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Integrating Self-Determination Theory into a Dual-Track Micro-Learning Model for Online Business English Speaking Teaching

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Abstract

This research proposes an SDT-based Dual-Track Micro-Learning model to address key challenges in online Business English speaking instruction: low interactivity, weak motivation, and fragmented skill development. The model structures learning into two synergistic tracks: a synchronous, teacher-guided track for motivation activation, scenario modeling, and immediate feedback; and an asynchronous, student-directed track for personalized skill internalization via micro-learning and self-guided practice. Together, they form a closed "guidance–internalization–reinforcement" cycle designed to satisfy learners' needs for autonomy, competence, and relatedness. The model was developed through a mixed-methods framework. Following a theoretical analysis, diagnostic surveys of 37 freshmen and 99 advanced Business English majors identified essential learning pain spots and differentiated needs across proficiency levels. Concrete instructional models were then elaborated for business meeting and negotiation scenarios. Subsequently, a post-intervention survey of 110 students (including 68 who experienced a teaching reform aligned with the model) was conducted. Correlation analysis revealed strong positive relationships between perceived practical integration of course content and outcomes such as teaching satisfaction (r=.879, p< .01), knowledge gain (r= .846, p< .01), and applied skill improvement (r= .801, p< .01). Theoretically, this research advances SDT application by transforming its three psychological needs into a structured instructional model. Practically, it provides educators with an evidence-based, scalable template for developing motivating and effective online Business English speaking courses that cater to learners at different stages.

Keywords: Self-Determination Theory (SDT), Teaching Model, Dual-track Learning, Micro-learning, Business English Speaking, Online Language Learning, Learner Motivation

Introduction

English language instruction has undergone a revolution thanks to the internet's integration, which has created previously unheard-of possibilities for individualized, immersive, and authentic learning experiences.With the rapid advancement of information

technology and the transformation of teaching models in the post-pandemic era, online education has become a crucial component of the educational landscape. Business English speaking instruction has also gradually shifted from traditional offline models to online formats. However, this transition has brought forth numerous pressing challenges that need to be addressed in online Business English speaking teaching.

Research Background

Online Business English speaking teaching exhibits notable shortcomings in teaching model. On one hand, the issue of insufficient interactivity is particularly pronounced. Many online courses still rely predominantly on one-way lectures from teachers, with students passively receiving information and lacking adequate opportunities for speaking practice and real-time interaction with teachers and peers. This model makes it difficult for students to develop oral proficiency in authentic communicative contexts and hinders them from receiving timely, targeted guidance and feedback. On the other hand, weak motivation stimulation is another critical factor constraining teaching effectiveness. The relatively flexible nature of the online learning environment can lead to student complacency and a lack of sustained learning drive. Moreover, the absence of face-to-face supervision and encouragement makes it challenging to fully activate students' learning enthusiasm. Additionally, the fragmentation of skill training cannot be overlooked. Existing teaching content often lacks systematic coherence, resulting in scattered knowledge and skill points that fail to form a comprehensive Business English speaking competency model. For instance, teachers might randomly introduce expressions for various business scenarios without integrating them organically, leaving students unable to apply these flexibly in practice.

Micro-learning, as an emerging pedagogical approach, demonstrates strong compatibility with speaking skill training. Characterized by short durations, micro-learning aligns well with the fragmented time arrangements of online learning, allowing students to utilize spare moments for study and practice. Simultaneously, by focusing on training single-point competencies—such as "opening expressions in negotiations" or "telephone message techniques"—micro-learning enables students to concentrate on mastering specific speaking skills within brief time frames. This focused training aligns with the acquisition principle of "frequent practice and gradual internalization" for speaking proficiency, helping students transform acquired knowledge and skills into practical language application abilities.

The application of the "dual-track model" holds significant potential for improving the current state of online Business English speaking teaching. The teacher-guided track, through online real-time interactive activities such as scenario simulations, group dialogues, and instant error correction, provides students with an authentic communication platform that enhances instructional interactivity. Within this track, teachers play guiding and demonstrative roles, helping students master correct expression methods and communication techniques while promptly addressing errors. The student-directed track, based on video-assisted personalized practice—such as segment imitation, role immersion, and recording review—allows students to engage in autonomous learning and practice according to their individual progress and needs. This personalized approach accommodates learner differences and boosts students' initiative and motivation. By organically integrating the teacher-guided and student-directed tracks, the dual-track model effectively mitigates

the drawback of "teacher-student separation" in online teaching and enhances instructional outcomes.

Self-Determination Theory (SDT) holds substantial theoretical value for speaking teaching model. The theory posits that an individual's intrinsic motivation is influenced by three basic psychological needs: autonomy, competence, and relatedness. In online Business English speaking teaching, addressing these student needs can effectively resolve issues of "low engagement and poor persistence" in online Business English speaking learning. Fulfilling the need for autonomy allows students to independently choose learning content, methods, and pace, thereby enhancing their sense of control over learning. Satisfying the need for competence involves setting appropriate learning goals and tasks, enabling students to experience success and build confidence in the learning process. Meeting the need for relatedness is achieved by fostering a supportive learning atmosphere and interactive environment, helping students feel part of a learning community and thereby strengthening their motivation and engagement.

To accurately identify the practical challenges and student needs in online Business English speaking teaching, this research conducted two questionnaire surveys prior to model development. First, a survey of first-year Business English majors (N=37) at a university in Guangdong Province revealed that 86.49% of students believed they had "insufficient vocabulary and unfamiliarity with business scenario expression logic," while 40.54% reported "hesitation to speak actively due to nervousness." Additionally, independent post-class practice time was generally inadequate, with 83.79% of students practicing less than 30 minutes daily. To further understand the situation among advanced learners, another survey targeting predominantly Business English majors (N=99) indicated that grammar (66.67%), vocabulary (65.66%), and listening (59.60%) remained core difficulties. Moreover, over two-thirds (68.68%) of students had been exposed to micro-learning resources, and a majority (78.78%) expressed comfort with AI-assisted learning. These two datasets collectively highlight the pervasive challenges in interactivity, motivation stimulation, and skill systematization faced by current online speaking instruction. They also underscore differences between learners at distinct stages (beginners versus advanced learners) in terms of anxiety sources and technology acceptance. This provides crucial empirical grounding for the subsequent development of a dual-track micro-learning model guided by Self-Determination Theory, which aims to be both universally applicable and adaptable to different learning phases.

Research Objectives, Questions and Hypotheses

The main purpose of this research is to construct and preliminarily validate a dual-track micro-learning teaching model for online Business English speaking, guided by Self-Determination Theory (SDT). Based on this purpose, this section will systematically elaborate on the overall research objectives, specific research questions, and testable research hypotheses of the research.

Research Objectives

The specific objectives of this research are as follows:

·To develop a dual-track micro-learning teaching model for online Business English speaking based on Self-Determination Theory (SDT).

·To integrate concrete, implementable dual-track micro-learning activities and resource templates for crucial business speaking scenarios such as negotiations and meetings.

·To provide preliminary empirical evidence on learner needs and the model's effectiveness through surveys and instructional feedback for further practice and research.

Research Questions

To achieve the aforementioned objectives, this research proposes the following three core research questions:

Question 1: How can the three key needs of Self-Determination Theory (SDT)—autonomy, competence, and relatedness—be translated into specific teaching strategies within the dual-track micro-learning approach for English speaking teaching?

Question 2: What are the concrete solutions for implementing dual-track micro-learning in essential Business English speaking scenarios, such as negotiations, meetings, and telephone communication?

