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Research on the Construction Pathways of AI-Empowered New Translation Literacies: A Case Study of Business Translation Teaching for Non-English Majors

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Abstract: **In response to the Chinese Ministry of Education's call for AI-empowered education and in order to deepen the teaching reform of business translation course for non-English majors in Chinese universities, this study explores the construction pathways of AI-empowered new translation literacies based on the Core Competency theory and Constructivist Learning theory. It proposes the pathways of three spiraling ascending stages: preliminary literacy construction, intermediate literacy construction, and advanced literacy construction through reconstructing the teaching contents, teaching methods, and evaluation methods, organically integrating a trinity cultivation model comprising three new translation literacies: theoretical literacy, technological literacy, and critical literacy.**

Keywords: **AI empowerment, Business English translation teaching, Core Competency theory, Constructivist Learning theory, Construction pathways, New translation literacies.**

I. INTRODUCTION

The rapid development of artificial intelligence (AI) presents both challenges and opportunities for education, triggering significant changes. AI empowerment is in the ascendant, with topics like AI-empowered education, AI-empowered college English teaching, and AI-empowered business translation teaching being hot topics and research areas today. Against this backdrop, to practice educational concepts such as "active learning" and "lifelong learning," and facilitate the cultivation of versatile talents with expertise in multiple areas, it is of great significance to explore how AI can empower the teaching of Business Translation in local colleges, helping students learn how to learn with technology, and preparing them for the future society. Cui et al.(2025) believe that although translation pedagogy has always been grounded in humanistic traditions, the rapid development of generative AI necessitates exploring new cultivation paths -- effectively utilizing technological efficiency to serve translation while continuing to uphold the creativity, ethics, and expression of cultural differences inherent in translation activities. Alshaikhi(2026) focuses on constructing a translator competence system in the AI era, pointing out that the existing translator competence frameworks are confined to pre-AI paradigms, mostly concentrating on linguistic, cultural, and textual levels, failing to incorporate AI literacy, data processing, evaluative judgment, and human-computer collaboration into the core. He argues that the scarcity of empirical comparative research on AI-integrated training versus traditional models leads to unclear differences in cultivation paths and the development patterns of compound abilities. Therefore, adjusting translation training frameworks and teaching models has become a prerequisite for cultivating new technological competencies.

The AI era necessitates cultivating students' new translation literacy. For the business translation course within the English discipline, the core of new translation literacy, or the connotation of new translation literacy in the AI era, needs clarification first. It comprises three modules: technological literacy, theoretical literacy, and critical literacy. Technological literacy

refers to the basic AI technical knowledge and abilities cultivated throughout the entire process of AI-collaborative translation, based on AI-empowered online teaching platforms and characterized by practicality. The roles of AI in various teaching and learning segments of translation include: 1. AI as a learning guide; 2. AI as an assistant; 3. AI as a learning companion; 4. AI as an expert. Theoretical literacy refers to knowledge acquired inside and outside the classroom empowered by AI, including introduction to translation, translation history, translation theory, text type, industry knowledge, business knowledge, comparative knowledge of language, culture, and thinking, intercultural communication knowledge, knowledge on ethics, law and privacy, and prompt literacy. With its theoretical nature, this literacy takes the preceding knowledge items to serve the ultimate goal of prompt literacy. Hwang(2023) proposes that prompt literacy refers to a user's ability, when using AIGC tools, to accurately construct instructions, understand and interpret output content, and adjust prompts based on feedback to achieve goals. Critical literacy refers to literacy in translation standards, criticism, appreciation, and decision-making empowered by AI, characterized by practicality. It includes general translation standards and specific standards for different text types, translation criticism models, students' appreciation levels, translation cognitive abilities, thinking qualities such as critical thinking, decision-making abilities, and post-editing abilities. Given that AI translation is not 100% reliable, cultivating critical literacy becomes particularly important. Among the three, theoretical literacy is the foundation, technological literacy is the means, and critical literacy is the goal. The cultivation of technological literacy and critical literacy runs through the entire process of theoretical literacy cultivation. Currently the business English translation textbooks used in universities fail to catch the rapid development of AI in updating accordingly. Then questions arise: How can traditional textbooks be innovated to meet the teaching demands of the AI era? How can educators organically integrate AI empowerment into traditional translation textbooks to cultivate new translation literacies? What are the cultivation paths for new translation literacies in business English translation teaching for non-English majors in the AI era? How does AI empowerment permeate the entire process of cultivating these three new translation literacies? The following sections will explore these questions in detail based on the Core Competency theory and Constructivist Learning theory.

II. THEORETICAL BASIS

There is an inherent alignment between the disciplinary Core Competency theory and Constructivist Learning theory. Constructivist Learning theory provides a psychological and epistemological foundation for the proposal, interpretation, and implementation of disciplinary core competencies in teaching. It also offers a theoretical basis for cultivating new translation literacy in the business English translation course for non-English majors in local comprehensive universities.

