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CONNECTIONISM IN SAUDI EFL CLASSROOMS: A STUDY USING INPUT HYPOTHESIS

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ABSTRACT

The increase in the need to use English in Saudi Arabia has put more emphasis on efficient teaching methods in English Foreign Language (EFL) classrooms. This research uses connectionism in teaching English to Saudi EFL students through the application of the Input Hypothesis of Krashen, but in fact, his hypothesis is the Monitor Model of second language acquisition. The input Hypothesis presupposes that learners can learn a language when they get comprehensible input containing some linguistic properties slightly more than their current level, which is known as $i + 1$. A sample of 97 Saudi EFL learners was selected and split into an experimental group (EG) and a control group (CG). The three aspects that are slowly rotating are the comprehensible input, the learners transforming between i and $+1$ due to the linguistic complexity, and competence, which transforms slowly due to the input. The position of the hypothesis is that independent variables (IVs), Comprehensible Input Quality (CIQ), Exposure Frequency (Repetition & Patterns) (EF), Affective Filter Level (AFL), Instructional Scaffolding ($i \rightarrow i+1$ Progression) (IS), and Classroom Interaction and Engagement (CIE) have an optimistic effect on English acquisition. The IBM SPSS 25 was used to analyse data, and it has Structural Equation Modeling (SEM) to analyse the path, paired sample t -tests, and multiple linear regression (MLR), which reveal that all IVs significantly predict acquisition among the EG. The findings prove that the acquisition of Saudi EFL learners is significant with CQI, EF, and support on IS, $P < 0.001$. Connectionist principles in accordance with the Input Hypothesis by Krashen enhance fluency, comprehension, and confidence that learners obtain, which serves as a pedagogic response to teaching Saudi EFL in classrooms.

KEYWORDS: English Language Teaching, Connectionism, Saudi EFL Learners, Krashen's Input Hypothesis.

1. INTRODUCTION

Language acquisition is a multifaceted cognitive process that is affected by exposure, repetition, and meaningful interactions. Connectionism is a learning theory with its foundation in cognitive science, which states that learners learn by developing neural connections gradually due to repeated exposure and perceiving patterns (Al-Khresheh, 2024). This viewpoint is central in second language learning in the sense that learners acquire linguistic structures through observation and interaction with inputs of language and not through memorising grammatical rules (Alshammari, 2022). Krashen's Input Hypothesis can be utilized to assist students acquire

effectively when given intelligible input that is slightly higher than their present proficiency, and this is generally known as $i+1$ (Ahmed & Alshammari, 2024). This theory posits that the development of the ability of learner will take place naturally when the input is comprehensible, yet not too easy, to ensure cognitive development occurs rapidly. Moreover, Krashen proposes the affective filter, which implies that certain emotional issues like anxiety, motivation, and self-confidence might either promote or prevent language acquisition (Jamshed et al., 2024). Figure 1 shows the Connectionist processes showing how input and interaction reshape learners' linguistic development.

