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The mediating effect of attitude towards writing on the relationship between instructional approach and syntactic complexity in argumentative essays of TESOL learners in China: Moderating role of writing task complexity

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Abstract: Non-native English speakers, especially in countries like China where English is taught as a second language, value English proficiency. In TESOL contexts, writing proficiency is crucial to language learning. To design effective instructional methods and improve students' writing skills, educators and researchers must understand writing performance factors. The goal of this research is to look into the relationship between instructional technique (process-based teaching, direct instruction, and hybrid instruction) and syntactic complexity in argumentative essays written by TESOL students in China. With the mediating role of attitude towards writing and the moderating influence of writing task complexity in this connection. This study enlisted the participation of 368 TESOL students from China. Participants were assigned to one of three teaching groups based on a random draw: process-based instruction, direct instruction, or hybrid training. Students were then given the option of completing an argumentative writing exercise of high or low complexity. This study found that the instructional approach affects argumentative essay syntactic complexity. Attitude towards writing also mediated the relationship between instructional technique and syntactic complexity. The high-complexity writing assignment had a stronger instructional style effect on syntactic complexity. This study shows that attitude towards writing and writing task complexity must be considered when developing instructional approaches to increase syntactic complexity in argumentative essays of Chinese TESOL learners. This study also stresses the importance of considering the complexity of the writing assignment when teaching TESOL students to write.

Keywords: *Attitude towards writing, Instructional approach, Syntactic complexity, TESOL, Writing task complexity.*

1. Introduction

English has evolved into a global language, and it is widely used for communication in many countries worldwide. As a result, teaching English as a second or foreign language has become a required component of many educational systems (Lake & England, 2023). TESOL (Teaching English to Speakers of Other Languages) students in China are no exception, and they frequently struggle with writing argumentative essays because of the grammatical discrepancies between Chinese and English. As a result, it is critical to explore the relationship between instructional methodologies and syntactic complexity in TESOL students' argumentative writings in China (Ducker, 2022).

In today's globalized world, the English language has gained increasing significance. As the dominant language of international communication, it plays a crucial role in various domains, including education, business, technology, and culture. Proficiency in English has become a valuable asset for individuals seeking academic and professional success, particularly in countries like China, where English is taught as a second or foreign language (Liu, Sun, & Tu., 2019). English language

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learning holds immense importance in the Chinese context due to its potential impact on students' academic and career prospects. Effective communication in English opens doors to educational opportunities abroad, facilitates international collaborations, and enhances employability in multinational corporations. Recognizing these advantages, the Chinese educational system places significant emphasis on English language education (Panavas et al., 2022).

Chinese English and culture training using TESOL. ESL teachers with experience boost students' English fluency, confidence, and proficiency (Christodoulakis, Carulla, & Adbo, 2021). Student benefits from TESOL are many. These activities improve language and confidence. TESOL emphasizes academic and communicative skills like listening, speaking, reading, and writing (P. Zhang, 2022). Writing, conversations, and interactive exercises teach language in TESOL classes. These opinion-based exercises help students learn language. Comprehensive language skills are stressed in TESOL programmes to teach English communication (Christodoulakis, Carulla, & Adbo, 2021). TESOL teachers improve with study tools. These include textbooks, audiovisuals, online resources, and language learning software (Zollo, 2019). These tools teach students diverse language scenarios. Teachers must create curriculum that meets students' needs and goals. A vibrant class demands customized programming. Many methods and resources help TESOL students learn English (Yenkimaleki, van Heuven, & Soodmand Afshar, 2022). Multimedia, interactive activities, and personalized curricula make learning dynamic. This is needed to engage language learners. Online resources and language learning technologies make TESOL courses more engaging (Zollo, 2019). TESOL programs in China boost English proficiency, confidence, and fluency. TESOL classes teach English through listening, speaking, reading, and writing. Numerous study aids, materials, and curricular concepts offer a dynamic and engaging learning environment for Chinese language learners.

TESOL in China and English language instruction worldwide are booming. China has stressed the need of English language teachers due to globalization and trade. Therefore, more Chinese students are pursuing TESOL classes to improve their English. China needs English teachers, therefore online TESOL, study abroad, and classroom instruction are popular (Qiu & Luo, 2022). The growing Chinese TESOL business lets local and foreign professors improve Chinese students' language skills. Recently, more TESOL teaching strategies have been used for writing. Process-based, direct, and hybrid teaching are common (Catala, Gijlers, & Visser, 2023). Direct training stresses writing, process-based learning encourages revising, and hybrid instruction does both. Writing requires complex sentence structure (Krause et al., 2023). Syntactic complexity improves writing, hence argumentative essay complexity teaching tactics should be investigated. Writing attitudes affect students (Yoon, 2021). Positive writing attitudes improve kids' writing. Negative people may work poorly due to lack of motivation. Written difficulty moderates instructional style and grammatical complexity in argumentative essays (D'Alessio, Wilson, & Jaichenco, 2019). sophisticated writing may require sophisticated syntactic structures. Recognizing these links helps teachers enhance students' writing curricula.

China emphasizes English language acquisition; thus, teachers must apply numerous methods. To meet Chinese students' changing demands, mix online and study abroad programs. Teaching methods, grammatical complexity, writing attitude, and task difficulty are interrelated, necessitating a thorough and flexible approach. Addressing these characteristics helps teachers teach Chinese students English and prepare them for global communicationTESOL schools may award credits, certifications, or recognition to motivate graduates. By showing language proficiency, these incentives increase students' confidence and English learning (Xu, Fan, & Luo, 2021). TESOL students benefit from credits, certifications, and recognition. These awards reward programming and language skills. Credits or certificates recognise student English learning. Rewards promote student confidence. Credentials prove English proficiency. Student English confidence encourages its use outside of class. Material rewards inspire. Despite the efforts in TESOL instruction, there is a research gap concerning the factors that influence students' writing performance in TESOL classes, particularly in the context of argumentative essays. While instructional approaches, such as process-based instruction, direct instruction, and hybrid instruction, have been widely employed in TESOL

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classrooms, their specific impact on syntactic complexity in argumentative essays has not been extensively explored (Fathi, Derakhshan, & Torabi, 2020). Moreover, learners' attitudes towards writing have been recognized as crucial factors influencing their writing performance. However, the mediating effect of attitude towards writing on the relationship between instructional approaches and syntactic complexity in TESOL learners' essays remains largely unexplored. Additionally, the moderating role of writing task complexity in this relationship requires further investigation.