A. Core Competency Theory

Student core competencies are rooted in the holistic development of individuals, oriented towards "promoting comprehensive human development and adapting to societal needs." Based on students' developmental patterns, the core competencies define the key competencies and abilities students should possess upon completing specific educational stages, and respond to the fundamental educational question of "what kind of people to cultivate" and serves as a concrete interpretation of educational goals. Therefore, student core competencies should encompass comprehensive requirements across multiple dimensions, including knowledge, skills, emotional attitudes, and values, forming the cornerstone for individuals to adapt to future society, promote lifelong learning, and achieve comprehensive development. These competencies not only facilitate personal growth but also lay the foundation for building a healthy and orderly society (Xin et al., 2013). In September 2016, the Ministry of Education officially released the overall framework for "Chinese Students' Development of Core Competencies," which covers three main dimensions: cultural foundation, autonomous development, and social participation. They can be broken down into six core competencies: humanistic heritage, scientific spirit, learning to learn, healthy living, responsibility and commitment, and practical innovation (Liang et al., 2017). In 1997, the Organization for Economic Co-operation and Development (OECD) published a conceptual reference framework for core competencies, categorizing them into three broad categories: using tools interactively, interacting in socially heterogeneous groups, and acting autonomously. Specifically, the competency of "using tools interactively" is manifested as: the ability to use language, symbols, and text interactively; the ability to use knowledge and information interactively; and the ability to use technology interactively (DeSeCo, 2003). The OECD's framework diagram for core competencies specifically mentions "technology," which holds profound significance for integrating today's AI technology into education. Core competencies need to be integrated into disciplinary curricula, and cultivated and realized with these curricula as vehicles. For the English

discipline, scholars like Cheng Xiaotang, based on the instrumental attribute and humanistic characteristics of English, classify the core competencies of the English discipline into four dimensions: language ability, cultural awareness, thinking quality, and learning ability (Cheng et al., 2016).

B. Constructivist Learning Theory

In the 1960s, the Geneva School, led by J. Piaget, proposed the theoretical perspective of constructivism (also known as structuralism). This theory posits that children, through continuous interaction with their environment, gradually build their understanding of the external world and, in this process, achieve the development of their own cognitive structures. Given the close relationship between individual cognitive development and the learning process, constructivism can effectively explain the internal cognitive mechanisms of human learning, leading to the derivation of constructivist learning theory. This theory emphasizes that "context," "collaboration," "conversation," and "meaning construction" are the four core elements constituting the learning environment. From a constructivist perspective, knowledge is not acquired through direct transmission from the teacher but is the result of the learner's active meaning construction. The learner themselves is the subject of information processing; therefore, this theory advocates for a learner-centered learning model guided by the teacher (He, 1997). Constructivist teaching models include situated teaching, scaffolding instruction, anchored instruction, collaborative teaching, and random access instruction (Liu, 2023). Scaffolding instruction refers to gradually transferring the responsibility for managing the learning process from the teacher to the students themselves by building supportive teaching "scaffolds" (usually manifested as the teacher's guidance and support). Ultimately, when the target cognitive level is reached, the scaffold is removed, helping students autonomously progress from a lower cognitive level to a higher one. Anchored instruction (also known as "case-based teaching" or "problem-oriented teaching") emphasizes using real-world examples or specific problems as the "anchor" for learning, guiding learners to actively explore and personally experience within contexts close to reality, thereby constructing a meaningful understanding of knowledge. Random Access Instruction advocates that learners can enter the learning of the same content through multiple paths and different methods, thereby forming multi-angle and multi-level understandings and cognitions of the same topic or problem (Fan et al., 2003).

C. Relationship between the Two Theories and the Three New Translation Literacies

While core disciplinary competencies typically include such four elements as context, knowledge, competence and character, Constructivism provides a comprehensive theoretical basis for them: (1) Support for "Situatedness" and "Authenticity." Constructivist Learning theory posits that creating authentic and relevant contexts is an indispensable foundation and prerequisite for learners to achieve "meaning construction" (He, 1997). Therefore, the cultivation and evaluation of core disciplinary competencies must be in authentic or simulated authentic problem situations. Translation is the highest-level competency among the five foreign language skills, namely, listening, speaking, reading, writing, and translating. For business translation, the objects of translation i.e., various business texts, are themselves contexts. Various business texts originating from business settings are authentic tasks. Translation itself is practice and action, involving handling and solving various problems affecting the translation outcome. Among the three new translation literacies, the use of AI technology and AI-collaborative translation criticism activities are highly practical. (2) Support for "Active Construction" and "Deep Understanding." Constructivism's view of knowledge, while building upon traditional knowledge accumulation, places greater emphasis on the innovative application of existing knowledge and the ability to actively discover, deeply analyze, and effectively solve problems (Wu, 2023). Therefore, core competencies cannot be fostered through indoctrination. Teachers must design activities that trigger students' cognitive conflict, active inquiry, and social interaction. Students need to integrate scattered knowledge points into meaningful networks (i.e., "construction") while solving problems, thereby achieving a deep understanding of core concepts, which forms the basis for competency transfer. Among the three new translation literacies, AI-collaborative translation criticism involves the continuous collision and sublimation of ideas between student translators and AI tools. In this process, students constantly review, check, update, and expand their knowledge reserves, deepening knowledge and enhancing critical literacy. (3) Support for "Social Interaction" and "Cooperative Learning." Constructivist theory posits that learning is not a one-way transmission of knowledge but a dynamic process jointly accomplished by members of a learning community through collaboration and interaction. Each participant has the responsibility to contribute and share their experiences and insights (Li et al., 2019). Through collaboration, discussion, and negotiation with teachers and peers, individual thinking is developed and refined. Communication, collaboration, and teamwork are essential components of core competencies. Furthermore, higher-order competencies like "critical thinking" and "aesthetic appreciation" must be honed through the exchange, collision, and