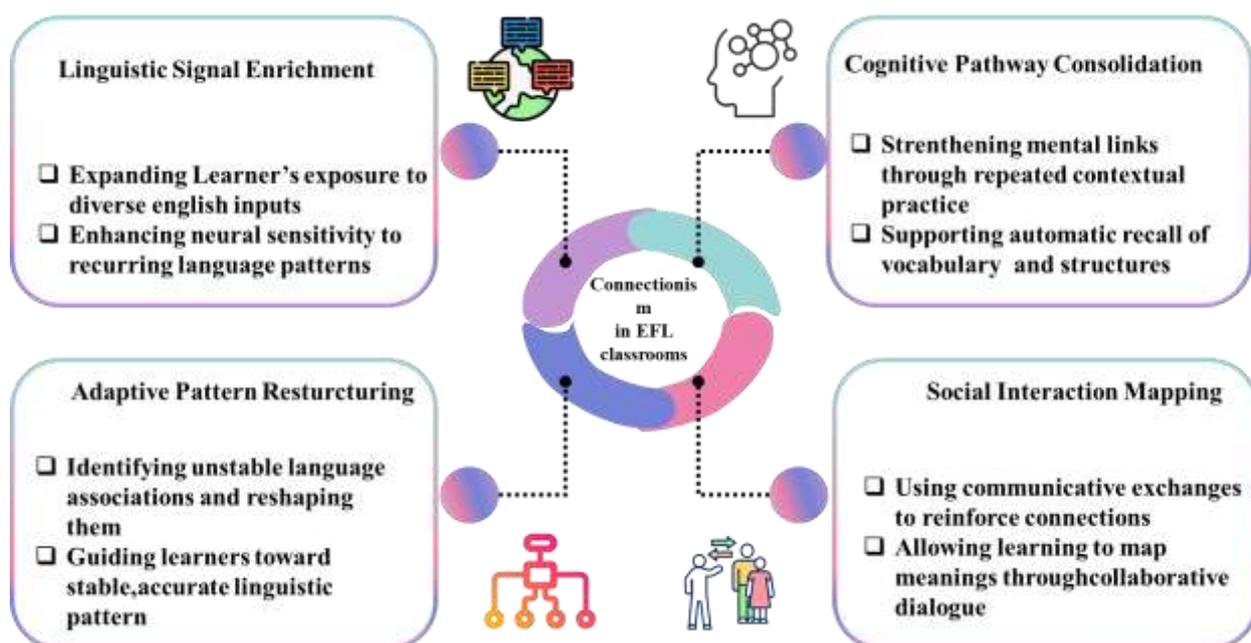


Figure 1: Core Connectionist Processes Illustrating How Enriched Input and Interaction Strengthen Linguistic Pathways in Saudi EFL Learners.

Most of the recent examinations in second language acquisition have been incorporating the concepts of connectionist and the modes of the Input Hypothesis theories to comprehend the way learners absorb language. It has been shown that repetition, pattern recognition, and meaningful interaction lead to the retention of vocabulary, syntactic precision, and communicative proficiency (Jamshed et al., 2024). Rich, scaffolded input environments have been made possible by advances in technology, including digital language labs, interactive applications, and multimedia resources, and help learners transition between i and $i+1$, effectively (Mohammad, 2022). Moreover, modern training has created the importance of emotional considerations in language classrooms with the focus on the fact that the

positive, low-anxiety learning atmospheres promote input absorption and the overall acquisition (Al-Mwzaiji & Nazim, 2023).

Even with these insights, the Saudi EFL classrooms are usually challenged with the problem of putting these theoretical principles into practice. Students are often subjected to the old-fashioned and teacher-focused approaches that place much emphasis on learning grammar and memorization (Alamri, 2022). This restricts the possibility of pattern identification, recurring exposure, and learning that is based on understanding, leading to slower language development as well as lower communicative competence (Almansour, 2024). Factors of emotions, including fear of error or pressure of high-stakes evaluation, further hinder

natural language acquisition by increasing the affective filter and decreasing the success of learning based on inputs (Alkodimi & Al-Ahdal, 2025; Alsofyani & Barzanji, 2025; Alharbi & Al-Ahdal, 2025). To overcome these issues, this research will focus on investigating the role of applying connectionist concepts of learning along with the Input Hypothesis by Krashen in improving the learning of English in Saudi EFL schools. Particularly, it explores how comprehensible input, repeated exposure, pattern recognition, and affective variables contribute to the process of helping learners to move between i and $i+1$.

Review of connectionism, Input Hypothesis, and EFL pedagogy in the Saudi context in section 2. Participants, data collection, and SPSS-based analyses in section 3. Statistical outcomes of IVs on acquisition in section 4. Discussion, pedagogical implications, and recommendations in section 5.

2. LITERATURE REVIEW

Evaluate the categories and occurrence of mistakes made in written phrases by undergraduate Saudi EFL students employing a quasi-experimental method, as presented in (Khan, 2022). The findings showed that total errors were produced by both groups at significantly different frequencies. For instance, the EG produced 116 errors while the CG made 199. The main barriers to the autonomy of Saudi EFL learners, as well as the connection between their autonomy behaviors and perceptions, were assessed in (Haque et al., 2023). Additionally, Pearson's correlation analysis found a quantitatively substantial optimistic link between Saudi EFL students' autonomous views and autonomy practices.

The Wordwall application's impact on EFL students in Saudi Arabia, Alfares (2025), stated that used a quasi-experimental approach to investigate the Wordwall system's application in EFL instruction. While the CG employed conventional techniques, the EG used Wordwall to improve vocabulary acquisition. An educational, convergent randomized, mixed methods design to explore the observed self-confidence of 145 Saudi educators of EFL when engaged in technology-assisted language learning (TALL) was presented in (Al-Seghayer, 2022). The results of their inquiry add to EFL teaching and educational advances by delivering new perspectives into crucial components of the observed self-efficacy of EFL instructors from the perspective of the increasing predominance of TALL educational technology.