The aim of this study is to investigate the relationship between instructional approach (process-based instruction, direct instruction, and hybrid instruction) and syntactic complexity in argumentative essays of TESOL learners in China while examining the mediating effect of attitude towards writing and the moderating role of writing task complexity. The study will advance TESOL argumentative essay instructional method and syntactic complexity research. These goals guide research:

The study compares process-based, direct, and hybrid argumentative essay syntax teaching. This study studies writing outcomes to determine syntactic complexity-boosting training options.

To determine if TESOL learners' writing attitudes moderate teaching style and syntactic complexity. Instructors can improve training by understanding how student attitudes affect results.

Our study will examine how writing task complexity moderates instructional strategy-syntactic complexity. The study examines how task complexity affects teaching approaches to show their dynamic interplay.

TESOL argumentative essay literature now includes instructional strategies' effects on grammatical complexity. It fills knowledge gaps by studying writing attitude and task complexity (Duman, Yalçln, & Erçetin, 2021).

This study impacts Chinese TESOL teachers. Learning how instructional methods affect writing can assist teachers improve students' syntactic complexity. TESOL teachers can use data to improve students' writing.

The study may impact TESOL teaching methodology research. This research enhances language training, particularly writing. The study gives educators and researchers evidence-based TESOL teaching improvements.

2. Literature Review

2.1. Process-Based Instruction and Instructional Approach

Process-based education prioritises learning steps above the final outcome (Pratsri, Nilsook, & Wannapiroon, 2021). This method promotes active learning, feedback, and reflection. Process-based training prioritises learning over results. Methodology guides pupils through learning, encouraging active participation. This contrasts with methods that focus on the result without understanding how it was accomplished. Process-oriented students employ deep processing more, according to Broemmel, Rearden, and Buckner (2021). Learning product advocates like surface processing. Process-based training enhances learning and engagement. Knowing how learning works promotes comprehension and connection. Yu, Xu, Jiang, and Chan (2020) found process-based learners self-regulated more. These students effectively tracked and assessed their learning. Process-based training promotes self-awareness and metacognition by letting students lead their learning. Process-based education promotes learning rather than results, focusing on the journey. Process-oriented students like deep processing, which engages them in the material. Process-based learning improves self-regulated learning and progress monitoring and evaluation.

2.2. Direct Instruction and Instructional Approach

Teachers emphasise extensive explanations of skills and concepts in direct instruction. Education by steps simplifies complex abilities and concepts (Sun et al., 2022). Highly structured direct instruction focuses on specific skills and knowledge. Mannarelli and Serrano (2022) found direct instruction improves education. Direct instruction increased student engagement, performance, and retention. Direct instruction's clear content helps students learn. Challenged children benefit from direct instruction. Blömeke et al. (2022) found direct instruction improved reading and maths. The

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youngsters behaved better than at other schools. Direct education was effective and inclusive for all races and socioeconomic groups. Organised direct instruction works. Teachers can simplify difficult concepts to promote comprehension and recall. Its positive effects on student engagement and accomplishment, especially among struggling learners, demonstrate its versatility and application in various educational environments. Direct instruction is highly regulated and explains skills and concepts. Research consistently shows its benefits to student engagement, academic performance, and material retention. Direct instruction helps kids with learning difficulties, demonstrating its inclusion and versatility. 2022 Blömeke; Mannarelli & Serrano; Sun et al., 2022).

2.3. Hybrid Instruction and Instructional Approach

Combining online and face-to-face learning makes hybrid training adaptable. This technique allows self-paced learning (Raes et al., 2020). A hybrid classroom uses online quizzes, discussions, and multimedia with in-person education. J., Steele, and L. Singh (2021) found hybrid training successful. They found hybrid students outperformed face-to-face students academically. Online education may improve student learning. Integrating traditional and online learning strengths is hybrid training's main value. Teachers can lead and support students face-to-face, boosting teamwork. Online learning is customisable for different learning styles and interests. Because it accommodates learning styles, hybrid education works. Online study, forums, and tests are convenient for students. This flexibility helps students with diverse learning methods.

Combining online and face-to-face learning is creative and effective. Hybrid students outperform face-to-face students academically (J. Singh, Steele, & L. Singh, 2021). Students learn better with hybrid instruction's flexibility and personalisation. Also, the study discovered that hybrid instruction improved student engagement, student happiness, and instructor satisfaction. According to the research by Stillman-Webb, Hilliard, Stewart and Cunningham (2023), hybrid instruction was equally beneficial for students from various socioeconomic and racial backgrounds. Also, the study discovered that hybrid training improved student retention and graduation rates. It was discovered that hybrid-instructed pupils were more likely to use higher-order thinking abilities including analysis, synthesis, and evaluation.

2.4. Instructional Approach and Syntactic Complexity in Argumentative Essays

A well-supported argument or position on a certain issue or topic is presented in an argumentative essay, a style of academic writing. An argumentative essay's goal is to persuade the reader to share the writer's viewpoint by supporting it with facts and sound reasoning. Normally, the opening of an argumentative essay presents the subject and gives some background information (Shao, H. Zhang, J. Zhang, Zhong, & Xu, 2022). Structured argumentative essays are common. The opening states the essay's thesis. Development and defence of this thesis will span the essay. The essay organises evidence and ideas. This section may refute criticisms to support the author. Essays end with diverse theses. Conclusions condense and reinforce key ideas. The finale concludes and leaves a mark. Argumentative essays can address social, political, philosophical, and scientific issues (Sarte & Gnevsheva, 2022). An argumentative essay can suffer from complex syntax. Shao et al. (2022) showed syntactic complexity training complicates argumentative essays. Grammar and sentence-combining practise helped (Wallace, Knudson, & Gheidi, 2020). Different teaching approaches complicate argumentative essay syntax. Brainstorming, composing, reviewing, and editing process-based learning increases English language learners' essay syntactic complexity (Gleichgerrcht et al., 2021). Feedback during writing has also worked. Jo (2021) found syntactic complexity feedback benefited Chinese students' argumentative writing. An argumentative essay systematically argues a main point. Effective argumentative essays require explicit training, process-based learning, and feedback to improve syntactic complexity. These methods provide more sophisticated and persuasive arguments.