Question 3: What theoretical and practical implications does this teaching model offer for online Business English speaking teaching?

Research Hypotheses

To enhance the testability of the research and foster theoretical dialogue, the following hypotheses are proposed based on the aforementioned model and preliminary investigation:

H1: The SDT-based dual-track micro-learning model can effectively support and satisfy learners' needs for autonomy, competence, and relatedness in online English speaking learning.

H2: There is a positive association between teaching models applying the main principles of this model and students' positive perceptions of learning outcomes, including knowledge improvement, skill enhancement, and teaching satisfaction.

Significance of the Research

Regarding its theoretical significance, this research deeply integrates Self-Determination Theory (SDT) with English speaking teaching model, constructing a systematic model of "motivational needs–dual-track model–skill objectives." The establishment of this model enriches the theory of online language teaching and provides a new theoretical perspective and research direction for online Business English speaking teaching. By combining motivational theory with teaching practice, it further refines the language teaching theoretical system and promotes the development of online language teaching research.

In terms of practical significance, this research offers teachers a broadly applicable dual-track micro-learning model that can be directly implemented. It includes elements such as video resource selection, interactive task assignment, and feedback techniques. These specific solutions are highly practical, enabling teachers to address real challenges in online Business English speaking teaching, thereby improving teaching quality and effectiveness. Simultaneously, it reduces the burden of teaching procedure design, allowing teachers to devote more time and effort to understanding students' learning progress and individual differences, ultimately providing more personalized teaching support.

Literature Review

Self-Determination Theory (SDT) and Language Teaching Model

SDT is a theory of human motivation (Deci & Ryan, 1985; Ryan & Deci, 2017)The first is concerned with the fulfillment of basic psychological needs of competence, relatedness, and autonomy. The fulfillment of these needs provides necessary nutrients for psychological growth, integration, and flourishing (Deci et al., 1996).The second is a continuum of motivation and behavioral regulation. The continuum ranges from a motivation, an absence of motivation, through controlled motivation, where behavior is perceived to be regulated by forces external to the self, to autonomous motivation, where behavior is perceived to be regulated from within the self (Ryan & Deci, 2020). The fulfillment of basic psychological needs is said to facilitate the internalization of reasons for studying and to promote autonomous self-regulation, whereas the frustration of basic psychological needs leads to more controlled regulation and disengagement (Vansteenkiste et al., 2018).SDT has a range of theoretical postulates relating to learning, development, the internalization of values and beliefs, and general well-being, thus suggesting ways in which cognitive load may adversely affect individuals beyond school or achievement-related outcomes.

The application value of Self-Determination Theory (SDT) in the field of language teaching has been widely recognized. Its main insights suggest that teaching model should focus on: 1) providing choices and decision-making space to meet the need for autonomy; 2) assigning challenging yet feedback-accessible tasks to enhance the sense of competence; and 3) fostering a collaborative and mutually supportive community environment to satisfy the need for relatedness. Fulfilling these needs is believed to effectively promote the internalization of language learning motivation and the sustainability of learning behaviors.

However, a notable research gap exists. Most literature concentrates on exploring the principled application of SDT in traditional face-to-face or general language learning environments. In contrast, there is a scarcity of research specifically addressing how to systematically translate these abstract needs into concrete, actionable teaching strategies for the particular context of online Business English speaking class. This disconnect between theoretical principles and teaching practices creates a research void, which serves as the entry point for this research: to develop a micro-level model grounded in SDT that directly informs online Business English speaking teaching.

Core Requirements of Online Business English Speaking Teaching

The essence of Business English speaking lies in context-based practical communication competence. Its teaching pith focuses on cultivating learners' ability to appropriately and effectively use language to accomplish real-world tasks within specific business contexts, such as negotiations, meetings, and presentations. This context-driven nature requires that teaching content must go beyond isolated vocabulary and grammar, integrating industry knowledge, communication strategies, and cultural awareness.

Over the years, it is a surge to establish and develop “the smart compus” in China. For example, the reasearcher from Taicang Secondary Vocational School in Jiangsu province remarked that the “Dual E + “ platform (equipped with a robust teaching data center, unified identity authentication, a public portal, and a big data analytics system) comprehensively

covers the needs of modern apprenticeship training while also taking into account the functions of traditional smart campus software platforms.

Online micro-learning can be classified as one of the seven distinct categories(others are Intelligent Tutoring System (ITS), Dialogue-based Tutoring System (DBTS), Exploratory Learning Environment (ELE), Automated Writing Evaluation (AWE), Personalized Learning, Adaptive Learning and Learning analytics) of AI techniques when utilized as a learning tool. While the online teaching environment offers flexibility and resource accessibility, it also amplifies inherent challenges in online Business English speaking class: 1) lack of interactive authenticity—how to simulate high-stakes business interactions online and stimulate willingness to speak; 2) insufficient immediacy of feedback—how to provide precise, actionable skill feedback in a teacher-student separated setting; and 3) absence of personalized learning pathways—how to meet the differentiated needs of learners at varying proficiency levels within complex business scenarios.

Despite the increasing prevalence of online teaching tools, many current online Business English course models remain confined to the traditional model of “content delivery (e.g., uniform pre-recorded videos) + assignment submission.” This model fails to systematically address the core requirements mentioned above, neglecting the complexity of scenarios, the necessity of interaction, and the sustainability of motivation, often resulting in superficial learning outcomes. Therefore, exploring an online teaching model that deeply integrates contextualized practice, real-time interaction, and personalized support holds urgent practical significance.

Dual-Track Micro-Learning in Speaking Skill Training

Dual-track training method is effective and common. According to the quasi-experimental research consisted of 1267 trainees who participated in 12 sessions conducted by researchers from China Trauma Care Training Nursing (CTCT®-N) project, The dual-track teaching model combining micro-learning tasks can enhance the educational effectiveness and satisfaction of trauma care nursing training. Therefore, as a blended model of teaching and learning, dual-track model can also be applied effectively to Business English speaking. Online interactive tools enable synchronous meetings (Lowenthal et al., 2020), teaching (Martin & Tapp, 2019), collaborative learning (Collazos et al., 2021), and course organization (Wilcox et al., 2016).Something new emerged since 2010. The disciplines became more data-oriented and algorithm-oriented. An example from biology illustrates this: biology students used to go for walks in the woods to collect and analyze plants. Today they (unfortunately, some might think) sit in the lab, programming gene sequencing in Python. At the University of Oslo, several subjects were digitalized in this period.

The integration of the dual-track teaching model and micro-learning offers a new perspective for addressing the challenges of online skill training. The "dual-track" approach typically combines teacher-guided synchronous learning with student-directed asynchronous learning to achieve complementary advantages, while "micro-learning" breaks down complex skills into short, focused learning units that facilitate knowledge absorption and the utilization of fragmented time. In speaking training, this combination demonstrates significant potential: the teacher-guided track can provide real-time demonstrations, interactive practice, and corrective feedback, while the student-directed track can support personalized repetitive

imitation, recording reviews, and reflection. Existing research has shown that this model enhances effectiveness and satisfaction in skill training fields, preliminarily validating its application value in structured skill acquisition.Lectures play one of the most important roles in shaping university students' academic development(Yu, 2022).