The significance of semantic and non-linguistic

barriers on the English proficiency of Saudi EFL students has been assessed in (Mahdi, 2024; Al-Ahdal & Abduh, 2021). These findings offered novel answers; for instance, unlike the prior analysis, in the scenario of Saudi EFL students, no differences were detected to tackle semantic and non-linguistic challenges. Jamshed et al. (2024), investigated at how verbal and non-linguistic obstacles affected Saudi EFL learners' English fluency capabilities. The findings gave unique outcomes; for instance, unlike the preceding analysis, in the environment of Saudi EFL learners, no inequities were observed in addressing verbal and non-linguistic issues.

Identify the most and least used metacognitive auditory understanding techniques among Saudi EFL students and explore for gender differences in the statistical inquiry examined by Al-Khresheh & Alruwaili (2024), stated that these approaches. These data offer insights into metacognitive functions widespread across Saudi EFL learners and emphasize the importance of gender-sensitive pedagogical techniques in EFL education. The effectiveness of teaching grammar to Saudi male EFL undergraduates using digital tools (CDs, digital books, projectors, interactive boards, and synchronized and non-synchronous online materials) versus conventional techniques (printed materials, drilling, and teacher imitation) was examined in (Nasim et al., 2022). The investigation was important for both teachers and learners, as it might assist them in making use of digital technology solutions to improve students' grammar as well as their communication abilities

The prevalence of speaking nervousness among Saudi EFL instructors and an investigation into the relationship between speaking distress and Saudi Arabian learners' socioeconomic position have been assessed by (Al-Ahdal, 2020; Oteir & Al-Otaibi, 2022). The research's outcomes have some implications for EFL instructors who help their students overcome speaking fear, particularly when those students represent a range of socioeconomic backgrounds. Albaqami (2024), examined that effects of pushing email sessions, pushing seminars, and non-pushed instruction on Saudi university undergraduates' language acquisition in English. The results point to the need for more investigation into long-term technology-enhanced vocabulary acquisition activities that use the push-out strategy for speaking abilities.

2.1. Research Gap

Despite numerous examinations on Saudi EFL learners' errors, autonomy, technology-assisted

learning, and speaking anxiety, gaps remain in integrating connectionist principles with comprehensible input to systematically enhance vocabulary, grammar, idiomatic understanding, and fluency. Existing approaches often isolate linguistic skills or rely on conventional or digital tools without addressing learners' cognitive processing, affective factors, and scaffolding needs collectively. This research proposes a connectionist, input-based instructional hypothesis to overcome these limitations and improve overall English acquisition among Saudi EFL undergraduates.

3. MATERIALS AND METHODS

The research was conducted with a quantitative

form of investigation using 97 Saudi EFL students and 67 questions in various schools. Data were collected through classroom observations, organized exercises, and standardized tests that focused on vocabulary, understanding, and fluency. All the IVs were adjusted and monitored: AFL, EF, CIE, IS, and CIQ. Learner cognitive processing (LCP) was examined as a mediator, and the Saudi EFL learner was the dependent variable (DV). To analyze the influence of connectionist-inspired, input-driven learning on Saudi English learning outcomes, statistical tests such as the MLR, path analysis, and paired samples t-tests were performed using IBM SPSS 25. Figure 2 shows the summary of the overall processes in Saudi EFL learning.