TESOL instructors' writing styles affect argumentative essay syntactic difficulty, research shows. Dalman and Plonsky (2022) found a strong correlation between TESOL teachers' writing opinions and teaching practices, which affect essay syntactic complexity. Positive writing TESOL instructors taught syntax and grammar better, the study revealed. This positive mindset improved their pupils'

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persuasive writing grammar (McAndrews, 2021). Teachers that help students write demonstrate their language development views. The study examined TESOL teachers' writing opinions. Background, instruction time, and culture mattered. Many TESOL instructors with linguistics and English expertise promoted writing and taught syntax and grammar (Li, 2021). Teachers of English as a second language were also more likely to help students write argumentatively. Culture also shaped TESOL teachers' writing. Cultural writing influenced teachers and TESOL students (Ngo, 2019). Culture affects TESOL writing teaching venues and expectations. Finally, TESOL instructors' writing styles affect argumentative essay syntax. Positive teachers can instruct children precisely, increasing syntactic complexity. Educational background, teaching experience, and culture affect TESOL writing instruction attitudes and success. Understanding and resolving these issues improves TESOL students' writing.

2.5. TESOL's Attitude towards Writing as a Mediator

Writing instruction using various methods, such as process-based instruction, direct instruction, and hybrid instruction, has been investigated. The writing process is highlighted in process-based instruction, which encourages students to come up with ideas, plan, draft, revise, and edit their writing (Duan, Jia, & Chen, 2022). A systematic approach called direct instruction places an emphasis on the explicit teaching of concepts and skills. Online learning and conventional face-to-face training are combined to create hybrid instruction (Neha, Reese, Schaughency, & Taumoepeau, 2020). The way TESOL instructors feel about writing can have an impact on how they teach and how well their students write. A study by Vellanki, Mond, Khan and Nair. (2022) established a correlation between TESOL's attitude regarding writing and their use of writing tactics and feedback on students' writing. TESOL instructors who had a favorable outlook on writing tended to employ more strategies and give their students more thorough feedback. TESOL teachers' writing attitudes may affect instruction and student writing. TESOL's writing attitude influences argumentative essay syntax and instruction, argues McAndrews (2021). TESOL's writing attitude affects argumentative essay syntactic complexity and process-based training, research shows. Writing process attitudes of TESOL teachers impact how process-based instruction improves syntactic complexity. Writing opinions of TESOL teachers affect process-based instruction. The study also found that TESOL's writing attitude fully affected direct teaching and argumentative essay syntactic difficulty. The writing attitudes of TESOL instructors determine whether direct teaching affects syntactic complexity. Therefore, TESOL instructors' writing attitudes greatly affect how direct teaching improves argumentative essay syntactic complexity. These data suggest addressing instructional method and TESOL instructor attitudes. In TESOL's writing attitude mediation, instructor mentality affects how well instructional approaches improve students' writing. Finally, TESOL teachers' writing attitudes affect student writing and instruction. Understanding how teachers' attitudes affect process-based and direct teaching improves TESOL writing.

2.6. Writing Task Complexity as Moderator

Writing well involves syntactic complexity (M. Zhang Lan, & Yang, 2023). Complex syntax means argumentative essayists can explain complex topics. Writing difficulty can affect TESOL's argumentative essay syntax and thinking.

Writing task difficulty affected TESOL's writing attitude and argumentative essay syntactic complexity, according to Sarte and Gnevsheva (2022). The TESOL writing attitude improved syntactic complexity for difficult argumentative essays. TESOL instructors' assignment difficulty may affect syntactic complexity.

A hypothesis and conceptual framework evolved from this discourse and literature review. The concept is that TESOL's writing balances argumentative essays' grammar. Written challenges should affect TESOL's grammatical complexity view.

TESOL's writing attitude, argumentative essay syntactic complexity, and writing task complexity may interact in Figure 1. For empirical testing, frameworks show research links and dynamics.

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Literature analysis demonstrates argumentative writing demands grammatical complexity. Sarte and Gnevsheva (2022) found that writing task complexity complicates TESOL's writing attitude-syntactic complexity relationship. Further empirical research can confirm and improve our understanding of these links utilising the findings' premise and conceptual framework.

H_1: The instructional approach has a significant and positive influence on process-based instruction.

H_2: The instructional approach has a significant and positive impact on direct instruction.

H_3: Instructional approach has a significant and positive impact on hybrid instruction.

H_4: Instructional approach has a significant and positive impact on TESOL's attitude towards writing.

H_5: TESOL's attitude towards writing has a significant and positive impact on syntactic complexity in argumentative essays.

H_6: TESOL's attitude towards writing significantly mediates the relationship between instructional approach and syntactic complexity in argumentative essays.

H_7: Writing task complexity significantly moderates the relationship between TESOL's attitude towards writing and syntactic complexity in argumentative essays.

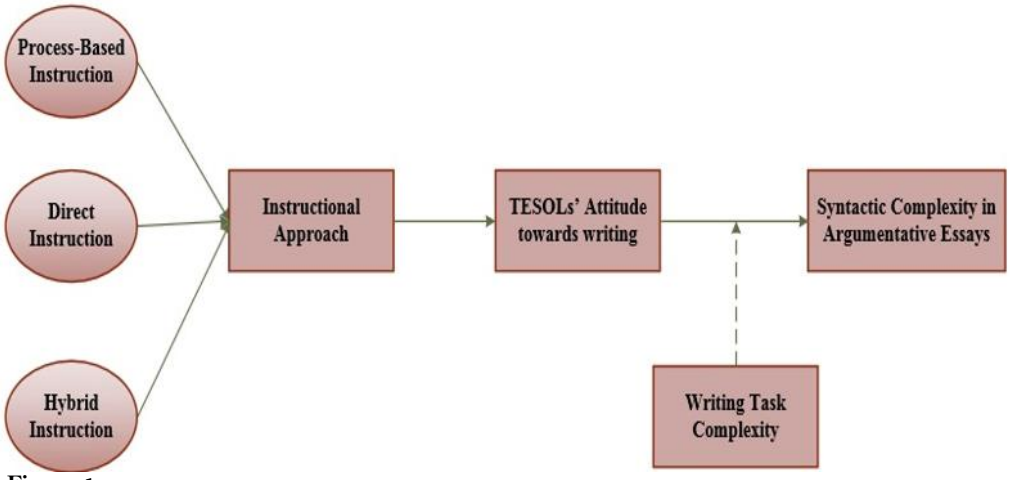

Figure 1.
Conceptual framework.

