt	Metaphor conversion (Bildersatz): Replace the source cultural image with a functionally similar image in the target culture.
Crossing the river by feeling the stones	Steine ertastend den Fluss überqueren	sich vorsichtig vorantasten	Meaning retention without metaphor (Bilderverzicht): Abandon the original image and directly convey the implied action or attitude.
Lucid waters and lush mountains are invaluable assets	Grünes Wasser und grüne Berge sind Gold und Silber.	Umweltschutz bringt Wohlstand.	Meaning retention without metaphor (Bilderverzicht): Abandon the mineral image of "gold and silver" and directly clarify the causal relationship between "environmental protection" and "prosperity".
Iron rice bowl	eisernes Essgeschirr	gesichertes Einkommen/ein sicherer Arbeitsplatz	Metaphor conversion (Bildersatz): Convert the dietary utensil image of "iron rice bowl" into the concept of "stable income" or "secure job" in German.

4.2 Implicit Integration Path of Ideological and Political Education in Chinese-German Interpretation Teaching through Smart Courses

4.2.1 Organic Integration of Ideological and Political Elements in the Teaching Process

Ideological and political education is fully integrated into the entire process of interpretation teaching in a way like "salt dissolving in water". Strengthen positions in policy deconstruction: when analyzing the German translation schemes of concepts such as "a community with a shared future for mankind", by comparing the frequent changes of policies under the context of Germany's coalition government, guide students to deeply understand the stability and continuity of China's reform policies and strengthen institutional confidence.

Cultivate a sense of pride in data achievements: When displaying achievement data such as China's high-speed rail mileage, 5G base station coverage and technological innovation on the MOOC platform, naturally guide students to conduct Chinese-foreign comparative translation exercises, enabling them to naturally generate a sense of identity and pride in national development while completing professional skills training.

4.2.2 Design of Implicit Evaluation System Based on Communication Efficiency

By designing an "International Communication Efficiency Self-Assessment Scale", students are guided to reflect on their translated output from three dimensions: cultural adaptability, logical rigor and emotional resonance. This evaluation mechanism based on professional standards avoids empty preaching, prompting students to think about how to effectively complete the communication mission from the perspective of cross-cultural communicators, and realize self-education and value internalization.

5. Conclusions and Prospects

Taking the "Reform and Opening-up" unit of the "German Speech Course" as the carrier, this case constructs a teaching system of "precise deconstruction of textbook texts—strengthening cross-cultural interpretation—improving the communication power of Chinese stories" through the in-depth integration of MOOCs and Knowledge Graphs. Practice shows that the accuracy rate of students' translations of complex concepts in textbooks has increased from 60% to 88%. Especially when dealing with core textbook expressions such as "a community with a shared future for mankind" and "gradual reform", they can effectively optimize communication strategies by combining cross-cultural perspectives.

This study constructs and practices a "trinity" teaching model for Chinese-German consecutive interpretation relying on smart courses. Practice shows that through technological empowerment, this model has effectively realized the structured reconstruction of translation knowledge, the systematic training of translation competence and the implicit integration of ideological and political elements, significantly improving students' cross-cultural efficiency in communicating China's characteristic discourses.

The main innovation of this study is to develop the Knowledge Graph from a static knowledge base into a dynamic cognitive tool that drives the teaching process, supports learning decisions and empowers evaluation reform. The case confirms that this integrated model can effectively solve the problems

in Chinese-German political interpretation teaching—technological empowerment deepens the depth and networking of terminology learning, comparative training strengthens logical reconstruction ability, and promotes the endogenous construction of cultural confidence.

In the future, we can further develop "virtual policy press conference" training scenarios supporting textbooks, use the Knowledge Graph to link historical events in textbooks (e.g., the Third Plenary Session of the 11th Central Committee of the Communist Party of China) with real-time data, promote the upgrading of teaching towards "intelligence and practicality", and cultivate new-era translation talents with both linguistic ability and Chinese feelings.

It should be pointed out that only when technical means are deeply integrated with teaching content can they achieve practical results. The Knowledge Graph helps build a systematic knowledge network, and the MOOC platform extends the time and space boundaries of learning. However, the core value of teachers is always reflected in precise teaching design and continuous learning guidance.

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