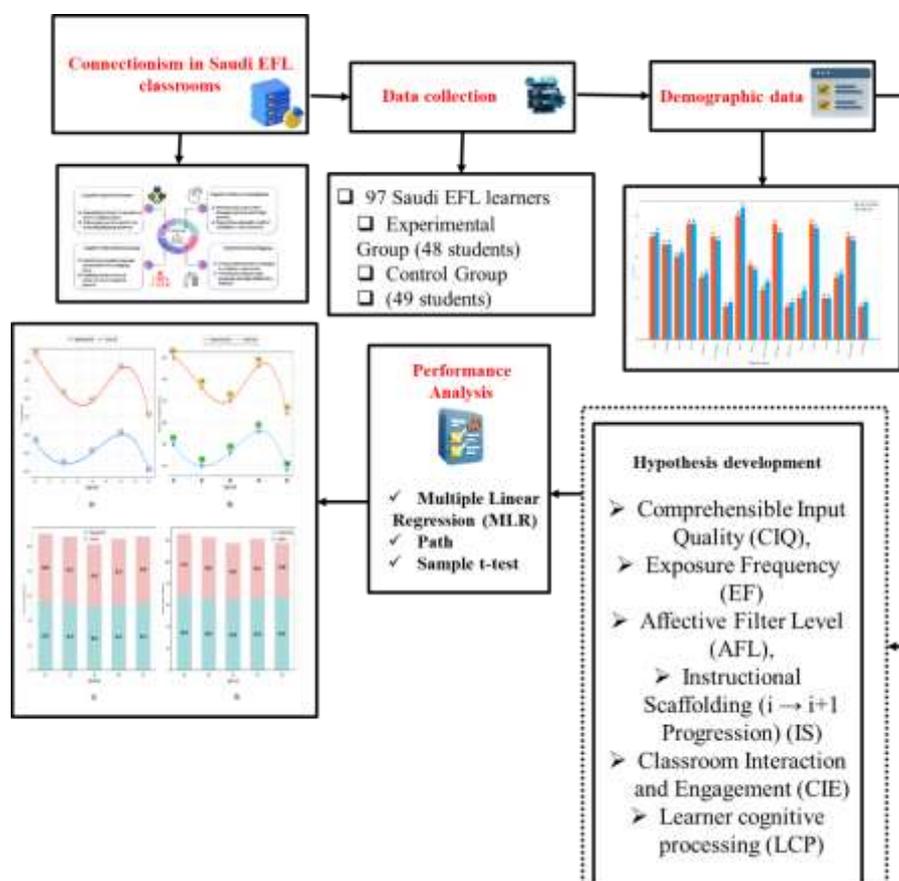


Figure 2: Overview of Research Process Integrating Connectionism, Data Collection, Hypotheses, and Performance Analyses for Saudi EFL Learners.

3.1. Data Collection

The research was carried out among 97 Saudi EFL students, representing different schools, and split into equal parts: an EG (48 students) taught according to the principles of connectionist, and according to the Input Hypothesis by Krashen, and a CG (49 students) trained in accordance with the conventional teaching methods. The sources of data

were 18 classroom observations (9 observations in each group), 67 student questionnaires, and 7 teachers who rated instructional practices and emotional support. Scaffolded input was analysed on learning materials (36 textbooks and worksheets). Further, samples of student performance, verbal assignments, essays, and the understanding of information were gathered to evaluate the linguistic progress and the presence of patterns, and the

influence of the affective factors among the two Saudi EFL are stated in Table 1 and Figure 3. groups. The demographics of the participants used in

Table 1: Participants' Demographic Characteristics Across Groups, Including Age, Gender, Proficiency, and Background.

Demographic Variable	EG (n=48)	CG (n=49)	Total (n=97)
Gender			
Male	25	26	51
Female	23	23	46
Age (years)			
15-16	20	21	41
17-18	28	28	56
Level of English Proficiency			
Beginner	15	16	31
Intermediate	25	24	49
Advanced	8	9	17
School Type			
Public	30	32	62
Private	18	17	35
Parental Education			
High School	12	14	26
Bachelor's Degree	28	26	54
Master's	8	9	17
Prior Exposure to English			
< 2 years	10	12	22
2-5 years	28	27	55
> 5 years	10	10	20
Socioeconomic Status (SES)			
Low	15	16	31
Middle	25	24	49
High	8	9	17