3. Methodology

Internet questionnaires provided data. Instructional technique, grammar, writing attitude, and task complexity may have been surveyed. Online surveys streamline data collection from remote workers. SmartPLS 4, a powerful structural equation modelling system, analysed data (Sandra Marcelline et al., 2022). Complex models with many variables and interactions can be analysed using structural equation modelling. The programme tested the study's instructional approach, grammatical complexity, writing attitude, and task complexity. SmartPLS 4's comprehensive analysis can analyse the model's complex links. All links are revealed by structural equation modelling of latent variables and their effects. University-level English writing was studied with 368 Chinese TESOL students. Inclusion criteria were used to select participants using basic random sampling. Online survey data was analysed using SmartPLS 4 to test the recommended model and correlations between instructional approach, syntactic complexity, writing attitude, and task difficulty. A systematic study examines the complex dynamics of TESOL writing instruction. They studied university English writing. Random selections were made from university student lists. English-speaking Chinese students taking an English writing course were eligible. The study included 368 TESOL students who met these criteria. The mediating effect of attitude towards writing and the moderating role of writing task complexity was also examined using SmartPLS 4.

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4. Results

4.1. Sample Profile

The sample size for this study is 368 TESOL learners in China, with gender distribution (49.7% male and 50.3% female). The majority of the students were between the ages of 18-23 (59.2%), and about two-thirds of the sample had a bachelor's degree (68.5%). In terms of English proficiency, the majority of the students had an advanced level (59.0%), with 34.5% at an intermediate level and only 6.5% at a beginner level (Table 1).

Table 1.
Demographic profile of the respondents.

Demographic item		Frequency	Percentage
Gender	Male	183	49.7%
	Female	185	50.3%
Age	18-20	92	25.0%
	21-23	126	34.2%
	24-26	85	23.1%
	27 and above	65	17.7%
Educational level	Bachelor's degree	252	68.5%
	Master's degree	116	31.5%
English proficiency level	Beginner	24	6.5%
	Intermediate	127	34.5%
	Advanced	217	59.0%

In this study, the measurement and structural models were put to the test using the variance-based PLS-SEM. The PLS-SEM method has been dubbed the "holy grail" and "silver bullet" of advanced research analysis because it is basically without rival in large, complex models with hierarchical latent variables (Hair et al., 2019). Due to its predictive capacity, PLS-SEM is used to evaluate complex models incorporating higher-order constructs (HOCs), such as reflective-reflective models (Hair, Risher, Sarstedt, & Ringle, 2019 PLS-SEM better measures latent components through route analysis and explains structural model variation from dependent variable changes (Hair et al., 2019).

The latest and most reliable PLS-SEM method for second-order structures in Stage 1 measurement model testing is reflective-formative modelling (Hair et al., 2019). Recurrent indicators hierarchically simplify second-order construct estimation. Reflective-formative approaches model and measure first-order instructional strategies. Recurring indications measure the educational process as a reflecting (second-order) construct. The perspective of Teaching as a second-order construct with reflecting aspects is more nuanced. The study examines instructional approach design indicator weights using reflective-formative modelling. This can improve managerial advice and demonstrate instructional technique complexity (Hair et al., 2019). Final analysis uses PLS-SEM, specifically reflective-formative modelling, on complex models with higher-order constructs. Reflective-formative methods improve second-order concept estimation in instruction. Improved latent concept comprehension yields a robust measuring model and a full analysis of the research framework's complex relationships. With regard to process-based instruction, direct instruction, hybrid instruction, and all other variables, the factor-based PLS algorithm produced outer loading values that reflected the measurement model of a multidimensional educational strategy. The outer loading larger value for each item is 0.5. The outer loading of each item is shown in Table 2.

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Table 2.
Outer loading of items.

	Items	Outer loading
Direct instruction	DI1	0.890
	DI2	0.912
	DI3	0.922
Hybrid instruction	HI1	0.908
	HI2	0.921
	HI3	0.887
Process based instruction	PBI1	0.805
	PBI2	0.779
	PBI3	0.756
Syntactic complexity in argumentative essays	SCAE1	0.766
	SCAE2	0.729
	SCAE3	0.804
TESOL's attitude towards writing	TATW1	0.795
	TATW2	0.778
	TATW3	0.757
Writing task complexity	WTC1	0.871
	WTC2	0.875
	WTC3	0.915

The measuring model's quality was evaluated by accessing individual items and the scale reliability of all components, followed by convergent and discriminant validity. Internal consistency of items can be used to assess reliability, whilst convergent and discriminant validity of constructs can be used to assess validity (Hair et al., 2019). Cronbach's and CR confirmed the internal consistency of all questionnaire items (Hair et al., 2019). Cronbach's Syntactic Complexity in Argumentative Essays ($\alpha = 0.930$) with 3 items, TESOL's attitude towards Writing ($\alpha = 0.907$) with 3 items, writing task complexity ($\alpha = 0.942$) with 3 items, and instructional approach dimensions, i.e. process based instruction ($\alpha = 0.866$), direct instruction ($\alpha = 0.894$), and hybrid instruction ($\alpha = 0.917$) with 3 items each are represented in Table 3. Table 3 also includes the CR results for all metrics, including the multi-dimensions of the instructional method. The CR is said to be a better tool for measuring accurate reliability findings (Hair et al., 2019). The findings revealed that all construct attributes fulfilled a reasonable level of CR and Cronbach's alpha, with values greater than the threshold, i.e.0.70 (Hair et al., 2019). The measurement of convergent validity gives correlational metrics that represent the extent of agreement among different indicators of the same construct. Convergent validity is AVE 0.5 (Hair et al., 2019). In Table 3, all constructions had AVEs above 0.5. The values demonstrate composites' unidimensionality and convergent validity for each concept. The AVE compares construct indicator variation to total variance to assess measurement accuracy. AVEs > 0.5 suggest unidimensionality and convergent validity because the construct's indicators explain an important percentage of its variation. Table 3 shows composite convergent validity with all constructs' AVE values > 0.5. Same-construct indicators show the measuring model's unidimensionality and dependability.