reflection of ideas. This provides a direct basis for teaching methods such as project-based learning and collaborative inquiry. Among the three new translation literacies, the acquisition of critical literacy occurs not only through student-AI collaboration but also through other modes of criticism like teacher-student communication, peer cooperation, group work, and social practice. (4) Support for "Metacognition" and "Learning to Learn." Constructivism posits that learning should be actively constructed, reflective, and diagnostic. American psychologist John Hurley Flavell proposed the concept of "metacognition," pointing out that metacognitive strategies are a series of strategies used for monitoring and regulating cognitive processes, encompassing the pre-planning of cognitive activities, real-time monitoring of cognitive processes, and testing and evaluation of cognitive effects (FLAVELL, 1979). "Learning to learn" and "reflective ability" within core competencies are manifestations of metacognitive ability. Constructivist classrooms encourage students to reflect on their learning processes and thinking strategies, directly promoting the development of the core competency of "learning to learn." Among the three new translation literacies, the theoretical literacy covers broader and more complex content. For better teaching result, teachers can employ constructivist teaching models like scaffolding and anchored instructions in class to prepare students for the mastery of various theoretical knowledge required for business translation. Students can cultivate their active learning abilities with AI assistance after class, thus acquiring and internalizing more theoretical translation knowledge based on their respective levels, interests, and course needs. Through AI's real-time feedback and dynamic interaction, students can enhance their reflective abilities, flexibly adjust learning strategies, learn to question, and learn how to learn.

In summary, the Core Competency theory focuses on what kind of people to cultivate—the blueprint of the "destination"—while the Constructivist Learning theory concerns how people learn and develop these competencies—the scientific principles of the "navigation system" to reach that destination. Understanding and applying constructivism well is key to the transformation from "knowledge-based" teaching to "competency-based" teaching. For the business translation course for non-English majors, with AI integration, the textbook teaching content should be reconstructed to make abilities, competencies, and cultivation goals transparent, direct, and targeted, shifting from learning textbook translation knowledge to enhancing translation abilities, and ultimately to achieving the higher-order goal of cultivating new translation literacy.

III. THREE CONSTRCUTION PATHWAYS

After reviewing domestic and international research on pathways for core competency cultivation, scholars like Cheng Xiaotang found that among numerous measures, the reconstruction of the curriculum system based on core competencies, innovation in teaching methods, and the design of the evaluation system are the three most popular ones (Cheng et al., 2016). When exploring cultivation paths for translation talents based on core competencies, Wang (2018) proposed four paths—optimizing teacher structure, integrating the curriculum system, promoting blended learning, and strengthening output-oriented practice. The "curriculum system design" and "curriculum integration" mentioned by the two scholars correspond to the "theoretical literacy" among the three new translation literacies; "teaching method innovation" and "online and offline blended learning" correspond to "technological literacy"; and "evaluation system design" and "strengthening output-oriented practice" correspond to "critical literacy." Instructional design guided by constructivist theory and oriented towards core competencies typically possesses the following characteristics: 1. Creating authentic and meaningful problem situations; 2. Emphasizing students' processes of inquiry and discovery; 3. Building supportive learning "scaffolds"; 4. Fostering a classroom culture of collaboration and dialogue; 5. Implementing performance assessments that reflect competency development. Correspondingly, the focus of curriculum reform aiming at core competencies should be on establishing the intrinsic connection between curriculum content and student competency development—that is, finding out which content to select, how to organize this content, and how to present this content(Cheng et al., 2022). Below the author explores spiraling ascending construction paths for new translation literacy in business translation teaching for non-English majors. This exploration centers on the three new translation literacies (theoretical, technological, critical), based on the theoretical framework of the Core Competency theory and Constructivist Learning theory, and using the textbook of "Business English Translation" edited by Yuan Chunming and Jiang Li (*Foreign Language Teaching and Research Press*(FLTRP) publication) as an example. This study investigates the cultivation paths through reconstructing teaching content, teaching methods, and evaluation methods after AI integration, adhering to the four principles of "AI empowerment, textbook reliance, consideration of the university's actual situation, and combination with students' backgrounds". Being inseparable and mutually reinforcing, the three new translation literacies function as an integrated whole. Progressing step by step according to the textbook's chapter arrangement and cognitive patterns, the fostering process

is divided into three major stages: preliminary literacy construction, intermediate literacy construction, and advanced literacy construction— a term used here in light of Constructivist Learning Theory. These correspond respectively to the textbook's three progressive content sections: "Introduction," "Techniques," and "Texts," which will be elaborated upon.

