

FACTORS INFLUENCING ADULT EFL CHINESE STUDENTS' LINGUISTIC COMPETENCY AND STRATEGIES FOR ITS ENHANCEMENT: A PEDAGOGICAL PERSPECTIVE BASED ON THE DECLARATIVE/PROCEDURAL MODEL OF LANGUAGE

Qizhe Hu

Student of Doctor of Philosophy (Linguistics), Suan Sunandha Rajabhat University

E-mail: s65584952001@ssru.ac.th, heatyhuma@163.com

Suwaree Yordchim

E-mail: suwaree.yo@ssru.ac.th

Suphat Sukamolson

E-mail: ssuphatz@gmail.com

Abstract

This study aims to investigate the manageable factors influencing adult EFL Chinese students' linguistic competency and to construct instructional innovations based on the Declarative/Procedural Model of Language. The five core factors examined are motivation, attitude, exposure, environment, and cognition. A mixed-methods approach was adopted, integrating both quantitative and qualitative instruments, using questionnaires, interviews, classroom observations, and language learning logs. A one- group pretest-posttest design was applied to assess the effectiveness of instructional innovations developed according to the theoretical framework. The study also evaluates the effectiveness through effect size and effectiveness indexes, aligning with China's Standards of English Language Ability (CSE). The results provide evidence that the five manageable factors play significant roles in shaping linguistic development and that innovations grounded in the Declarative/Procedural Model contribute to meaningful improvement in language learning outcomes. Furthermore, students expressed a high level of satisfaction with the instructional design, activities, and learning experiences.

Keywords: Linguistic Competency, Adult EFL Chinese Students, Declarative/Procedural Model

Introduction

In the context of globalization and rapid economic transformation, English has become a pivotal tool for international communication, career advancement, and academic development. For adult learners in China, especially those engaged in continuing education, acquiring linguistic competency in English is not merely a language goal but a strategic need for professional mobility and lifelong learning. Despite years of English education, many adult EFL (English as a Foreign Language) Chinese students continue to struggle with effective language use, particularly in applying grammatical rules, expressing meaning fluently, and transferring classroom knowledge to real-world communication. Numerous studies have examined the factors influencing second language acquisition, but many of them focus primarily on children or adolescent learners, often neglecting the unique cognitive, motivational, and environmental characteristics of adult EFL learners. Moreover, traditional grammar-based instruction often emphasizes declarative knowledge (rules and facts) at the expense of procedural knowledge (language use in context), which may hinder the internalization and automatization of linguistic competence. Besides, advancements in technology allow for learning anytime and anywhere by using mobile apps. Studies indicate mobile apps can enhance vocabulary learning (Yordchim, 2024).

This study is grounded in the Declarative/Procedural Model of Language proposed by Ullman (2001, 2004), which distinguishes between the memory systems involved in learning facts (declarative memory) and those used for skill-based, automatic processing (procedural memory). Applying this model in EFL contexts provides a promising framework for rethinking instructional design and targeting both rule understanding and language automatization. Complementing this model, adult learning theory (Knowles, 1984) emphasizes self-directedness, practical relevance, and internal motivation—factors that are highly relevant to adult Chinese learners who must balance language study with work and personal responsibilities.

Given these considerations, this study addresses a critical gap in EFL pedagogy by investigating five manageable factors that may influence adult learners' linguistic competency: motivation, attitude, exposure, learning environment, and cognition. By identifying the relationships among these variables and designing instructional innovations aligned with the Declarative/Procedural framework, this research aims to enhance the quality and effectiveness of language instruction for adult learners in China.

This study aims to explore the impact of five manageable factors on adult EFL Chinese students' linguistic competency, develop instructional innovations based on the Declarative/Procedural Model, and evaluate their effectiveness and learner satisfaction.

Research Objectives

The research is mainly to explore the influence of five controllable factors on adult English and Chinese learning the language proficiency of students.

Scope of the Research

1. Content Scope

The content scope of this study is centered on three main areas, namely: (1) Three dependent variables: students' existing linguistic competency, improved linguistic competency, and satisfaction levels. (2) Five independent variables: learning motivation, learning attitude, language exposure, learning environment, and cognitive abilities, and (3) Instructional innovations. It is a set of teaching interventions specifically constructed to enhance adult learners' linguistic competency based on the principles of the Declarative/Procedural Model of Language.

2. Population Scope

This study targets adult Chinese EFL students enrolled in continuing education departments of higher education institutions. These learners, typically situated in adult education divisions such as continuing education colleges or night schools, are engaged in English study to improve their language proficiency for career development or personal growth.

The selected population aligns with Knowles' (1984) adult learning theory, which highlights the self-directedness, experiential learning foundation, and intrinsic motivation typical of adult learners. Most participants already possess a foundational level of English, such as basic grammar, vocabulary, and oral communication skills, yet continue to face challenges in areas like reading comprehension, writing proficiency, and literature interpretation.