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Table 3.
Construct reliability.

Variables	Cronbach alpha	CR	AVE
Direct instruction	0.894	0.934	0.824
Hybrid instruction	0.890	0.932	0.820
Process-based instruction	0.866	0.917	0.786
Syntactic complexity in argumentative essays	0.930	0.955	0.877
TESOL's attitude towards writing	0.907	0.942	0.844
Writing task complexity	0.942	0.963	0.896

Hair et al. (2019) suggested assessing measurement model discriminant validity using the Fornell-Larcker cross-loading indicator criterion. Discriminant validity tests ensure reflective constructs and indicators correlate better within their notion (Hair et al., 2019). Testing empirically separates concepts. Model-construct relationships are in Table 4. To compare a construct's square root of the AVE to its correlation coefficients, the Fornell-Larcker criterion is used. Discriminant validity occurs when a construct's square root of the AVE exceeds its correlation. The square root of AVE is used to compare these correlations between latent constructs according to the Fornell-Larcker cross-loading criteria. As a result, the discriminant validity increases with the square root of each latent construct's AVE in comparison to the connection with other latent variables. As is shown in Table 4, the results confirm the discriminant validity value for Syntactic Complexity in Argumentative Essays (0.936), TESOL's attitude towards Writing (0.919), writing task complexity (0.946), and instructional approach dimensions, i.e., process-based instruction (0.887), direct instruction (0.908), and hybrid instruction (0.905).

Table 4.
Discriminant validity (Fornell-Lacker).

	DI	HI	PBI	SCAE	TATW	WTC
Direct instruction	0.908					
Hybrid instruction	0.403	0.905				
Process-based instruction	0.273	0.270	0.887			
Syntactic complexity in argumentative essays	0.066	0.113	0.450	0.936		
TESOL's attitude towards writing	0.312	0.226	0.087	0.325	0.919	
Writing task complexity	0.182	0.167	0.397	0.873	0.292	0.946

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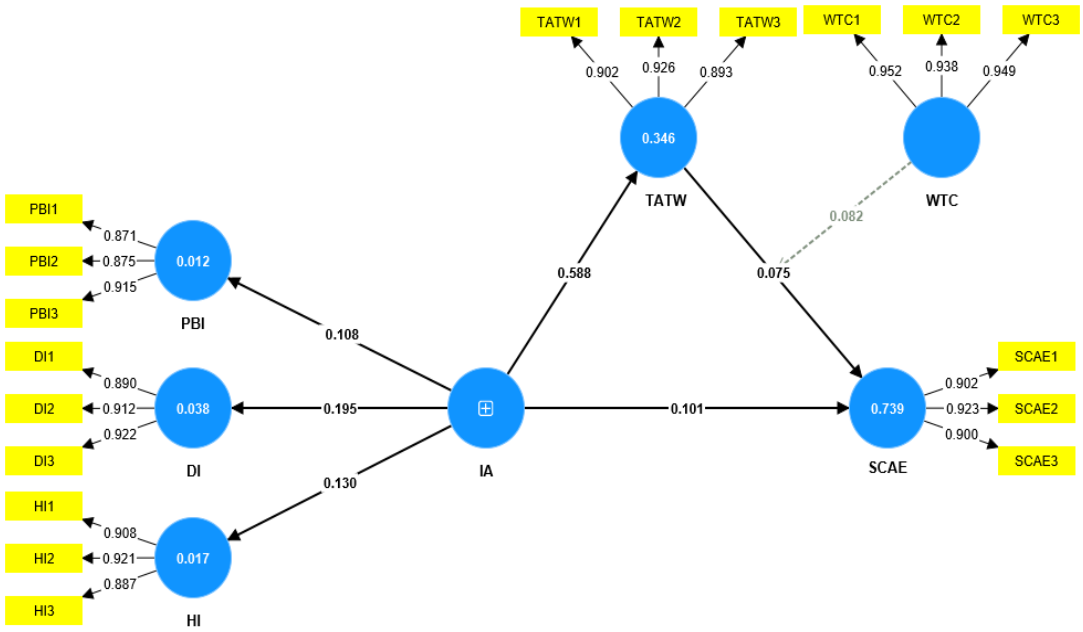

Figure 2.
Measurement model.

4.2. Testing Measurement Model (Stage 2)

Reporting the outer weights and p-values of the first-order (reflective) dimensions is necessary, as stipulated by the standards for evaluating formatively modeled HOC (Hair et al., 2019). Outer weights and p-values are used in Table 5 to determine the significance of the instructional method (second-order reflective) and its dimensions (first-order reflective). In addition, the absence of multi-collinearity problems was demonstrated by the collinearity statistics of the reflective construct indicators. This was accomplished by ensuring that all of the variance inflation factor values were less than 0.5, which is the suggested threshold (Hair et al., 2019).

Table 5.
Assessment of reflective dimensions of instructional approach.

First-order construct (Reflective)	Second-order construct (Reflective)	Path coefficient	t-value	VIF	p-value
Instructional approach	Direct instruction	0.195	4.034	3.230	0.0001
	Hybrid instruction	0.130	2.610	2.898	0.005
	Process-Based Instruction	0.108	2.148	2.188	0.016

4.3. Significance of Structural Model

According to Hair et al. (2019), a structural model tests the statistical significance of all route coefficients between exogenous (independent) and endogenous (dependent) variables using PLS-SEM and bootstrapping (resampling). Path coefficients and t-values measure structural correlation. Path coefficients standardise regression coefficients, and t-values above 1.64 suggest research construct relevance (Hair et al., 2019). Table 6 shows the research variables' path coefficients, t-values, and significant levels. Figure 2 shows the multidimensional instructional approach structural model. Reflective multidimensional teaching predicts TESOL's writing attitude and argumentative essay syntactic complexity. Structure-model explanatory power is measured by R-squared. Table 6 shows that instructional procedure, TESOL writing attitude, and assignment difficulty explain 73.9% of argumentative essay syntactic complexity.