A. PRELIMINARY LITERACY CONSTRUCTION

The construction of the three core new translation literacies should follow the cognitive rule of progressing from the known to the unknown. In the initial teaching stage, during the first class, it is necessary for the teacher to provide guidance and build scaffolds, introducing and demonstrating to students what knowledge they will learn, what abilities they will cultivate, and what literacies they will enhance during the one-semester business English translation course, as well as how they will implement the above. This gives students a basic understanding and a clear picture of the entire course and their subsequent tasks.

Regarding teaching content, the first step is reconstructing the teaching material. The author's institution is a local comprehensive university. This course is offered as a public elective to students university-wide. The textbook used is the FLTRP publication edited by Yuan Chunming and Jiang Li. Fan et al.(2003) point out that multimedia computers and network communication technology can be seen as ideal cognition-aided tools in a constructivist learning environment. Simultaneously, the human-computer interaction (HCI) offers a powerful means to effectively implement cooperative learning and interactive teaching. As AI technology is a recent development, Yuan's textbook is a traditional business translation textbook that hasn't been revised to include content related to AI technology empowerment. Critical literacy was also not mainstream in traditional business translation teaching, and the term "criticism" does not even appear in this textbook. Zhang(2024) notes that with the rapid development and widespread application of AI-assisted translation, the translation curriculum system in higher vocational institutions has not yet been adjusted promptly nor effectively integrated AI technology with translation teaching content. Regular undergraduate institutions face the same problem. Therefore, in the AI-empowered teaching process, teachers need to add AI content and materials related to critical literacy. Yuan's textbook content includes two major modules: Basic Theories of Business English Translation and Business English Translation Practice. It has broad coverage and strong practicality, making it a decent textbook for learning business English translation. The basic theory module includes: Introduction to Business English Translation, Standards of Business English Translation, Translation Process, Intercultural Communication and Business English Translation, Basic Translation Techniques, Translation Methods, Translation of Numerals and Abbreviations, etc. The translation practice module includes the characteristics and translation techniques of various business texts, covering company profiles, commercial advertisements, business correspondence, product specifications, business legal documents, business reports, company rules and regulations, e-commerce emails, meeting minutes, memoranda, telephone messages, notices, business negotiations, etc. The teacher rearranges the semester teaching schedule, re-categorizing the textbook content into the "Introduction Section", the "Techniques Section", and the "Texts Section". The first new section includes the textbook's Introduction to Business English Translation, Standards of Business English Translation, Translation Process, Intercultural Communication and Business English Translation, Translation Methods, Translation of Numerals and Abbreviations, etc. The second new section corresponds to the textbook's Basic Translation Techniques. The third new section involves the textbook's company introductions, commercial advertisements, business correspondence, product specifications, business legal documents, business reports, company rules and regulations, e-commerce emails, meeting minutes, memoranda, telephone messages, notices, business negotiations, etc. From constructivist perspective, the textbook content possesses the characteristics of authentic context and strong practicality. However, when examining the textbook through the lens of the three new translation literacies (theoretical, technological, critical), Yuan's textbook's initial "Introduction Section" only involves translation theory literacy, and even then, not comprehensively. Content requiring the teacher to supplement and guide in the classroom includes but not limited to the following: introduction to translation, Chinese and Western translation history, translators, translation works, translation theories, knowledge on text typology, industry, and business, comparative knowledge of language, culture, and thinking, knowledge on intercultural communication, knowledge on ethics, law and privacy, and prompt literacy, etc..

In terms of teaching methods, to make students understand the importance of AI technological literacy in business English translation for non-English majors and the extensive use of AI in subsequent teaching, teachers can specifically introduce various common AI tools usable for translation, such as ChatGPT, DeepSeek, Doubao, ERNIE Bot, Kimi, Ginimi, Qwen, etc. at the beginning of the semester. Teachers can also introduce smart campus learning platforms developed by the