However, current explorations of "dual-track micro-learning" in language teaching, particularly in Business English speaking, still face two key limitations. First, most models lack robust theoretical guidance on motivation (such as SDT) and fail to systematically integrate strategies for stimulating and sustaining learning motivation into the dual-track model. Second, innovations often appear as isolated "point-based" attempts, lacking standardized, transferable templates based on major Business English speaking scenarios (e.g., meetings, negotiations), which hinders the dissemination of effective practices. Therefore, there is an urgent need to develop a dual-track micro-learning model that combines theoretical depth with practical standardization—a gap this research aims to fill.

Theoretical Framework of SDT-Driven Dual-Track Micro-Learning Model

This chapter aims to construct the theoretical framework of this research. Firstly, it elucidates the fundamental concept and synergistic logic of "dual-track micro-learning" in the context of Business English speaking teaching. Secondly, it systematically elaborates on how the three psychological needs of Self-Determination Theory (SDT) can be transformed into specific strategies guiding the development of the dual-track approach. Finally, an integrated "motivation–design–competence" instructional model is presented, clarifying its systemic operational mechanisms.

Connotation of Dual-Track Micro-Learning for Business English Speaking

The essence of the dual-track micro-learning model lies in constructing a reinforced learning loop for online business English speaking class through the temporal coordination and functional complementarity of the teacher-guided track and the student-directed track.

The teacher-guided track is positioned as "motivation activation and directional guidance". Its primary function is not one-way knowledge transmission but rather to efficiently stimulate learning interest and establish skill benchmarks within limited synchronous time. This is achieved through scenario demonstrations that present norms, interactive tasks that create practice opportunities, and targeted feedback that provides corrective pathways.

The student-directed track is positioned as "skill internalization and personalized enhancement". Leveraging the flexibility of asynchronous learning, this track offers students structured video resources for observation and research, low-pressure practice environments for repeated trial and error, and self-review tools to foster meta-cognitive reflection. This enables the personalized transition from "knowing" to "mastery."

The synergy between the two tracks follows a closed-loop logic of "Guidance – Internalization – Reinforcement" (see Figure 1). The teacher-guided track accomplishes initial cognitive construction and motivation activation (Guidance). The student-directed track then builds upon classroom input by engaging in deep processing and personalized practice (Internalization). Subsequently, the teacher provides renewed focused guidance based on

feedback from the autonomous practice (Reinforcement). This complete loop ensures effective iteration and continuous deepening of the learning process.

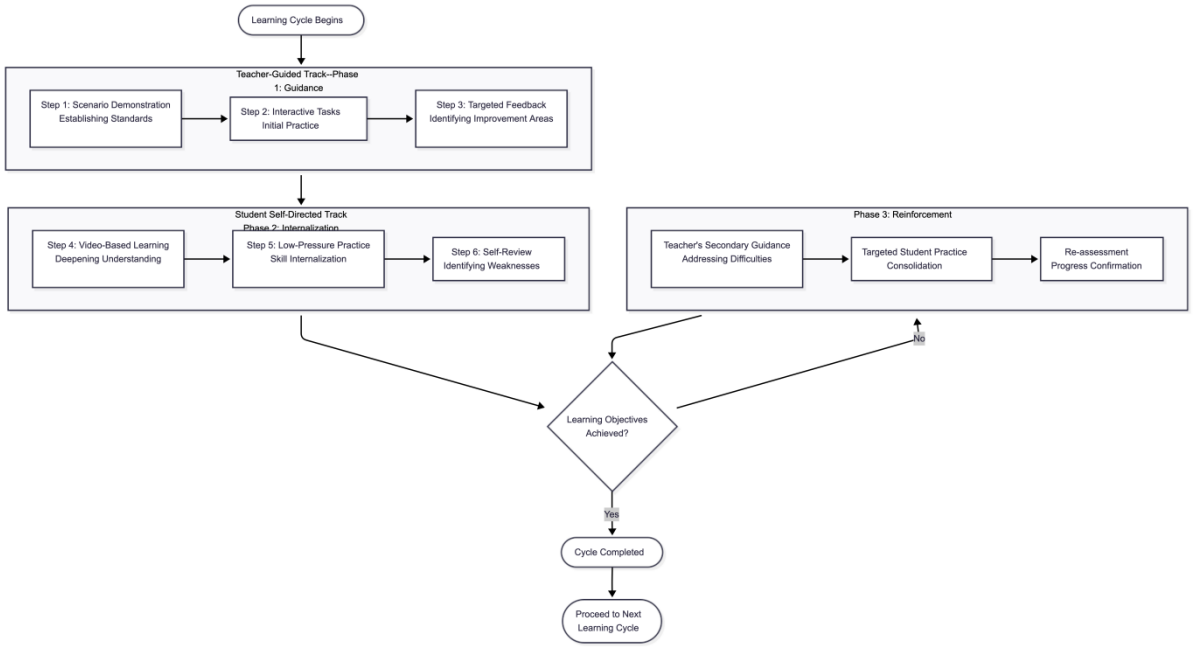

Figure 1. Collaborative Flow Process of Teacher-Guided and Student-Directed Tracks

SDT-Based Teaching Strategies for Dual Tracks

Around the world, the traditional 45 min lecture(2 sessions each time) becomes less central, and is being replaced by shorter, often pre-recorded video sessions as part of the teaching trajectory. With so many digital resources at hand, the role of the teacher will be less direct teaching and more as a facilitator of resources. This model adopts the three psychological needs of Self-Determination Theory—autonomy, competence, and relatedness—as its foundational principles, systematically mapping them to the concrete model of the dual tracks.

First, fulfilling the need for autonomy. The model aims to provide meaningful choices, balancing structural support with personal control. In the teacher-guided track, autonomy is nurtured by offering limited options (e.g., choosing one of 2–3 scenarios for simulation), thereby granting students a sense of agency in decision-making. In the student-directed track, greater autonomy is afforded through the ability to select resource difficulty, practice modes, and learning pace, catering to diverse learning preferences and progress levels.

Second, cultivating the need for competence. The model focuses on creating clear progression pathways and positive achievement feedback. The teacher-guided track employs a "scaffolded task" approach, breaking down skills from simple to complex, accompanied by immediate and specific teacher feedback that acknowledges progress and outlines pathways forward. The student-directed track utilizes systems such as “micro-achievement badges”, skill mastery progress bars, and practice outcome comparison tools (e.g., speech waveform analysis) to make skill growth visible and tangible, fostering sustained student motivation.

Third, nurturing the need for relatedness. The model emphasizes building a relaxing practice community and a sense of shared purpose. The teacher-guided track organizes fixed "virtual business teams" for collaborative tasks, strengthening team identity and mutual support. The student-directed track employs easy interactive features such as "anonymous sharing zones" and "themed check-ins," allowing students to share practice outcomes and encourage one another in a low-pressure environment, thereby fostering learning connections and community identity in the online setting.

Integrated Teaching Model: From Motivation to Competence

Based on the aforementioned strategies, this research proposes an integrated instructional model (see Figure 2), which visually illustrates the systematic transformation pathway from psychological needs to instructional implementation, and further to competency goals.