Finally, the structural model's path coefficients and t-values confirm the study's construct associations' statistical significance in Figure 2 and Table 6. TESOL's writing attitude, teaching

methods, and assignment difficulty affect argumentative essay syntactic complexity, which the multidimensional instructional approach predicts. Hence H1, H2, and H3 are accepted. This study model's R2-value indicates greater statistical power in parameter estimations (Hair et al., 2019). Furthermore, the PLS-SEM blindfolding technique was employed to confirm the model's predictive significance. For this investigation, the derived Stone-value Geisser's (Q2=0.722) meets the stipulated criteria (i.e. Q2>0) for the predictive relevance of our study model (Chin, 1998). The PLS-SEM assessment for standardized root mean residual (SRMR) criterion value (SRMR=0.077) confirms the model fitness, which is likewise within an acceptable range, i.e. SRMR 0.08 (Hair et al., 2019), as shown in Table 6.

Table 6.
Direct path analysis.

Constructs	Path coefficient	T value	P value	Q2	R2	SRMR
IA -> SCAE	0.101	2.741	0.003	0.722	0.739	0.077
TATW -> SCAE	0.075	2.063	0.020			

4.4. Testing of Hypotheses

The PLS-SEM bootstrapping technique generates evaluation ratings for the structural path model, which are based on the study hypotheses and are presented in Table 6. The model illustrates the direct influence that instructional strategies and TESOL instructors' views regarding writing have on the syntactic complexity of argumentative essays. The correlation between the two variables demonstrates that instructional approaches do have a highly substantial and favorable impact on the syntactic complexity of argumentative essays (t = 2.74; p = 0.003). Hence, H4 is therefore accepted. In addition, the attitudes of TESOL teachers towards writing demonstrate a substantial and beneficial effect on the syntactic complexity of argumentative essays (t = 2.063; p = 0.020). Hence, H5 is therefore accepted.

4.5. Mediation Analysis

The mediation effect of TESOL's attitude towards writing was investigated between the relationship of instructional approach and syntactic complexity in argumentative essays. TESOL's attitude towards writing significantly mediates the relationship between instructional approach and syntactic complexity in argumentative essays (t=2.003; p = 0.023). H6 is therefore accepted as shown in Table 7.

Table 7.
Mediation analysis.

Constructs	Path coefficient	T value	P value
IA -> TATW -> SCAE	0.044	2.003	0.023

4.6. Moderation Analysis

The moderating influence of writing task difficulty was explored on the relationship between TESOL teachers' attitude towards writing and the syntactic complexity of argumentative essays, as graphically displayed in Figure 3 and Table 8. The results of this investigation are shown below. Writing task complexity (t=2.215; p = 0.013) establishes significantly positive moderations on the relationship between TESOL's attitude towards writing and syntactic complexity in argumentative essays.

Table 8.
Moderation analysis.

Constructs	Path coefficient	T value	P value
WTC x TATW -> SCAE	0.082	2.215	0.013

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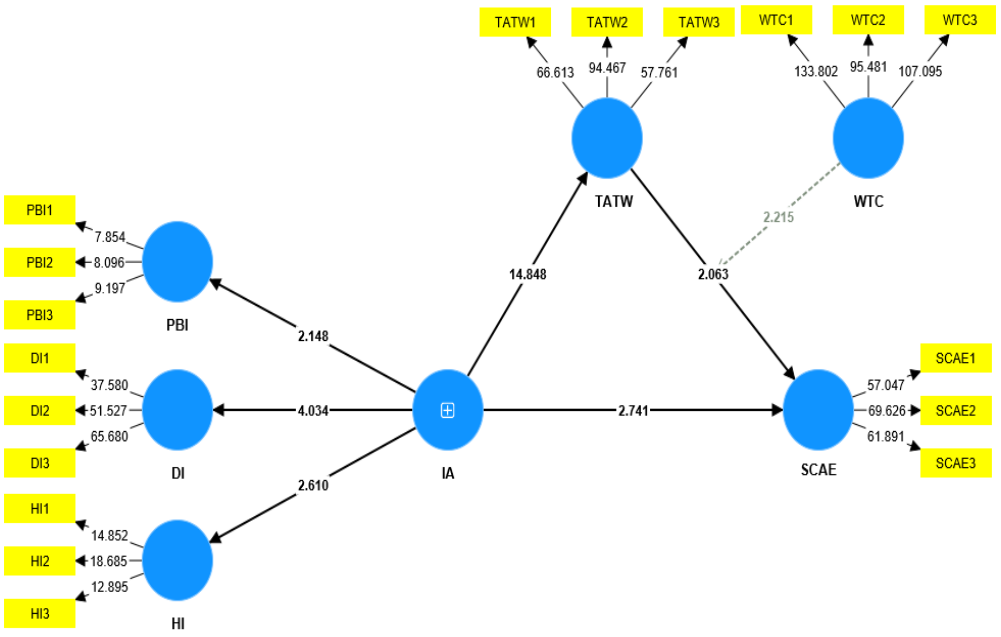

Figure 3.
Structural model.

5. Discussion

First hypothesis: process-based instruction's influence. Process-based learning emphasises problem-solving, critical thinking, and self-regulation over content (Rezai, Ashkani, & Ismail, 2023). Numerous studies suggest process-based teaching improves student learning. Process-based learning boosts student engagement (Fathi et al., 2020). Student participation improves comprehension and retention. Process-based learning improves metacognition, including learning monitoring and technique correction (Usher, Hershkovitz, & Forkosh-Baruch, 2021). Academic success and lifelong learning require metacognition (Kurent & Avsec, 2023). Process-based learning may boost metacognition and motivation (S. Zhou & Rose, 2021). Students enjoy active learning more than passive learning. This develops critical thinking and problem-solving skills for academic and non-academic achievement.

The second hypothesis covers direct instruction and instructional method. Direct instruction is structured, teacher-led, and focuses specific teaching approaches to promote student learning. Many research suggest that direct education enhances student performance (Duan et al., 2022). Students receive clear instructions on what and how to study (Catala et al., 2023). It effectively guides challenging students and provides feedback to increase comprehension. Direct instruction helps teachers identify student learning challenges for focused interventions and support (Mendoza, Yan, & King, 2023). Students are more engaged with direct instruction (Emerick, 2019). Clear instructions help teachers create a good, engaging learning environment and reduce student misunderstanding and frustration. Direct instruction shows pupils they can grasp difficult subjects, boosting their confidence (Maureen, van der Meij, & de Jong, 2022). P. Zhang & Graham (2020) found that direct instruction strongly affects instructional strategy. This effect is greatest for students at risk of academic failure or with learning disabilities. Direct instruction's structure benefits such students academically. Direct instruction promotes instruction, says the second hypothesis. Its benefits include clear instructions, learning issue detection, motivation and engagement, and a positive learning environment. Direct instruction enhances academic outcomes for struggling pupils.