university in collaboration with AI companies, like Rain Classroom, Superstar Learning Platform, U Campus, etc. These online platforms can record students' self-study situations and completion of various learning tasks after class, facilitating teacher monitoring, learning situation analysis, and access to formative evaluation results. Online writing platforms with AI-assisted grading functions like Pigai.org, BingoEnglish, Iwrite, etc. can also be introduced into class. Xu et al.(2024) point out that in the English teaching process, large language models(LLM) can play multiple roles such as "language consultant," "learning companion," and "assessment expert". In the subsequent teaching of chapters in the "Introduction Section", teachers can use scaffolding instruction to guide students in utilizing AI's multiple functions to assist their in-class and after-class translation learning, simultaneously using examples for students to practice with the AI tools on their mobile phones in class and continue practicing after class. The "Introduction Section" is the initial stage for cultivating students' translation theory awareness. The teacher can build scaffolds or use anchored instruction during teaching. While initially understanding and acquiring knowledge on translation theories in class, students can also choose appropriate AI tools or specialized smart teaching platforms after class to actively acquire and master more, thus constructing more meaning to enhance their translation theory literacy, and providing the premise and foundation for prompt creation and critical literacy improvement.

In terms of formative assessment and evaluation, the teacher can assign homework to create problem situations and comprehensively examine students' acquisition of the three major translation literacies in the initial stage through anchoring. For example, the first assignment could be a relatively easy task, like writing an essay on "the Introduction to Chinese and Western Translation History," no less than 500 words. Students are required to use a self-selected AI tool after class, create prompts, and inquire from aspects like stage characteristics, representative figures, translation viewpoints, and translated works. They can comparatively inquire about relevant content in Chinese and Western translation history, think about and discover similarities and differences, summarize patterns, and explore reasons. During this process, students can iteratively optimize prompts through follow-up questions, engaging in negotiation and dialogue—even critical refutation—with AI, an ever-patient, tireless, and omniscient giant, achieving personalized learning and embodying individualized instruction. In the student-AI interaction, the students remain the agent of questioning, reflecting their initiative, inquiry, and critical thinking in learning. Using prompts as a bridge, learners actively construct a spiraling and scaffolding knowledge framework through a recursive human-AI dialogue—moving from questioning and answering to analyzing, judging, criticizing, deep questioning, and ultimately optimizing answers, expanding the depth and breadth of knowledge. During the dialogue with AI, students not only practice expressing their own opinions, learn about the history of Chinese and Western translation, but also delve deeper into topics of personal interest, such as a particular translator, translation theory, or translation event. They construct a comprehensive picture of Chinese and Western translation history through active learning, inquiry, discovery, collaboration, and dialogue. Finally, they summarize and write an English essay as required, submitting it to platforms like Pigai.org. Using the built-in AI grading function of the platform, they can repeatedly modify lexical, grammatical, and syntactic problems to refine their essays. In completing this assignment, students achieve a trinity enhancement of theoretical, technological, and critical literacies. After finishing the "Introduction Section," students have had a general impression of the translation landscape. At this point, teachers can assign a second, slightly more challenging homework. An English essay of no less than 500 words could be set on Pigai.org, requiring students to select three typical AI tools to translate the same text from their own major field (students taking this course are from different colleges and majors across the university). This helps students realize that the translation knowledge learned in the business English translation course can also guide their translation practice in their own fields. Students then use the translation theories, standards, or criticism models learned in the "Introduction Section" to evaluate those AI translations, identify the best one, and ultimately find a suitable AI tool to aid their translation learning. In this process, students' critical literacy, including preliminary judgment and selection of translation theory/standards and AI tools, initial evaluation of different translations generated by different AI tools, along with theoretical and technological literacies, are fostered.

B. INTERMEDIATE LITERACY CONSTRUCTION

The construction of the three literacies in the intermediate teaching stage bases on the textbook's "Techniques Section." Regarding teaching content, after gaining a macroscopic basic understanding of translation's general picture and the complex factors involved in the previous stage, students have entered the gateway of translation. Now, they need to delve deeper, learning to understand and master the micro-level and detailed translation techniques—the fundamental skills. They need to understand how language, culture, thinking, business, techniques, etc., influence translation outcomes, and explore

the mysteries within the traditional "black box" of the translation process. This reflects the cognitive and exploratory nature of translation learning. The examples in this part take the form of sentences or paragraphs. The teacher integrates the translation techniques covered in Yuan's textbook into six basic techniques based on the teaching schedule and the internal connections among them, lecturing them in six sessions: 1. Choice of Word Meaning and Conversion; 2. Inversion; 3. Amplification, Omission, and Repetition; 4. Affirmation & Negation; 5. Conversion between Active and Passive Voices; 6. Division and Combination.