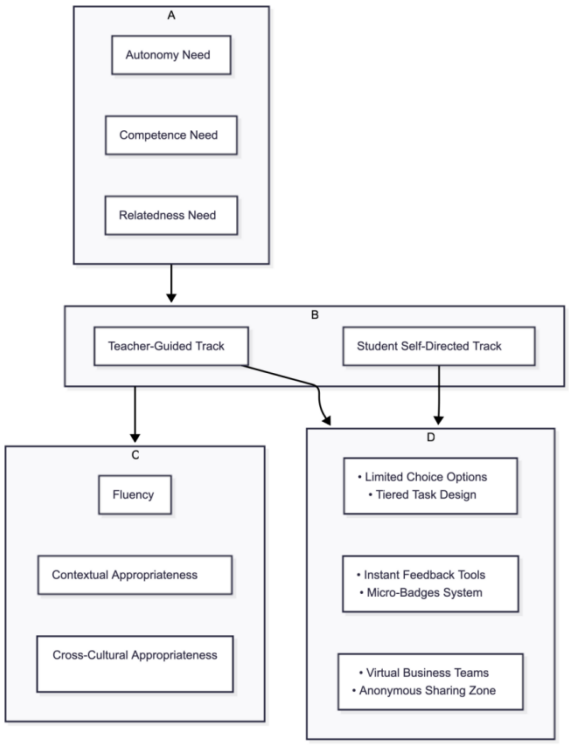

Figure 2. SDT-Driven Dual-Track Micro-Learning Theoretical Model

This model is centered on the three fundamental psychological needs of Self-Determination Theory as its driving force. These needs directly inform the essential elements of the dual-track teaching model. For instance, to fulfill the need for autonomy, the model must incorporate mechanisms such as "scenario/task selection." To address the need for competence, it requires the design of "scaffolded tasks" and "targeted feedback." To satisfy the need for relatedness, it necessitates the organization of "group collaboration" and "peer interaction."

These elements are implemented through specific activities in both the teacher-guided track and the student-directed track, collectively contributing to the ultimate goals of Business English speaking proficiency: fluency, contextual adaptability, and intercultural appropriateness. The model emphasizes that every teaching component must be evaluated for both its "motivational value" and its "skill-building efficacy," ensuring that the learning

process is both engaging and effective. This model not only provides theoretical coherence to the model but also offers teachers a clear "conceptual map" for understanding and implementing dual-track model.

Research Methodology and Data Analysis

Research Design

To systematically address the research questions and develop a teaching model that is both theoretically rigorous and practically feasible, this research adopts a mixed-methods approach that integrates theory-driven and empirically-informed perspectives. The overall design follows a logical pathway of “need diagnosis – model construction – preliminary effect exploration”, aligning with the “design-based research” paradigm. This paradigm emphasizes the development and validation of instructional interventions through iterative cycles of design, implementation, analysis, and refinement within authentic educational contexts.

This research first establishes its theoretical foundation through literature review and theoretical analysis (Chapters 1 and 2). Subsequently, prior to model construction, two pre-intervention questionnaires (Questionnaire A and Questionnaire B) were administered to diagnose the critical challenges and psychological needs of learners at different academic stages, thereby providing empirical background for the teaching model. Next, based on Self-Determination Theory (SDT) and the diagnostic findings, the dual-track micro-learning theoretical model and its corresponding teaching methods were developed (Chapters 3 and 5). Finally, a post-intervention questionnaire (Questionnaire C) was conducted on an existing teaching reform initiative whose essential principles align with this model, to preliminarily explore the perceived effectiveness of such designs. This process establishes a complete chain of evidence from “input” (learner needs) to “output” (preliminary outcomes), laying the foundation for subsequent comprehensive teaching experiments.

Research Participants

This research involved three groups of participants, corresponding to the three administered questionnaires:

Questionnaire A Participants: 37 first-year Business English majors from a university in Guangdong Province. This group, being at the introductory stage of Business English speaking learning, provided feedback crucial for identifying common challenges and foundational needs faced by beginners.

Questionnaire B Participants: 99 senior-year (sophomore to senior) students from the same university, predominantly majoring in Business English. Having acquired a foundational level of professional knowledge, this group's needs are more focused on skill deepening, personalized learning, and the integration of technological tools. Their input informed the advanced considerations of the model.

Questionnaire C Participants: 110 senior-year (sophomore to senior) Business English majors from the same university, 68 of whom confirmed participation in a pedagogical reform initiative within the Comprehensive Business English III course, which includes Business English speaking training. This reform emphasizes scenario-based learning, interactivity, and student-centered approaches, aligning closely with the principles of this model. Therefore,

feedback on their learning experience serves as preliminary evidence of the model's potential effectiveness.

All participants provided informed consent, and data were collected solely for academic research purposes with guaranteed anonymity.

Data Collection Instruments

Questionnaire Development Process

This research employed self-developed questionnaires as the primary data collection tool. The questionnaire development strictly adhered to the following steps:

First, based on the literature review (Chapter 2) and Self-Determination Theory (SDT), core constructs were identified, including learning pain spots, motivational needs (autonomy, competence, relatedness), technology acceptance, and perceptions of teaching effectiveness. Subsequently, these abstract constructs were operationalized into specific measurement items. For example, to measure the "need for competence," items were designed addressing "perceived effectiveness of teacher feedback" and "the need for visual progress indicators."

All items utilized a Likert 5-point scale (1 = Strongly Disagree, 5 = Strongly Agree). After the initial draft was formulated, faculty members from the School of Foreign Languages at the same university, who teach Business English speaking courses, were invited to evaluate the content validity. Based on their feedback, revisions were made to enhance the clarity, relevance, and wording accuracy of the items. Subsequently, a small-scale pilot test was conducted to ensure the questionnaire's comprehensibility and reasonable completion time, and minor adjustments to phrasing were made according to the feedback received.

Reliability and Validity of Questionnaires

This research employed self-developed questionnaires as the primary data collection instruments. A total of three sets of questionnaires (Questionnaire A, Questionnaire B, and Questionnaire C) were used, all based on a Likert 5-point scale, supplemented with multiple-choice and open-ended questions.

Questionnaire A (Diagnostic Survey for Freshmen's Needs): Focused on the learning challenges of first-year students, such as vocabulary and contextual logic, speaking anxiety, expectations of teacher support, and after-class practice habits.

Questionnaire B (Survey on Advanced Students' Needs and Technology Acceptance): Aimed at investigating the persistent skill difficulties of senior-year students, their awareness and usage of micro-learning resources, as well as their acceptance of AI-assisted language learning and expectations for specific functionalities.

Questionnaire C (Survey on Perceived Effectiveness of Teaching Reform): Evaluated students’ perceived effects of the reformed course in terms of content practicality, teaching methods, and personal knowledge and skill enhancement.

To ensure the reliability of the measurement instruments, reliability tests were conducted on Questionnaire A and Questionnaire B (pre-intervention questionnaires) prior to data analysis. The results (see Table 1) show that the Cronbach’s α coefficients for the two

questionnaires were 0.803 and 0.807, respectively, both exceeding the good standard of 0.80, indicating satisfactory internal consistency and reliable measurement outcomes.

Table 1
Reliability Analysis Summary of Pre-Intervention Test Questionnaires

Questionnaire	Target Participants	Sample Size (N)	Number of Items	Cronbach's α
Questionnaire A	First-year Business English majors	37	3	0.803
Questionnaire B	Advanced Business English majors	99	4	0.807

Note: The reliability assessment criteria are as follows: $\alpha \geq 0.9$ (Excellent), $\alpha \geq 0.8$ (Good), $\alpha \geq 0.7$ (Acceptable).