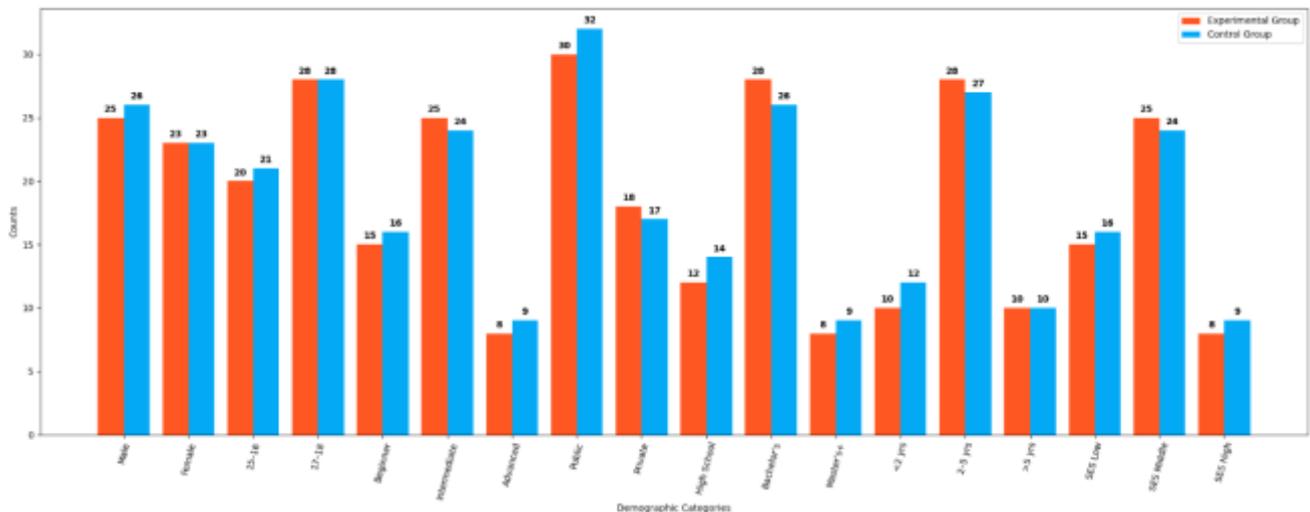


Figure 3: Demographic Distribution Comparing EG and CG to Examine Factors Influencing English Acquisition through Comprehensible Input.

3.2. Hypothesis Development

H1: CIQ has a significant positive influence on Saudi EFL learners through LCP.

Clear and meaningful input helps students recognize patterns and internalize language, improving acquisition.

H2: EF has a significant positive influence on Saudi EFL learners through LCP.

Repeated exposure strengthens neural connections, enabling pattern recognition and better language retention.

H3: AFL (low anxiety, high motivation) has a significant positive influence on Saudi EFL learners through LCP.

Reducing emotional barriers enhances learners' cognitive processing, facilitating comprehension and

internalization of input.

H4: IS ($i \rightarrow i+1$ Progression) has a significant positive influence on Saudi EFL learners through LCP.

Gradually increasing linguistic complexity promotes structured cognitive engagement, allowing learners to process and acquire new language effectively.

H5: CIE has a significant positive influence on Saudi EFL learners through LCP.

Active participation and meaningful interaction

improve pattern recognition and consolidation of language, enhancing acquisition outcomes.

Figure 4 illustrates the conceptual framework for this research, showing how five IVs, CIQ, EF, AFL, IS, and CIE, influence Saudi EFL learners through the mediating role of LCP. The framework highlights how structured input, repeated exposure, emotional support, scaffolding, and engagement collectively enhance natural language acquisition in Saudi EFL classrooms.