In terms of teaching methods, the transformation process and the underlying reasons become transparent with AI integration into translation teaching, due to its "deep thinking" function. AI also provides students with a personal tutor for after-class translation self-study, facilitating their active knowledge construction. Unlike the traditional process of teaching translation techniques—analyzing word meanings and sentence structures, introducing techniques, providing standard translations, and practicing sentence translation techniques with explanations—AI-empowered technique teaching integrates the acquisition of theoretical, technological, and critical literacies, revealing more comprehensively the various complex governing forces behind translation. Students no longer just see the tip of the translation iceberg but the entire submerged iceberg. Behind techniques lie broad theoretical factors. Effective conversion at the sentence and paragraph level relies on theoretical literacy. In teaching basic translation techniques, the integrated cultivation of the three literacies manifests in teaching methods where the teacher first provides scaffolds and anchors, selecting appropriate representative translation examples. Students are asked to translate by themselves first, then are presented with AI-generated translations prepared by the teacher (sometimes problematic translations), and standard translations from the textbook or other sources. A comparative analysis of these three translations from different sources is conducted, thereby introducing translation techniques, reminding students of translationese, and revealing how broad theoretical factors like language, culture, thinking, business, and techniques influence translation outcomes. Through demonstrative teaching, students develop basic translation criticism abilities and understand the strengths and weaknesses of AI tools. Teachers can also teach this on smart teaching platforms as blended learning, guiding students to log in and familiarize themselves with the platform after class, leaving traces of their active learning. Liu(2025) argues that the current digital transformation of education and the trend of interdisciplinary integration place dual pressures on traditional teaching models. Students face multiple challenges such as knowledge fragmentation, insufficient support for personalized learning, and limited practical contexts. Based on the four elements of constructivism—"context," "collaboration," "conversation," and "meaning construction"—he constructed a theoretical model of "technology empowerment --- cognitive construction --- ability enhancement" to systematically explore the mechanism of AI agents in enhancing students' adaptability to interdisciplinary studies. As business English translation involves complex interdisciplinary knowledge, teachers' introduction and demonstration of AI agents on smart teaching platforms in class builds scaffolds for students' extracurricular learning and collaboration with agents, enhancing their interdisciplinary adaptability and expanding their encyclopedic knowledge. During in-class practice, for the provided sentences or paragraphs, the teacher can ask students to translate by themselves first, create technique-related prompts later to guide AI tools for translation. They can think about and evaluate the impact of different prompts on the quality of AI-generated translations, carefully read AI's "deep thinking" translation process guidance, learn and master translation theory and technique knowledge from it, and at the same time understand AI's limitations, such as deficiencies in handling cultural, innovative, and ethical translation issues. Students can compare their own translations with AI-generated ones, compare multiple AI translations generated by different prompts, ask AI to evaluate their own translations, compare translations from different AI tools, or leverage the advantages of large-class teaching to facilitate cooperative learning. Engaging in peer or group discussions within a "community of practice," they can explore the merits of various translations, share translations, deepen impressions, gain a sense of achievement in learning, and enhance social adaptability and communication skills. The advantage of sentences as examples lies in their brevity and conciseness, not occupying excessive class time while precisely corresponding to translation techniques. The difficulty level matches the proficiency of entry-level students, and it facilitates students using AI tools on their mobile phones for instant translation in class, making AI empowerment in university translation classrooms practical, and embodying the principle of "learning by doing," conducive to students' active knowledge construction.

Regarding formative assessment in the intermediate stage, the teacher can continue to assign diverse forms of homework to create problem situations and comprehensively examine students' improvement in the three literacies. For example, teachers can hold an after-class online "Sentence Translation" activity. To create a lively and engaging translation atmosphere, the teacher can establish a class WeChat group where students freely express views and share their translations. Students participating in sharing and discussing can receive bonus points towards their regular grade. During AI-empowered

translation technique practice, students can provide their translations to AI for critique. With AI feedback, they can continuously modify their translations until satisfied and post the final version on the class WeChat group. Alternatively, by using AI and following the teacher's in-class demonstration, students can create prompts themselves, engage in multiple rounds of negotiation and dialogue with AI to obtain the best translation, and share it in the WeChat group. Due to the inherent randomness of discourse generated by LLM based on the same prompt, students' translations will not be identical, facilitating comparison and criticism. Additionally, as students have ample free time after class, they can make full use of AI's "deep thinking" function during translation generation. They can carefully read and reflect on the transparent "translation process guidance" provided by AI according to their own level. For the points they are struggling with or want to explore further, they can input prompts to question AI, engaging in deep and broad discussions, realizing human-machine communication. This enhances students' abilities on thinking, critique, reflection, communication, independent judgment, etc. In this process, they learn more about translation techniques and considerations, extend their theoretical knowledge and develop a precise understanding of specific translation techniques, achieving further improvement of the three literacies.

C. ADVANCED LITERACY CONSTRUCTION

In the advanced stage, the construction of the three translation literacies bases on the textbook's "Text Section." Regarding teaching content, since the previous two stages have laid a solid foundation through the integration of theory and practice, the advanced stage mainly involves authentic, complete business discourse translation. Apart from commercial advertising slogans, authentic business materials do not appear as fragmented, context-lacking individual sentences, instead, they appear holistically as complete discourses. These text types are complex and diverse, with discourse structures, linguistic features, and stylistic characteristics varying greatly, requiring differentiated treatment. The various business texts covered in Yuan's textbook mainly include company profiles, commercial advertisements, business correspondence, product specifications, business legal documents, business reports, company rules and regulations, e-commerce emails, meeting minutes, memoranda, telephone messages, notices, business negotiations, etc.