Data Analysis Methods

This research utilized SPSS 27.0 software for data analysis. First, descriptive statistics were employed to examine the basic characteristics of the sample and the distribution of needs (frequency, percentage, mean, standard deviation). Second, Pearson product-moment correlation analysis was conducted to explore the linear relationships between key variables in Questionnaire C. This method was selected for two reasons: 1) the research aims to preliminarily investigate the strength and direction of associations between continuous variables such as "practical integration of course content," "teaching satisfaction," and "perceived learning gains," rather than establishing causality; 2) Pearson correlation is suitable for analyzing linear relationships between two continuous variables. Prior to conducting the correlation analysis, normality tests (Shapiro-Wilk test) were performed on the relevant variables. The results indicated that the data distribution was acceptable, meeting the basic requirements for parametric tests. Additionally, comparative analysis was used to contrast the results of Questionnaires A and B across groups to reveal differences between academic stages.

Data Analysis Results

Pre-Intervention Test Results

The analysis of Questionnaires A and B reveals both common demands and stage-specific differences among online Business English speaking learners.

First, there are shared needs. Students from both academic stages demonstrate a strong desire for scenario-based practice (such as simulated negotiations), immediate professional feedback (from teachers or AI), and motivational support (to alleviate anxiety and clarify learning value). From the demand side, this validates the necessity of the model's core pillars: "scenario-based micro-tasks," "dual-track feedback," and "motivation-oriented model."

Second, there are stage-specific differences. The comparative analysis highlights the need for flexible model. Freshmen rely more on teachers' emotional support, structured guidance, and clearly defined limited choices, while senior-year students show a stronger inclination for autonomous exploration, expecting personalized learning paths, deeper technological integration, and strategic feedback. A detailed comparison of these differences has been integrated into the discussion section of Chapter 5 (see Section 5.3), directly informing the tiered strategies in the model for learners at different proficiency levels.

Post-Intervention Test Results

To preliminarily examine the effects of teaching practices aligned with the model's principles, Pearson correlation analysis was conducted on the data from Questionnaire C. The analysis focused on the feature of "the degree of integration between course content and real-world business practices."

The results (see Table 2) show that this variable is highly and significantly positively correlated with "satisfaction with diverse teaching methods" (r = .879, p < .01), "perceived improvement in Business English knowledge" (r = .846, p < .01), and "perceived enhancement in applied Business English skills" (r = .801, p < .01). This indicates that the more students recognize the practical integration of the course content, the higher their satisfaction with the teaching methods and the greater their self-reported learning gains. This provides preliminary positive evidence for the scenario-based and practice-oriented design focus emphasized in the "dual-track micro-learning" model.

Table 2
Correlations Between Perceived Practicality of Course Content and Other Key Variables (Post-intervention test, N = 110)

Variable	1	2	3	4
1. Course Content–Practical Integration	1			
2. Satisfaction with Teaching Methods	.879**	1		
3. Improvement in Business English Knowledge	.846**	.817**	1	
4. Improvement in Applied Business English Skills	.801**	.818**	.858**	1

Note. p < .01 (two-tailed).

Preliminary Discussion of Results

The data analysis results presented above support the main issues of this research from various perspectives. First, the universal needs identified in the pre-intervention test (scenario-based practice, feedback, and motivation) directly address part of Research Question 1 by illustrating the specific manifestations of the three SDT needs in the current context of online speaking learning. These needs translate into concrete strategies such as "providing scenario-based choices (autonomy)," "designing scaffolded tasks with immediate feedback (competence)," and "building collaborative communities (relatedness)."

Second, the stage-specific differences highlighted in the pre-intervention test reinforce the considerations underlying Research Questions 2 and 3. These differences necessitate that the teaching model possess flexibility and tiered characteristics to accommodate diverse learners, thereby providing teachers with more nuanced practical insights.

Finally, the highly significant correlations observed in the post-intervention test, while not constituting strict causal evidence, serve as a positive preliminary indicator. They align with Research Question 3, suggesting that instructional models grounded in SDT and learner needs, with an emphasis on practicality and interactivity, are closely linked to students' perceived learning outcomes and satisfaction. This strengthens confidence in the practical applicability of the model.

Cases of Dual-Track Micro-Learning for Key Speaking Scenes

This chapter aims to transform the previously established theoretical model into concrete and implementable teaching models. Two high-frequency and significant scenarios—business meetings and business negotiations—are selected. Adhering strictly to the three-need principles of Self-Determination Theory (SDT), the dual-track micro-learning schemes for each scenario are elaborated in detail. Each case will cover goal setting, dual-track activity flow, main resources, and key assessment points, thereby providing a comprehensive demonstration of the pathway from theory to practice.

Case 1: Business Conference Speaking

The crucial teaching objective for the business meeting scenario is to cultivate learners' ability to articulate viewpoints clearly, intervene in discussions politely, and respond effectively to challenges. This teaching model centers on "precise expression" and "collaborative interaction" as the focus of the dual-track model, aiming to establish cognitive norms through synchronous guidance and achieve personalized internalization via asynchronous practice.

Teacher-Guided Track

The 40-minute teacher-guided track for business conference speaking follows a three-phase instructional sequence, as illustrated in the figure 3 below. Phase 1 (Scenario Introduction, 10 minutes) establishes contextual understanding through video analysis and discussion. Phase 2 (Group Task Simulation, 20 minutes) facilitates practical application through role-play activities with real-time feedback. Phase 3 (Consolidated Feedback, 10 minutes) consolidates learning through issue summarization and self-assessment.

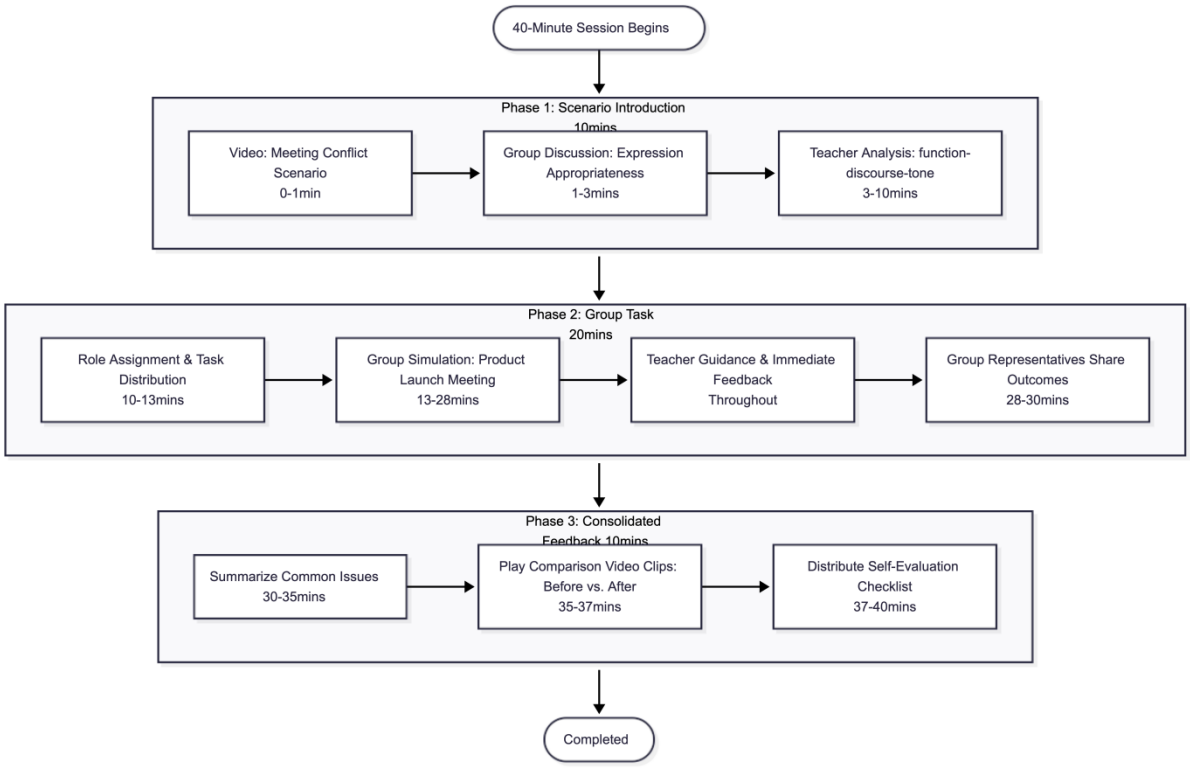

Figure 3. Instructional Flowchart: 40-Minute Teacher-Guided Track for Business Conference Speaking