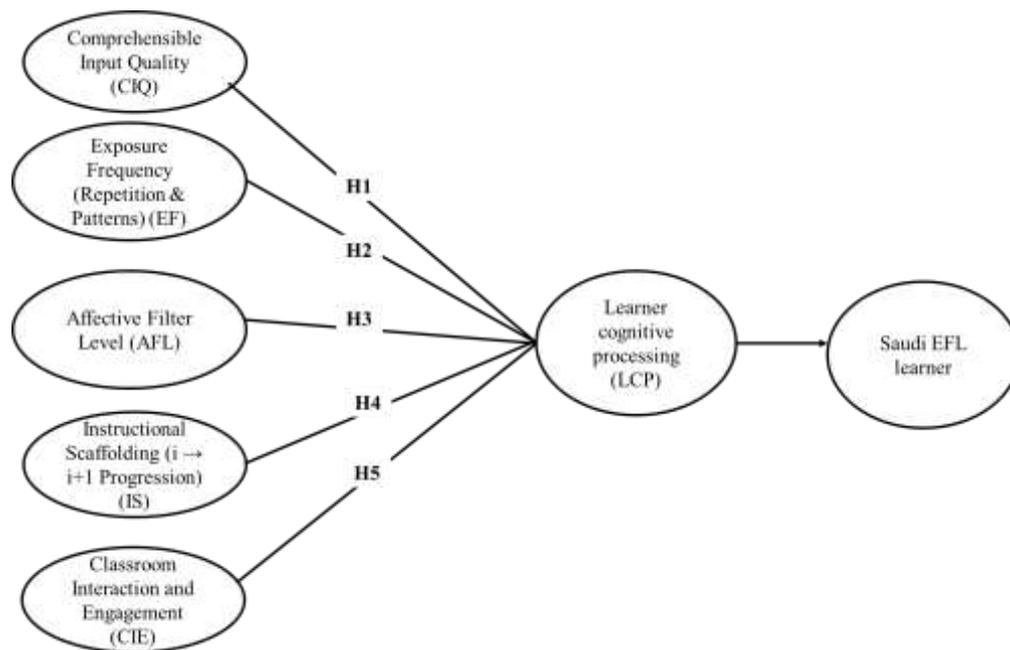


Figure 4: Conceptual Model Showing How Input-Related Variables Influence Cognitive Processing to Enhance Saudi EFL Acquisition.

3.3. Sample Questionnaires

CIQ: Measures clarity, relevance, and accessibility of teacher-delivered input to ensure learners can understand and process language at their “ $i+1$ ” level.

EF: Assesses how often learners are exposed to repeated patterns, which helps strengthen connections in the brain and supports natural language acquisition.

AFL: Evaluates emotional factors, including nervousness, confidence, and inspiration, which can block or enable the uptake of comprehensible effort.

IS ($i \rightarrow i+1$): Measures how well teachers provide gradually increasing complexity, helping learners progress from current knowledge (“ i ”) to slightly more advanced language (“ $i+1$ ”).

CIE: Assesses participation, peer discussion, and communicative practice, which help learners process input meaningfully and reinforce pattern recognition.

LCP: Measures students’ internal ability to recognize patterns, organize input, and consolidate knowledge, mediating the effect of IVs on language acquisition.

Saudi EFL learners: Assesses overall learning outcomes, including comprehension, fluency, vocabulary growth, and ability to handle “ $i+1$ ” input. Table 2 shows the Sample questionnaire assessing factors affecting English learning in Saudi EFL students, both the EGs and CGs.

Table 3 and Figure 5 provide responses of students to such aspects of instructions that influence English acquisition. The high percentage of responses to Agree and Strongly Agree represents the fact that CQI, EF, IS, CIE, and LCP are effective in language development.

Those findings suggest that application of connectionist principles and the Input Hypothesis of Krashen enhance knowledge, eradicates affective anxiety, and enhances general proficiency in English

in Saudi EFL classrooms.

Table 2: Questionnaire Items Designed to Measure Factors Influencing English Acquisition in Saudi EFL Classrooms.

Variable	Sample Questionnaire Questions
CIQ (IV)	1. How clearly does the teacher explain new vocabulary during lessons? 2. How relevant are the lesson examples to real-life situations?
EF (IV)	1. How often do you encounter the same vocabulary or grammar patterns across lessons? 2. How helpful is repetition in improving your understanding of English language patterns?
AFL (IV)	1. How comfortable do you feel asking questions in English during class? 2. How often do you feel anxious when learning new English topics?
IS (i→i+1) (IV)	1. How effectively do lessons gradually increase in difficulty as your understanding improves? 2. How well does the teacher break complex language into understandable steps?
CIE (IV)	1. How often do you actively participate in class discussions in English? 2. How encouraged do you feel to speak English with classmates during activities?
LCP (Mediator)	1. How often do you notice repeated patterns in vocabulary or grammar and remember them? 2. How easily can you apply learned language rules to new sentences independently?
Saudi EFL learners (DV)	1. How well can you understand English lessons without frequent explanations? 2. How confidently can you use new vocabulary and grammar in your own sentences?

Table 3: Distribution of Student Responses on the Likert Scale Measuring Instructional Factors Influencing Saudi EFL Language Acquisition.