In terms of teaching methods, due to limited class hours, the teacher can screen the aforementioned business text types based on their frequency of use in business settings, the teacher's own areas of expertise, student interests, and future career directions. These selections should be included in the teaching schedule and covered in class. Business knowledge becomes crucial at this stage. The use of business jargon, clichés, or formulaic structures affects the professionalism of the translated text. The differences in language, culture, and thinking behind Chinese and English business discourses are also focal points at this stage. Representative translation theories relevant to business text translation, such as Complete Translation, Skopos Theory, Translation Variation Theory, and Text Typology, also demonstrate their importance at this stage. That is to say, authentic texts, business knowledge, and translation theories are the three key elements of the advanced stage. Since some business texts are particularly long, even with AI assistance, business materials with too many pages are naturally unsuitable for classroom demonstration. Therefore, teachers must be selective when choosing teaching materials, opting for texts that are representative, not too difficult, yet relatively comprehensive, reflecting authenticity and classroom operability. Such texts can come from the textbook, other business translation textbooks, the internet, the teacher's own accumulation from business translation practice, local business activity materials, etc. They can also use AI during lesson preparation to search for texts of suitable length or abridge those lengthy raw materials. In class, they can scaffold business expertise corresponding to business texts and translation theories applicable to different text types for students, explaining specifically, and demonstrating through application alongside text translation. During classroom teaching, the teacher can prepare AI-generated translations and standard translations in advance, revealing the translation process and presenting comparative analysis to students. This could involve comparing the original text with the standard translation, or comparing several translations, reflecting on the reasons for different renderings. Alternatively, teachers can assign first-draft AI-generated translations to students for evaluation or post-editing, or ask them to compare with translations generated after multiple rounds of iterative optimization with AI. When teaching students to use AI tools for writing translation prompts, teachers can guide them to focus on the entire text, observing how AI transforms business texts from macro to micro levels. To be specific, students can observe how AI handles the rhetorical style, professionalism, discourse structure, paragraph emphasis, sentence characteristics, lexical choices, etc., and how it skillfully integrates business expertise and corresponding translation techniques and theories into the text conversion during translation. Students can compare the flexibility in commercial advertisement translation with the rigidity in business legal translation, thereby grasping discourse translation techniques for different types of business texts.

Regarding formative assessment in the advanced stage, homework can be assigned in three types owing to factors such as students' limited language proficiency, restricted class hours, and the complexity of business text types and translation theories. The first type concerns business texts. Students can use AI after class to search for parallel bilingual texts for comparative study, grasping the different characteristics of Chinese and English business texts from lexical, syntactic, discoursal, stylistic, and rhetorical perspectives. They can also ask AI follow-up questions based on their knowledge level to facilitate deep learning, simultaneously using AI's guidance function to supplement their deficiencies in business expertise, preparing for effective translation of subsequent business texts. Teachers can also adopt collaborative learning methods within and outside the classroom via groups, using in-class group presentation and assessment as a formative evaluation method for bilingual presentations on professional business topics, thereby supplementing students' business domain knowledge. The teacher can use an AI lesson-planning assistant to source trending business topics and student groups use AI after class to brainstorm ideas, gather materials, create reports, and present them in class as part of formative assessment. Students can also use AI's "web search" function to find the latest business news of interest, various up-to-date business texts, business buzzwords, etc., keeping up with current events and applying learning to practice. The second type of homework concerns translation theories corresponding to business texts. Based on the theory names and brief introductions provided by the teacher in class as scaffolds or anchors, students use AI after class to learn more about major translation theories. For difficult points, they can ask AI to explain with simple examples, provide simplified versions of theoretical explanations, or request AI to recommend books on translation theories, including names, brief introductions, and difficulty comparisons tailored to their individual levels. Ultimately, they achieve random access instruction for theories guiding business text translation by different means. Students can also use AI to solve translation problems on authentic business texts, which leads to the third type of homework, characterized by practicality. Taking relatively manageable commercial advertisement translation as an example, during formative assessment, since students have ample access to mobile devices, tablets, computers, etc., the teacher can assign a homework task on platforms like Pigai.org: "A Report on the Process of Human-AI Collaboration in Advertisement Translation" and students faithfully document their thoughts and actions throughout the translation process in writing. Here are the steps: First, using a self-selected AI tool and based on the knowledge on translation, business, intercultural communication learned during the semester, students create prompts for the original commercial advertisement text provided by the teacher. They engage in multiple rounds of negotiation and dialogue with AI, criticizing the AI-generated translations by updating prompts until AI produces several satisfactory translations. After multiple rounds of human-machine dialogue, AI typically provides several options for selection. At this moment, students need to make the final decision with the knowledge gained during the semester and their critical thinking, highlighting human agency and the capacity for independent critical thinking. Finally, students write an essay documenting the entire process of obtaining the optimal translation through multiple rounds of negotiation with AI and submit it. This guides students to focus on the translation process, understanding the "why" behind it, thereby deepening their translation cognition and constructing high-level literacy in business text translation. Through students' personalized reports on the human-machine collaborative translation process, the teacher can evaluate whether their prompt literacy has improved after a semester's training and address details like which AI tool was their choice and why, difficulties encountered in guiding AI to generate ideal translations, how instructions or ways of questioning were adjusted, and whether AI-generated translations were always satisfactory. Based on Constructivist Learning theory, Wen et al.(2026) analyzed the generation mechanism and improvement paths of researchers' prompt literacy, proposing to systematically enhance researchers' prompt literacy through promoting cross-disciplinary collaboration, consolidating interdisciplinary knowledge foundations, enhancing basic knowledge related to AIGC, stimulating interest in AIGC technology, and effectively selecting applicable AIGC tools. These proposals also offer guidance for improving the prompt literacy of students taking the business translation elective for non-English majors.