Phase 1: Scenario Introduction and Language Focus (Approx. 10 minutes). The teacher first plays a short demonstration video of “conflicting viewpoints in a meeting” to present a typical conflict scenario. Subsequently, students are guided to focus on discussing the appropriateness of expressions used in the video. Building on this, the teacher systematically breaks down the linguistic forms, applicable contexts, and intonation features of functional expressions such as "adding viewpoints," "politely interrupting," and "clarifying information," thereby establishing a preliminary standard for understanding.

Phase 2: Collaborative Simulation and Practice (Approx. 20 minutes). Students engage in role-playing in groups to simulate a specific project progress meeting. The teacher provides differentiated “expression scaffolds” and task cards for different roles (e.g., moderator, presenter, questioner). During the simulation, the teacher circulates among the groups, offering immediate feedback that combines “affirmation and suggestions”, with a focus on guiding students to experience the communicative effects of different expression strategies.

Phase 3: Summarized Feedback and Meta-cognitive Development (Approx. 10 minutes). The teacher summarizes typical issues that arose during the simulation (e.g., inappropriate timing for interruptions, overly abrupt tone) and guides students to reflect through comparative analysis. Finally, a concise “Meeting Expression Self-Checklist” is provided to help students transform external feedback into self-assessment criteria, thereby consolidating their learning outcomes.

Student-Directed Track

Most students prefer to watch videos online as their self-education content than read the website page if they have the right to choose by themselves. Student-Directed Track (20 minutes after class) emphasizes the personalized internalization of skills in a relaxing environment, following a logic of “resource selection → deliberate practice → easy interaction”.

First, Resource Selection and Personalized Pathways. The platform provides diverse learning resource packages, such as a comparative video library (showcasing appropriate vs. inappropriate expressions), a fundamental sentence pattern handbook, and cultural tip cards. The system can recommend resources based on their performance, while students can also independently choose starting points according to their own weaknesses.

Second, Technology-Enabled Deliberate Practice. Using the platform’s AI speech analysis tool, students engage in recording exercises for specific tasks (e.g., “responding to unexpected challenges”). The system provides immediate feedback on pronunciation, fluency, and sentence structure usage. Students can repeat, compare, and revise multiple times, achieving precise improvement in a low-pressure environment.

Third, Community Interaction and Reflection. Students may choose to anonymously submit their best practice outcomes to the Cloud, receiving peer “likes” or positive feedback based on predefined tags (e.g., “logical clarity”, “natural tone”). This relaxing and easy interaction not only fulfills the need for relatedness but also offers diverse reference perspectives.

Case 2: Business Negotiation Speaking

The business negotiation scenario focuses on cultivating learners' abilities in strategic concession-making, clearly articulating terms, and resolving impasses through communication. The core of the model lies in deconstructing the logic of negotiation strategies through the teacher-guided track, while deepening the contextual application and adaptability of these strategies through the student-directed track. Communication strategies such as opening and ending a conversation, making requests and negotiation are required for employees at the workplace.

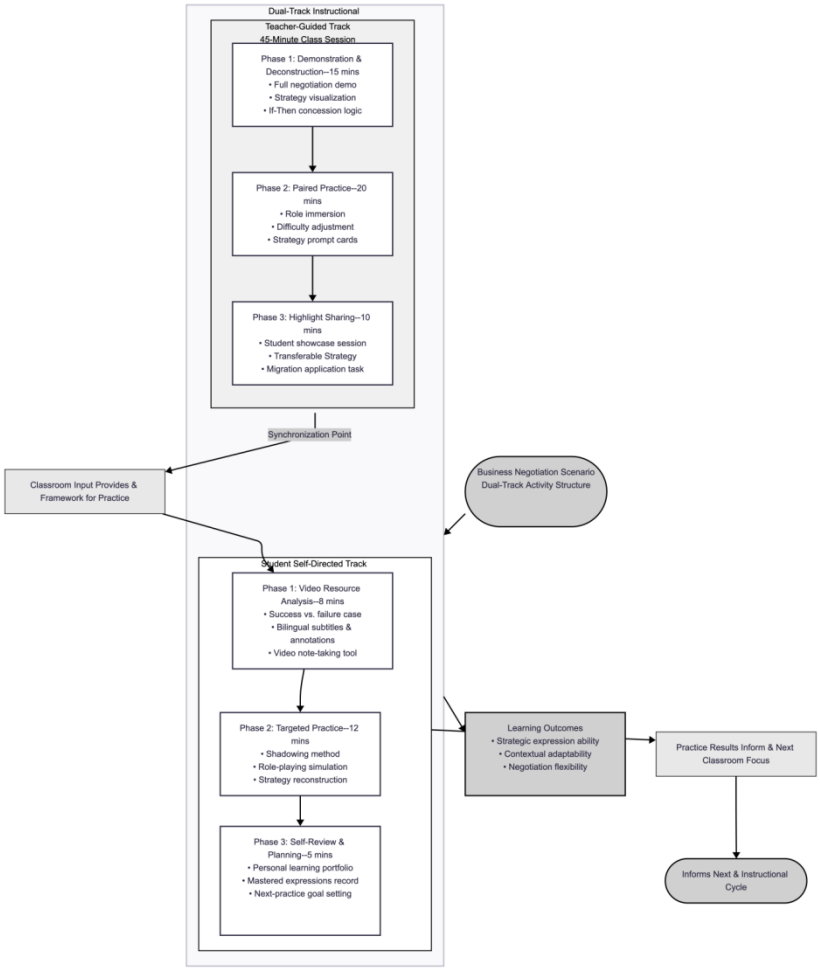

Figure 4. Dual-Track Activity Structure for Business Negotiation Speaking Instruction

The figure 4 above illustrates the integrated dual-track structure for business negotiation speaking instruction. The teacher-guided track (45-minute in-class session) provides structured input through demonstration, paired practice, and strategy sharing. The student-directed track (25-minute after-class session) enables personalized skill internalization through case analysis, targeted practice, and self-review. The synchronization points indicate how classroom input informs autonomous practice, while practice outcomes guide subsequent instructional focus, creating a continuous learning cycle.

Teacher-Guided Track

Teacher-Guided Track (45 minutes) unfolds around the sequence of “strategy unveiling – immersive practice – highlight transfer”, with a focus on constructing a cognitive model.

Strategy Demonstration and Logic Visualization (Approx. 15 minutes). The teacher demonstrates a complete negotiation dialogue to intuitively illustrate the three phases of "opening – bargaining – closing". Subsequently, using visualization tools such as a "strategy tree", the teacher systematically breaks down the timing and linguistic expressions of major concession strategies like "conditional" and "incremental" approaches, revealing the inherent "concession-exchange" logic in negotiations.