Variable	1 → Strongly Disagree	2 → Disagree	3 → Neutral	4 → Agree	5 → Strongly Agree
CIQ	4%	7%	18%	42%	29%
EF	3%	9%	20%	40%	28%
AFL	5%	10%	22%	38%	25%
IS	2%	6%	17%	45%	30%
CIE	3%	8%	19%	43%	27%
LCP	4%	7%	21%	41%	27%
Saudi EFL	3%	6%	16%	46%	29%

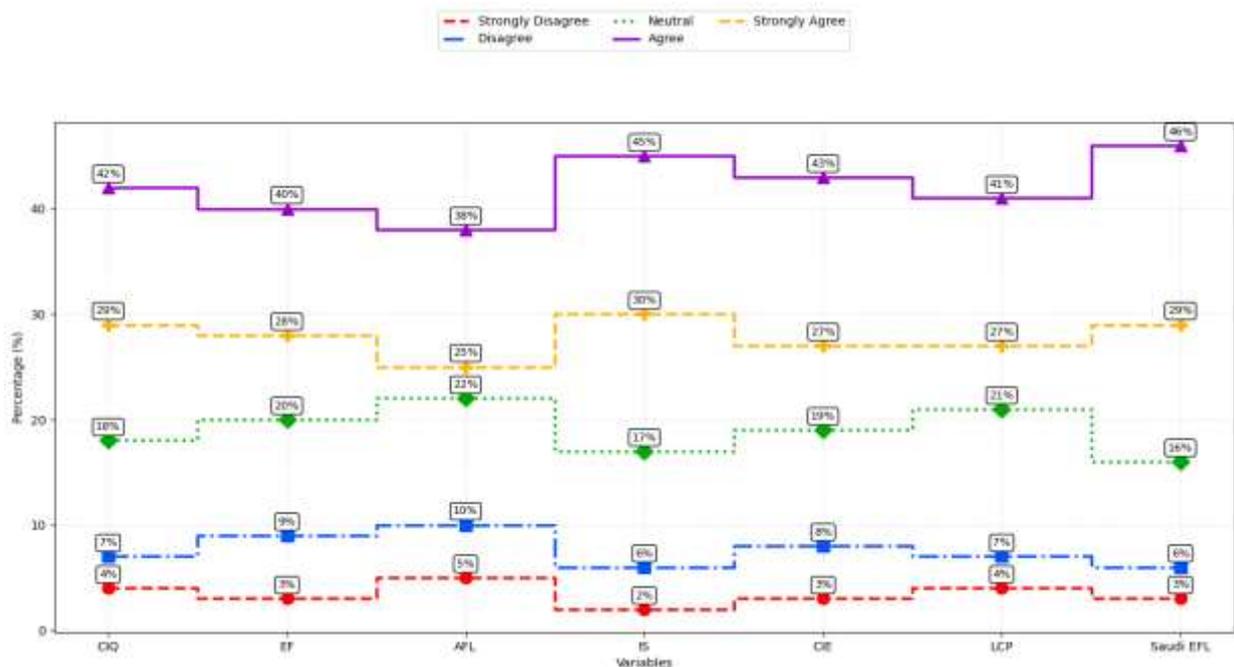


Figure 5: Likert-Scale Responses Showing Learner Perceptions of Factors Influencing English Acquisition Through Comprehensible Input in Saudi EFL.

3.4. Research Design

In a mixed-method quasi-experimental design,

data collected from 97 Saudi EFL students could be examined with IBM SPSS 25. MLR will be used to

determine the ability of the five independent factors to predict language acquisition. Path analysis of SEM will examine the mediatory role of the learner's cognitive processing. Whereas paired-samples t-tests will be used to assess pre- and post-input-based improvement of learning. The cumulative evaluation of all the assessments is the effect of connectionist input and Krashen's input theory in enhancing Saudi EFL.

4. RESULTS

Using the variables and components described in this section, conduct a comprehensive assessment of the relationships through MLR, evaluate causal paths via SEM, and compare group differences with paired sample t-tests.

4.1. MLR

MLR is used to examine how several IVs,

comprehensible input, exposure frequency, affective filter, scaffolding, and classroom interaction simultaneously predict the DV, English acquisition. The model estimates coefficients showing the strength and direction of each IV's effect, expressed as Equation (1).

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n + \epsilon \text{ ----- (1)}$$

Where Y= English acquisition, X₁...X_n= IVs, β= coefficients, ε= error term. The process involves data collection, assumption checking, model fitting, coefficient interpretation, and significance testing, showing how input, interaction, and scaffolding enhance acquisition. B (Unstandardized Coefficient): shows how much English acquisition changes with a unit change in IV. SE (Standard Error): measure of precision for the coefficient. β (Standardized Coefficient): for comparing the strength of predictors.