Students have more freedom, flexibility, and control with hybrid learning. Lindorff, Jentsch, Walkington, Kaiser, and Sammons (2020) say hybrid learning gives students more control. Students can learn at their own speed by participating in online forums, conversations, and digital resources

with peers and teachers. Self-motivation and involvement boost academic performance (Nascimento, Moreira, & Welker, 2019). Hybrid classrooms encourage active learning. Noguerón-Liu's 2020 study indicated hybrid training boosts critical thinking, problem-solving, and teamwork. Online discussion forums and group projects help students apply their knowledge (M. (John) Zhang, Newton, Grove, Pritzker, & Ioannidis, 2020). The flexibility of hybrid training offers personalised learning. Students can customise their education with online materials and debates. Facilitating diverse learning styles and preferences makes training more inclusive and effective (Means et al., 2013). Virtual collaboration between students and instructors is possible with hybrid methods. Students can share ideas and gain comments in online forums and collaborative activities, building community and learning (Allen & Seaman, 2017). Studies show that hybrid education improves instruction by increasing student autonomy, active involvement, and personalisation. As education evolves, blended instruction may meet students' demands.

Fourth hypothesis: teaching style influences argumentative grammar. Research shows writing instruction influences argumentative essay syntactic complexity. Process-oriented students wrote more complicated argumentative essays than product-oriented students (Al-Husban, 2020). Process-oriented approaches concentrate prewriting, drafting, revising, and editing, while product-oriented approaches emphasise a well-structured essay (Maureen, van der Meij, & de Jong, 2020). Grammar and sentence structure are stressed in student feedback. Product-oriented writing emphasises essay structure over language and syntax (Crawford, Higgins, & Hilburn, 2020). These data suggest writing and syntactic complexity are connected. Writing process, grammar, and syntax feedback make argumentative writing more syntactically difficult. Good writing instruction, especially for argumentative essays, is crucial. Process-oriented writing focuses grammar and syntax, helping students build argumentative writing syntactic complexity. As teachers improve, argumentative essays may rely on more difficult grammar.

Fifth hypothesis: Writing philosophy of TESOL instructors affects argumentative essay syntax. Multiple studies demonstrate TESOL professors' writing attitudes affect students' syntactic complexity. McAndrews (2021) suggests that TESOL instructors who consider writing as an exploratory learning process rather than a set of rules can improve students' syntactic complexity. In McAndrews' study, one teacher stressed grammar and syntax and the other encouraged inquiry and discovery. Process students wrote more syntactically complexly than rule-oriented pupils. These findings imply that TESOL teachers' attitudes greatly affect students' syntactic complexity (Yanagawa, 2022). The research suggests that argumentative essays may become more syntactically complex if TESOL professors, who view writing as exploratory and learning, emphasise grammar and syntax in their feedback. Methods and philosophy of TESOL instructors affect students' writing. ESL teachers' attitudes are also highlighted in Sabiri's 2020 report. Teaching writing as inquiry and discovery stimulates experimentation and risk-taking, which increases grammatical complexity. Teacher must help youngsters see writing as dynamic. By treating writing as research and discovery, TESOL instructors can complicate argumentative essays. Teaching pupils to see writing as more than rules encourages dynamic language and sophisticated syntactic structures.

Sixth hypothesis: TESOL's writing philosophy affects argumentum and grammar. Dalman and Plonsky (2022) found that TESOL teachers' writing attitudes affect instructional tactics and argumentative essay syntax. Robillos and Bustos (2022) suggest process-based education hurts TESOL argumentative essay syntax. In addition, TESOL teachers' writing attitudes moderate teaching methods and grammatical complexity. Process worked best for writing-loving TESOL teachers. TESOL teachers' writing attitudes strongly influence writing instruction (Xu & Luo, 2022). Irgin and Erten (2020) add "TESOL teachers who believe that writing is essential and have a positive attitude towards it are more likely to adopt instructional approaches that enable students to improve their writing skills." Teachers' opinions influence writing instruction. The implications of our hypothesis are immense. Encourage good writing to improve TESOL argumentative essay grammar. Positive writing philosophy may inspire teachers to use effective practices that reflect their writing beliefs. Sixth hypothesis: TESOL teachers' writing ideology affects argumentative essay grammar and instruction. Good teachers' writing attitudes improve syntactic writing and education.

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The seventh hypothesis investigates TESOL's argumentative essay syntax and attitude in challenging writing assignments. TESOL professors' opinions on writing and their students' argumentative essays' syntactic complexity have been extensively researched, but current research shows that the writing task's inherent complexity moderates this association. When given tough tasks to evaluate and synthesise knowledge from many sources, TESOL teachers' writing attitudes affected students' syntactic complexity more (Savage & Pace, 2019). Writing task complexity affects TESOL teachers' writing attitudes and students' argumentative essay syntactic complexity, according to Lu, Casal, & Liu (2020). Another study found that TESOL teachers' criticism improved harder writing (W. Zhou, Li, & Lu, 2023). The study indicated that "difficult tasks provide TESOL professors with opportunities to engage in more meaningful feedback that can assist students in developing their writing skills" (Larsson & Kaatari, 2020). These studies show the complex interaction between TESOL professors' attitudes, writing tasks, and argumentative essay students' syntactic complexity. TESOL professors' attitudes alter syntactic complexity and provide more relevant feedback on complex writing problems, improving students' writing. Hypothesis 7: Writing assignment complexity moderates TESOL's writing attitude and argumentative essay syntactic complexity. Understanding how writing task complexity impacts teachers' attitudes can help TESOL teachers increase argumentative writing syntactic complexity.