Immersive Role-Play Negotiation (Approx. 20 minutes). Students engage in one-on-one or group negotiation simulations centered on specific topics, such as "service contract renewal". The teacher provides roles for both parties, detailing necessary demands, concession ranges, and bottom lines, and incorporates "strategy hints" as learning scaffolds. During the process, the teacher can dynamically adjust the negotiation difficulty to accommodate students at different proficiency levels.

Strategy Extraction and Transfer (Approx. 10 minutes). High-performing groups are invited to showcase selected segments. The teacher guides students in collectively extracting transferable strategic highlights (e.g., "how to initiate with a cooperative tone", "how to reject with reasoned justification") and encourages students to immediately apply these strategies to another brief negotiation scenario, promoting flexible strategy utilization.

Student-Directed Track

Student-Directed Track (25 minutes after class) focuses on internalizing strategies through a process ranging from case analysis to active output.

First, Comparative Case Analysis and Note-Taking: Students independently watch a video library featuring both "successful" and "unsuccessful" negotiation cases. The platform annotates key strategic nodes and issues in the videos, and students can use embedded note-taking tools to autonomously summarize negotiation strategies of different styles, forming personalized "strategy notes". It is worth mentioning that "using captions when watching videos can be beneficial as they help build new vocabulary, facilitating creation of associations between the spoken and written forms of the words". It is important to encourage the coordinated development of listening, speaking, reading, and writing skills.

Second, Targeted Strategy Practice. The online platform offers three practice modes: "shadowing", "role immersion", and "strategy reconstruction". For example, in "strategy reconstruction", students are required to rewrite and optimize a failed negotiation segment, and the system provides evaluative feedback from dimensions such as "strategic effectiveness" and "appropriateness" to guide deeper learning.

Finally, Quantitative Review and Planning. In their personal learning dashboard, students briefly record mastered strategic expressions, current difficulties, and practice goals for the next stage. Based on this, the online platform provides personalized learning resource packages and can send review reminders after certain intervals to promote long-term memory retention and continuous improvement.

Discussion

This section aims to provide an in-depth examination and discussion of the SDT-based dual-track micro-learning model. The focus will revolve around the validation support for the

model derived from prior empirical findings, the specific implications arising from them, as well as the limitations of this research and future directions. It aims to construct a comprehensive argumentative loop at both the theoretical and practical levels.

Model Validation: Insights from Surveys

This model is not built in isolation. Rather, its concepts and structure have received preliminary support and validation from earlier empirical data. As shown in the analysis of Questionnaire A and Questionnaire B in Chapter 4 (see Section 4.5.1), learners' demands in online Business English speaking learning highly align with SDT theory and exhibit clear stage-specific differences.

First, the commonality of needs validates the design pillars. Students' widespread and strong demand for "scenario-based practice", "immediate professional feedback", and "motivational support" directly confirms the necessity and correctness of this model's key pillars: "scenario-based micro-tasks", "dual-track feedback mechanisms", and "motivation-driven model".

Second, the stage-specific differences highlight the model's flexibility. Data analysis reveals that freshmen, in terms of autonomy, require more "guided limited choices"; in terms of competence, they rely more on teachers' immediate affirmation. And in terms of relatedness, they place greater emphasis on classroom interaction and teacher encouragement. In contrast, senior-year students demonstrate higher-order needs for open exploration, technology integration, strategic feedback, and practice communities. This differential profile does not indicate that the model requires two separate designs. Instead, it strongly validates the flexible logic advocated by this model. It demands that the dual tracks—particularly the student-directed track—provide gradient support from "structured choices" to "open exploration". It also requires the feedback system to evolve from "emotional encouragement" to "strategic analysis", and the development of a sense of belonging to naturally extend from "classroom belonging" to "Cloud communities".

Model Implications: Translating Insights into Action

Based on the aforementioned validation, the practical implication of this model for teaching lies in facilitating a dynamic progression from "supportive guidance and structured autonomy" to "catalytic guidance and open autonomy". Specific teaching strategies must be tailored to the academic stage. The following table 3 systematically summarizes the differentiated emphases in dual-track model and technology integration for learners at different stages:

Table 3
Differentiated Dual-Track Micro-Learning Teaching Strategies for Learners at Different Stages

Dimension	**For Freshmen (Entry/Adaptation Stage)**	**For Advanced Students (Deepening/Application Stage)**
Focus in Teacher-Guided Track	1. Emotional Motivation and Immersing Environment Building: Employ the "sandwich feedback method" and establish fixed, supportive virtual business teams. 2. Foundation model Establishment: Emphasize standardized expression demonstrations for single scenarios, providing fill-in-the-blank or substitution exercises with scripts or keywords.	1. Strategy Guidance and Meta-cognitive Development: Offer analytical feedback to guide strategic reflection. Organize discussions and debates based on complex real-world cases. 2. Complex Scenario Integration: Introduce intertwined multi-scenario and non-standard situations (e.g., handling emergencies), designing "problem-solving" tasks.
Focus in Student-Directed Track	1. Structured Imitation and Practice: Provide sentence-by-sentence shadowing videos and pronunciation tools with speech waveform comparisons, featuring clear task steps and single objectives. 2. Intensive Positive Feedback: AI feedback focuses on precise alignment of pronunciation and basic sentence structures, supplemented with positive reinforcement such as "progress badges".	1. Exploratory Practice and Strategy Reconstruction: Offer "success vs. failure" case libraries for independent analysis, incorporating in-depth output tasks like role creation and strategy rewriting. 2. Analytical Feedback and Visualization: AI feedback emphasizes appropriateness of strategies and logical coherence, providing data dashboards for tracking personal skill development.
Integration by Technology	Role: Familiar Practice Partner and Motivator Functions: Intelligent speech shadowing comparison, contextual vocabulary flashcards, gamified basic sentence pattern practice. Interactions are simple, with feedback focused on encouragement and clear corrections.	Role: Personalized Strategy Advisor and Simulation Opponent Functions: AI scenario simulation (adjustable difficulty and style), in-depth language appropriateness analysis reports, personalized learning path recommendations. Supports parameter customization and multi-dimensional data analysis.

Conclusion

As the concluding section, this chapter summarizes the findings of the research, distills key insights, and outlines future research directions, with the aim of offering further perspectives for the development of online Business English speaking teaching.

Summary of Key Findings

Guided by Self-Determination Theory (SDT) as its theoretical foundation, this research addresses prevalent issues in online Business English speaking speaking, including insufficient interactivity, weak motivational stimulation, and fragmented skill training, by constructing a comprehensive dual-track micro-learning teaching model.

Within this model, the distinct roles of the teacher-guided track and the student-directed track are clearly defined. The teacher-guided track focuses on motivation activation and directional guidance, utilizing functions such as scenario demonstrations, interactive tasks, and targeted feedback to provide direction and stimulate motivation for students' speaking skills learning. The student-directed track aims at skill internalization and personalized enhancement, employing approaches like video resource learning, low-pressure practice, and self-review to help students consolidate acquired skills and achieve personalized development.

Furthermore, the research proposes dual-track teaching strategies based on the three basic needs of SDT: to fulfill the need for autonomy, the teacher-guided track offers limited choices, while the student-directed track grants greater autonomy in selection; to address the need for competence, scaffolded tasks and micro-achievement badges are designed; to meet the need for relatedness, virtual business teams are formed and anonymous sharing zones are established. Practical application plans of the model are demonstrated through concrete cases in two high-frequency scenarios—business meetings and business negotiations—verifying its feasibility and practicality.