3. Variable Scope

This study examines both independent and dependent variables related to linguistic competency and the effects of instructional innovations based on the Procedural Model of Language.

Independent Variables include:(1) Learning Motivation: intrinsic and extrinsic

drivers affecting effort and achievement in language acquisition, (2) Learning Attitude: students' beliefs and emotional responses toward English learning, (3) Exposure to the Language: frequency and intensity of contact with English in daily life (e.g., media, interactions), (4) Learning Environment: quality of instruction, classroom atmosphere, and learning resources, and (5) Cognitive Abilities: mental faculties such as memory, reasoning, and comprehension that influence language performance.

Dependent Variables include:

(1) Existing Linguistic Competency: students' initial language ability before intervention, encompassing grammar, vocabulary, and oral/written proficiency, (2) Improved Linguistic Competency: gains in language performance post-intervention, measured through pre- and post-tests, and (3) Satisfaction Levels: students perceived value and satisfaction with the instructional innovations, in terms of content, design, activities, and outcomes.

Literature Review Summary

Before conducting the research, it is essential to gain an overall understanding of the existing relevant studies to clarify the starting point of the research. The literature reviews the relevant literature on linguistic competence in EFL learning, with a particular focus on adult Chinese EFL students. The discussion explores the impact of linguistic competence on learning motivation, learning attitude, and the exposure to the language, learning environment, cognitive abilities highlight potential pathways for enhancing linguistic skills.

Research Methodology

1. Research Methodology

This study adopts a mixed-methods research design that integrates both quantitative and qualitative approaches to examine the linguistic competency of adult EFL Chinese students and to evaluate the effectiveness of instructional innovations based on the Declarative/Procedural Knowledge Model. The rationale for this design is grounded in the need to explore both measurable outcomes and in-depth learner experiences, ensuring a comprehensive understanding of the influencing factors and instructional impact.

The quantitative component includes structured surveys, semantic differential scales, and pretest-posttest assessments analyzed through statistical methods such as correlation, regression, and t-tests. The qualitative component comprises classroom observations, language learning diaries, and semi-structured interviews, allowing for rich contextual insights into students' attitudes, learning environments, and cognitive engagement.

The study was conducted in two phases:

Phase 1: Identification and analysis of five manageable factors (motivation, attitude, exposure, environment, and cognition) influencing linguistic competency.

Phase 2: Implementation and evaluation of a 12-week instructional intervention based on the Declarative/Procedural Model.

2. Research Steps

The research followed a systematic sequence of seven steps to ensure methodological rigor and coherence. First, a comprehensive literature review and theoretical framework development were conducted, drawing on foundational theories such as Gardner's Second Language Acquisition Motivation Theory and Ullman's Declarative/Procedural Model, alongside existing studies on adult EFL learners' linguistic competency. Second, the process of instrument construction and validation involved designing multiple data collection tools, including surveys, observation checklists, semantic differential scales, and interview guides, which were validated through expert review, Item-Objective Congruence (IOC) testing,

and exploratory factor analysis (EFA) to ensure their reliability and validity. Third, sample selection and grouping were carried out using stratified random sampling to recruit 320 adult students from Fudan University, evenly distributed across 8 classes, all of whom participated in both phases of the study. Fourth, baseline data collection was performed using instruments aligned with China's Standards of English Language Ability (CSE), evaluating students' initial proficiency in listening, speaking, reading, writing, and grammar. Fifth, a 12-week instructional intervention based on the Declarative/Procedural Model was implemented, incorporating task-based activities, reflective writing exercises, peer interactions, and scaffolded procedural practice to enhance language acquisition. Sixth, posttest and satisfaction evaluation involved reassessing students' linguistic performance using the same tools, alongside a satisfaction survey measuring perceptions of the instructional content, design, activities, and outcomes. Finally, in the seventh step, data analysis and interpretation were conducted using both quantitative and qualitative methods to comprehensively examine the impact of influencing factors and evaluate the effectiveness of the instructional intervention.

3. Data Collection

The data collection process was structured into two distinct phases to address the dual objectives of this study. In Phase 1: Exploring Influencing Factors, multiple instruments were employed to examine five key dimensions: motivation, attitude, exposure, environment, and cognition. Surveys were administered to measure these dimensions quantitatively, while a semantic differential scale was used specifically to assess the perceived impact of motivation. Additional tools included observation checklists to monitor learning behaviors and engagement in classroom settings, language logs to capture students' self-reported exposure to English in daily life, and classroom-based cognitive assessments targeting problem-solving and reasoning abilities. Interviews with both teachers and students provided further qualitative insight into classroom atmosphere, peer interaction, and instructional support.

In Phase 2: Intervention Evaluation, a range of tools was used to assess the effectiveness of the instructional innovations. These included pre- and post-intervention sub-surveys for students to self-evaluate their language skills (e.g., reading, writing, speaking), rubric-based performance tasks to assess fluency, grammar, and accuracy, and a student satisfaction survey covering four key areas: content, activities, instructional design, and outcomes. Learning logs and reflective journals were also collected to explore emotional responses and strategy use throughout the intervention. All data collection instruments were aligned with the China's Standards of English Language Ability (CSE) to ensure the consistency, relevance, and comparability of language proficiency assessments across the study.