6. Conclusion

The study examined the relationship between instructional strategy and syntactic complexity in argumentative essays written by Chinese TESOL students, with attitude towards writing and writing task complexity as mediators. The research found a positive correlation between teaching methods and argumentative essays' syntactic complexity. The study also found that the complexity of the writing task controlled the association between process-based instruction and syntactic complexity and that attitudes towards writing partially mediated the relationship. The study abstract includes these findings. This study found that the instructional technique increases the syntactic complexity of argumentative essays written by Chinese TESOL students. Language teachers should use process-based and hybrid instruction to increase syntactic complexity in students' writing. This study also shows that instructors should consider students' writing assignments' difficulty when choosing instructional methods. Teachers should also help students develop a positive writing attitude. This will accelerate student writing development. Additionally, writing attitudes mediate the relationship between instructional technique and grammatical complexity. It emphasizes the importance of encouraging students to write through language instruction. This study can help TESOL teachers. TESOL teachers can improve students' writing by employing proven methods, assessing assignment complexity, and praising effective writing. Understanding how process-based training and other instructional tactics affect learning helps develop compelling experiences. Understanding how writing assignment difficulty moderates helps teachers adjust strategies and give targeted feedback. The report underlines TESOL teachers' good writing attitudes and curiosity. Teaching kids to write inspires them. Future study should include longitudinal writing development, TESOL context comparisons, and writing instruction technology integration. Better language instruction and TESOL student growth are their goals.

7. Implications

7.1. Practical Implications

This study impacts TESOL teachers. Process-based and hybrid instructional methods enhance TESOL argumentative essay syntax. Language teachers should provide students lots of writing practice—preparation, production, revision, and editing. Student essays with complicated syntactic patterns can benefit from process-based learning and hybrid training. 2. The study highlights that language teachers must consider writing task complexity when planning instructional strategies. Engaging kids and improving their writing requires difficult assignments. Tasks should be balanced to avoid student overload. Teachers can customise instruction to writing assignment complexity to help students write syntactically complicated argumentative essays. Research suggests writing

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attitudes moderate the instructional strategy-syntactic complexity relationship. Giving students clear and relevant feedback, encouraging them to see writing as a process rather than a product, and viewing mistakes as learning opportunities can help them develop a positive writing attitude. Teachers should also examine pupils' writing attitudes, according to this study. Teachers' constructive feedback and ongoing learning can influence students' writing attitudes. Students who accept mistakes enhance their writing attitudes and argumentative essay syntactic complexity. Language teachers should also recognise that teaching approaches and student attitudes affect TESOL syntactic complexity. Hybrid and process-based learning promotes good writing in language instruction. This holistic approach promotes language growth by recognising the dynamic relationship between instructional approaches, writing activities, and learners' attitudes. This study advises language teachers on task complexity, instructional design, and writing attitudes. TESOL programmes can improve argumentative essay syntactic complexity and language learning in diverse educational settings by utilising these findings.

7.2. Theoretical Implications

This study's TESOL implications explain how instructional tactics affect second-language writing grammatical complexity. Process-based and hybrid training improve TESOL argumentative writing syntactic complexity more than direct instruction. Present language teaching theories emphasise interactive, learner-centered methods. Writing difficulty moderates language learning, confirming the complexity theory in second language acquisition. Writing attitudes affect instructional style and grammatical complexity, facilitating sociocognitive second language acquisition. This stresses student input on work. Sociocognitive theories highlight language learning's social, cognitive, and learner aspects. The study suggests language teachers include students' writing beliefs and attitudes into their training for a more holistic and learner-centered approach. Finally, this study shows the complex link between instructional strategies, writing task complexity, and second-language learners' attitudes. These theoretical implications enable dynamic, learner-centered TESOL and language teaching approaches.

The study impacts TESOL and SLA theory. SLA theories today highlight process-based, hybrid, and interactive language learning. Process-based training promotes cognitive and metacognitive processes, which helps students actively learn and write better. Writing task difficulty moderates the SLA complexity hypothesis that learning task complexity influences language development. This recommends nuanced task design in language instruction since task complexity impacts learners differently. It emphasises meaningful and difficult language tasks to improve task-based language teaching. The Zone of Proximal Development highlights writing attitudes' mediation. These ideas imply learners' beliefs, attitudes, and social interactions affect language development. Writing attitudes show socio-affective language development and cognitive-affective interaction. The study's teaching techniques, task difficulty, and language learners' attitudes support SLA. These theoretical implications influence non-TESOL second-language acquisition educators and scholars.

7.3. Limitations and Future Direction

Consider this study's constraints to understand its scope. Its Chinese TESOL focus limits its application to other cultures and languages. Future research should include multi-cultural people for educational universality and grammatical complexity. Second, the study did not include learners' writing experience, English competence, and motivation, which may affect instructional strategy-syntactic complexity. These attributes' effects on writing development need further study. Research on argumentative essays limits other writing types. Grammatical complexity and descriptive and narrative writing teaching are generalizable. Writing self-reported opinions may be biassed. Social desirability bias and self-report subjectivity may distort students' writing emotions. Students' attitudes and writing outcomes could be studied using observational or qualitative methods. These limitations require cautious interpretation of the study's findings and more research to grasp the complex link between instructional approaches, individual qualities, and writing outcomes. Answer bias and participant perceptions can occur in surveys. Self-reported statistics may not represent

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instructional dynamics as well as interviews or class observations. This study highlights writing task difficulty in instructional strategies without criterion or operationalization. A clear description of writing task complexity would improve methodological clarity and replicability. The work modelled structural equations with SmartPLS 4 without evaluating its robustness, assumptions, or limits. Learning statistical processes would improve the study's methodological rigour and allow critical analysis. Fixing these methodological issues would improve and generalise the study's findings on TESOL students' argumentative essays' teaching strategies, attitudes, and syntactic complexity. Future studies could improve validity and reliability by changing methodology, participant demographics, and measurement devices. Further research should study how TESOL instructors and students' cultural and educational backgrounds affect teaching methods. Understanding how culture and environment affect language and writing development may assist design effective TESOL curricula. TESOL learners' longitudinal studies may show how teaching strategies increase syntactic complexity. Sustainability of writing skill and syntactic structure gains would inform curriculum and instruction. Investigating the synergistic effects of process-based, direct, and hybrid instructional styles on TESOL students' writing may also help understand their benefits. This could help teachers integrate and adapt instruction for diverse learners. Finally, TESOL research should consider many methodologies, processes, contextual, and individual factors. Researchers can improve TESOL instruction and ESL writers by targeting these paths.

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