Additionally, through a questionnaire survey involving more than 100 Business English undergraduates, this research further clarifies the challenges and psychological needs of learners in speaking. This provides empirical support from the learner's perspective for the dual-track micro-learning model, thereby enhancing the practical relevance and application value of this research.

Practical Implications

The findings and the operating mechanism of the dual-track model offer practically useful insights for teachers, curriculum designers, and educational technology facilitators working in online Business English instruction. Rather than proposing a one-size-fits-all template, the implications are structured around three core practical competencies that practitioners need to develop.

First, teachers should recognize that the dual-track model is not a static structure but a responsive system that evolves with the learner. The research indicates that lower-level learners, such as freshmen, prioritize psychological safety and structural clarity, whereas advanced learners require strategic autonomy and engagement with complex tasks. Consequently, practitioners are advised to adapt their teaching support accordingly. For

foundational stages, the priority lies in the role of an "emotional safety builder," focusing on reducing communication anxiety through highly structured, scaffolded tasks in the teacher-guided track, while the student-directed track should offer simplified, imitation-based resources with technology offering immediate positive feedback. For advanced stages, teachers should transition to the role of a "strategy guide" and "complex scenario designer," shifting the teacher-guided track toward debriefing complex case studies such as negotiations with conflict, and curating the student-directed track to feature open-ended, exploratory tasks where technology provides analytical, corrective feedback rather than mere encouragement.

Second, effective implementation hinges on the deliberate design of the two tracks' content, requiring teachers to move beyond intuitive task selection to a structured design approach. In terms of resource curation, practitioners should develop a tiered resource library where materials for the student-directed track are explicitly graded from structured imitation, such as model dialogues with blanks to fill, to exploratory creation, such as simulated client meetings with minimal scripts, allowing learners to self-select materials that match their readiness. In terms of feedback provision, teachers should adopt a dual-level feedback strategy that aligns with the purpose of each track. In the teacher-guided track, the emphasis should be on formative, relational feedback, such as the sandwich technique of positive-critical-positive, to build confidence and correct form, while in the student-directed track, the focus should shift toward technology-mediated analytical feedback, such as AI-generated reports on fluency or word choice, to foster self-correction and metacognitive awareness.

Third, the model's effectiveness relies on the teacher's ability to act as a regulator who dynamically adjusts the balance of the two tracks, a capacity that requires developing data literacy. Teachers should utilize data from the student-directed track, including task completion rates, time spent, and automated performance scores, to diagnose class-wide or individual weaknesses, and then use these insights to recalibrate the next teacher-guided session. For instance, if data shows that most students struggle with the skill of interrupting politely in the student-directed negotiation simulations, the teacher should pivot the following guided session to address this specific micro-skill, thereby creating a closed-loop where autonomous practice informs guided instruction and vice versa. Practical resources, including a tiered teaching strategy table as presented in Section 5.3.2 and scenario-based case templates, are provided as immediate reference points for practitioners to adapt and implement the model to their classes.

Limitations and Future Directions

This research has achieved preliminary results in constructing and initially validating the dual-track micro-learning model. However, due to limitations in research design and scope, several key shortcomings remain, which also point the way for future research.

The main limitations are reflected in three aspects. First, regarding the research sample, all participants were from the same college, which, while ensuring internal validity, restricts the generalizability of the conclusions. The findings' applicability across different regions, cultural contexts, and institution types remains to be tested. Second, in terms of research methodology, the data primarily relied on learners' self-reports, and the post-intervention test used for effect validation was limited to correlation analysis. While this approach can

reveal associations between variables, it falls short of establishing causal relationships between teaching models and learning outcomes. Furthermore, it does not directly measure objective changes in students' speaking proficiency, such as fluency or complexity. Lastly, regarding the model itself, its current case studies focus on meeting and negotiation scenarios and have yet to cover the full spectrum of business communication. Moreover, its effective implementation places certain demands on technological tools and teachers' teaching capabilities.

Based on these limitations, future research could explore the following directions for deeper investigation. First, cross-contextual validation and comparative studies should be conducted to test and adapt the model's principles in a broader range of educational environments. Second, and most critically, rigorous experimental studies should be advanced. By incorporating control groups, pre-post testing, and long-term tracking, a systematic collection of both subjective and objective data would empirically examine the model's actual impact on speaking proficiency and motivation levels. Finally, efforts could be directed toward expanding the model and providing implementation support. On one hand, the model could be extended to other business oral communication scenarios to form a more comprehensive system. On the other hand, the development of supporting tools for teachers, such as teaching aids or adaptive platforms, could be explored to lower implementation barriers and leverage learning analytics for dynamic optimization.

Theoretical and Contextual Contributions

This research makes distinct contributions to both theory and practice, advancing the existing body of knowledge in online Business English speaking instruction. These contributions can be understood through two primary dimensions: the theoretical advancement of existing motivational frameworks and the contextual enrichment of online pedagogy for specialized professional purposes.

At the theoretical level, this research extends the application of Self-Determination Theory from a general motivational framework to a domain-specific instructional model. While prior SDT research in language education has primarily focused on explaining the importance of autonomy, competence, and relatedness at a principled level, this study systematically operationalizes these three abstract psychological needs into concrete, implementable teaching strategies within the dual-track micro-learning context. For instance, the need for autonomy is translated into a graded choice mechanism ranging from limited options in the teacher-guided track to open resource selection in the student-directed track. The need for competence is addressed through scaffolded task design coupled with a dual-level feedback system that combines immediate emotional encouragement with delayed analytical feedback. The need for relatedness is fulfilled through the establishment of virtual business teams in synchronous sessions and anonymous sharing communities in asynchronous settings. This clear needs-to-strategies transformation pathway not only provides an empirical case for integrating motivational theories into micro-level instructional design but also offers a replicable analytical model for researchers seeking to bridge the gap between abstract psychological principles and concrete pedagogical interventions.

Beyond the operationalization of SDT, this research contributes a novel theoretical construct to the field of online speaking pedagogy: the integrated motivation-design-

competence dual-track synergistic model. Moving beyond the simplistic juxtaposition of teacher guidance and student autonomy that characterizes much of the existing literature, this study explicitly defines and elaborates on the dynamic synergistic logic and closed-loop operational mechanism of the two tracks in an online context, conceptualized as a guidance-internalization-reinforcement cycle. This model offers a fresh theoretical lens for addressing the perennial tension between insufficient interaction and ineffective practice that plagues online speaking instruction. Furthermore, it provides a transferable analytical framework for balancing the universal challenge in technology-enhanced educational environments: the need to maintain structured teaching while simultaneously enabling personalized learning pathways.

At the contextual level, this research addresses a significant gap by tailoring the SDT-based model specifically to the unique demands of online Business English speaking instruction, a context characterized by professional communication with real-world stakes, scenario-specific language use, and the physical distance between teachers and students in online settings. By developing and illuminating the model through two high-frequency business scenarios, namely meetings and negotiations, this study provides contextualized evidence of how motivational principles can be adapted to authentic professional communication settings. Additionally, the empirical findings from pre-intervention surveys with 136 participants, reveal developmentally specific student needs across grade levels, distinguishing between freshmen and advanced students. These findings offer nuanced insights into how the model's inherent flexibility can accommodate students at varying developmental stages, thereby enhancing its ecological validity. Taken together, these contextually grounded contributions not only strengthen the practical relevance of SDT but also inform the broader scholarly discourse on designing effective online education for specialized professional purposes in the post-pandemic era.

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