4. Data Analysis

A combination of descriptive and inferential statistical methods was employed to analyze the collected data in alignment with the research objectives. Descriptive statistics were used to summarize participants' demographic information, language exposure patterns, and overall survey scores. Pearson correlation analysis was applied to explore the strength and direction of relationships between key influencing factors and students' linguistic competency. Multiple regression analysis was conducted to identify the predictive power of independent variables on language outcomes. To evaluate the effectiveness of the instructional intervention, paired sample t-tests were used to compare pretest and posttest scores, while effect size (Cohen's *d*) was calculated to assess the magnitude of performance improvement. Additionally, ANOVA and Chi-square tests were utilized to examine subgroup differences in terms of motivation, cognitive ability, and satisfaction levels. For qualitative data, thematic analysis was carried out on interview transcripts, classroom observation notes, and student learning logs to

identify recurring themes related to motivation, attitude, engagement, and environmental support. Finally, triangulation was employed to cross-validate findings by integrating evidence from surveys, observations, interviews, and diaries, thereby enhancing the reliability and validity of the results. Collectively, these analytical strategies provided a comprehensive assessment of both the impact of influencing factors and the effectiveness of the instructional innovation.

Research Results

Influence of Five Manageable Factors on Linguistic Competency

The analysis confirmed that five key factors—learning motivation, learning attitude, exposure to the language, learning environment, and cognitive abilities—have significant predictive power over Adult EFL Chinese Students' linguistic competency. Multiple regression analysis revealed that all five variables were statistically significant ($p < 0.001$), with motivation ($B = 0.3308$) showing the strongest effect, followed by cognitive ability ($B = 0.2766$), language exposure ($B = 0.2261$), learning attitude ($B = 0.1944$), and learning environment ($B = 0.1199$). The model's adjusted R^2 was 0.775, indicating that 77.5% of the variance in linguistic competency could be explained. These findings validate the effectiveness of selecting these five manageable factors as primary predictors of linguistic outcomes.

Conclusion and Discussion

The findings of this study confirm that the linguistic competency of adult EFL Chinese students was shaped by a complex interaction of five key factors: learning motivation, learning attitude, language exposure, learning environment, and cognitive ability. These variables do not function independently but are interrelated and collectively influence both the development and application of linguistic knowledge.

Learning motivation and attitude are regarded as important but unstable influencing factors. Although students generally show a positive tendency towards English learning, their motivations are mainly extrinsic motivations driven by academic or career-related goals. However, the intrinsic motivation closely related to long-term participation and self-regulating learning seems to be less developed. This difference indicates that although learners may be goal-driven, they may find it difficult to maintain effort and perseverance in the absence of direct external rewards. Emotional commitment and deep interest are key to language endurance, but they have not been fully developed in many adult learners.

In conclusion, the results emphasize that language ability is a function of emotional preparation and cognitive ability. Therefore, teaching strategies must simultaneously cultivate motivation, provide meaningful engagement, foster a stimulating environment, and support the development of cognitive-language integration.

Recommendations

Enhancing motivation through goal-oriented learning and autonomous integration is crucial for effectively improving the language proficiency of adult English students in China. It is of vital importance to address the sustainability of motivation by integrating learning goals with students' personal, academic and professional aspirations. Teaching should include goal-setting activities, allowing students to determine short-term language goals (such as mastering specific word sets and improving fluency in specific contexts) and long-term goals (such as passing proficiency tests and applying for jobs that require English communication). Furthermore, integrating learners' autonomy into classroom practice can promote continuous participation. For instance, teachers can adopt a "selection board", allowing students to choose

from a series of oral or writing tasks based on their own interests. In writing tasks, students can choose the type or audience (such as formal letters, personal blogs, product reviews), while in oral activities, they can offer their personal opinions or thoughts on familiar topics. It is of vital importance that students should have space for self-expression, allowing them to bring their cultural identity, emotional perspectives and real-world concerns into classroom conversations. This sense of ownership deepens emotional investment and transforms language learning from an obligation into personal empowerment. Digital portfolios, reflection logs and peer feedback logs can be implemented to help students track their progress and express their voices, thereby strengthening motivation and metacognitive awareness. Cultivating positive attitudes through reflective teaching methods and emotional scaffolds can strengthen the learning attitudes of adult English students in China. Teachers should adopt reflective teaching methods and encourage students to explore the value, purpose and emotional trajectory of language learning. "Structured Reflective activities - such as weekly study logs, self-assessment forms or "emotion checks" in class - help students recognize personal growth, redefine challenges as opportunities, and build a resilient mindset. Teachers can further implement emotional support strategies, such as empathetic feedback and emotional cues, to verify students' efforts and reduce anxiety.

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