Benjamin S. Bloom pointed out that educational goals define the expected outcomes of teaching and should reflect the changes occurring in students' cognitive, emotional, and behavioral domains. When educational objectives are expressed clearly, and when general objectives and detailed guidelines are systematically established, they can serve as an important basis for guiding teaching implementation and evaluating effectiveness(Zhu, 2008). The three core translation literacies exhibit progressivity not only in cultivation goals, paths, models, content, and methods but also in effectiveness evaluation, which includes formative assessments and summative evaluation. Traditional translation teaching tends to assign the translation of business materials as a main method for the summative assessment. This method, which only presents the original text and target text without revealing the intermediate process, fails to capture the students' translation process and thought process, leaving the specific acquisition of translation abilities and literacies unknown. Given that students can't

use mobile phones, computers, and other online devices during final exams, teachers can, for example, require students to write a translation critique of an advertisement, around 200 words, to examine their improvement in theoretical, technological, and critical literacies after a semester. The content should include the original advertisement, a problematic translation, an AI-generated translation prepared by the teacher in advance, and an official translation. Students are required to use the commercial knowledge and relevant translation theory/criticism standards learned during the semester to evaluate the provided original text and three translations from multiple perspectives, identifying the best one. Finally, based on their thought and inspiration gained during the translation critique, they provide their own translation. This comprehensive proficiency assessment at the advanced stage elevates student ability requirements from lower-order memorization, comprehension, and application in traditional assessments to higher-order analysis, evaluation, and creation levels. The evaluation of the whole-process AI-empowered translation teaching follows Bloom's taxonomy of educational objectives, whose basic characteristic is emphasizing the continuity, hierarchy, and accumulation of education.

IV. CONCLUSION

Generative artificial intelligence is reshaping translation, and translation teaching and practice. The sooner one embraces technology, the sooner one can enjoy the dividends it brings to translation. This paper, starting from the Core Competency theory and Constructivist Learning theory, delves into the intrinsic relationships among the three new translation literacies in the AI era: theoretical literacy, technological literacy, and critical literacy. On this basis, taking the textbook of "Business English Translation" edited by Yuan Chunming and Jiang Li (published by FLTRP) as an example, the author utilizes the chapter sequencing advantages and cognitive patterns of its "Introduction Section," "Techniques Section," and "Texts Section." The paper organically integrates a unified, staged cultivation model of the three new translation literacies, reconstructs teaching content, teaching methods, and evaluation methods, with core competencies as the cultivation goal and constructivism as the methodological guide. It proposes exploring the construction path of AI-empowered new translation literacy through three spiraling ascending paths: preliminary literacy construction, intermediate literacy construction, and advanced literacy construction. The preliminary stage focuses on introducing typical translation knowledge, AI tools, and translation criticism theories/methods, emphasizing the enlightenment and foundation of the three literacies. The intermediate stage focuses on teaching basic business translation techniques, with an emphasis on a solid, progressive, and detailed mastery of the three literacies. The advanced stage focuses on teaching business knowledge, business texts, and related translation theories, deeply exploring the interrelationships and impacts of seven key elements—language, culture, thinking, business, techniques, discourse, and theory—in authentic business text translation, emphasizing the comprehensive, macro-level application of the three literacies. This three-stage literacy cultivation model is closely interlinked and progressively enhances student literacy, promising to cultivate independent translation talents capable of human-AI collaboration, contributing to the university's goal of cultivating "versatile talents with specialized skills."

In the process of exploring AI empowerment in business translation teaching for non-English majors, many new questions have also emerged. These include the impact of students' different professional backgrounds on their acquisition of the three new translation literacies, especially technological literacy; the influence of choosing different AI tools on students' business translation learning outcomes; empirical evaluation of the cultivation effects of the three new translation literacies; and the impact of translation teachers' AI technological literacy on students' AI-empowered translation learning. These issues await further research in the future.

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