Table 4: MLR Analysis Showing the Impact of Instructional Variables on English Acquisition Outcomes.

Hypothesis	B (Experimental)	Std. Error	Beta	t	p-value	B (Control)	Std. Error	Beta	t	p-value
H1	0.42	0.08	0.35	5.25	<0.001	0.18	0.10	0.15	1.80	0.075
H2	0.31	0.07	0.28	4.43	<0.001	0.12	0.09	0.10	1.33	0.190
H3	0.29	0.06	0.25	4.83	<0.001	0.15	0.08	0.13	1.88	0.067
H4	0.38	0.07	0.33	5.43	<0.001	0.20	0.09	0.18	2.22	0.030
H5	0.25	0.06	0.22	4.17	<0.001	0.10	0.08	0.09	1.25	0.215
R ² / Adjusted R ²	0.72 / 0.70					0.34 / 0.30				
F-value	35.8				<0.001	8.5				0.001

According to the regression Table 4, all the IVs were significant predictors of English acquisition in the EG, which confirms H1-H5. H1 (B = 0.42, 0.35) and H2 (B = 0.31, 0.28) were the most significant ones, indicating the value of organised and repeated input. The other positive impacts on acquisition by LCP were H3 (B = 0.29, 0.25), H4 (B = 0.38, 0.33), and H5 (B = 0.25, 0.22). On the contrary, the non-significant

effects were weakly positive (0.09-0.18) in the case of the CG, which proves that instruction based on connectionism and input orientation positively affects Saudi EFL learners in their understanding, fluency, and recognition of patterns. Figure 6 (a) shows EG, and Figure 6 (b) shows the CGs of B and Beta values.

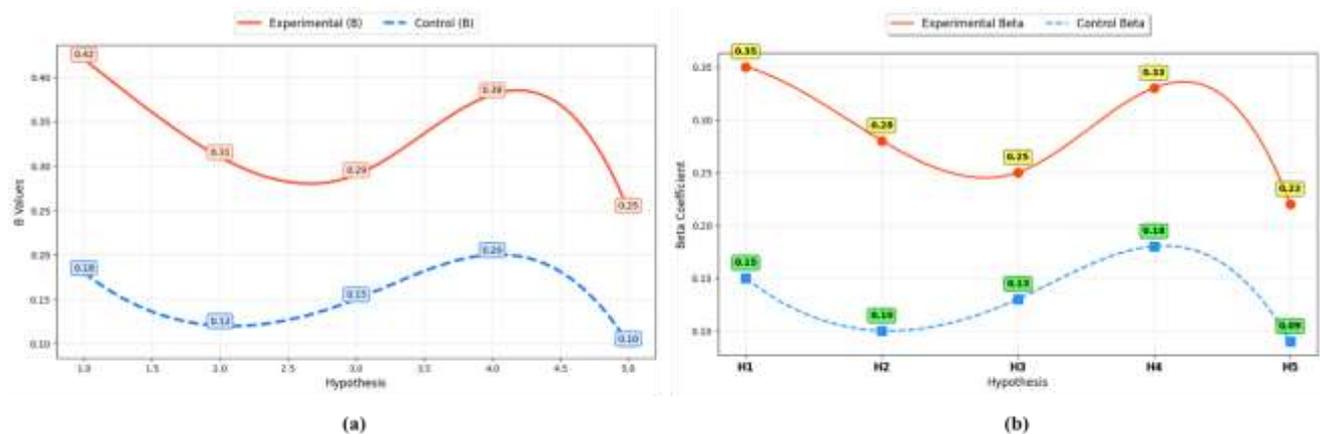


Figure 6: Comparison of EG and CG Regression (a) B-Values and (b) Beta Showing How Input-Related

Factors Predict English Acquisition.

4.2. Path Analysis

SEM with Path Analysis models relationships among variables, combining regression and factor analysis to estimate direct and indirect effects. Fit indices (CFI, RMSEA, χ^2) assess how well observed data support hypothesized paths, showing how IVs influence DVs through mediators like learner cognitive processing. Path analysis uses Equation (2):

$$M = aX + e_1, Y = bM + C'X + e_2 \text{----- (2)}$$

X IV, M, mediate variable, Y DV, a path coefficient from IV, b path coefficient from mediator, C^' direct effect of IV, e₁, e₂ errors in English Acquisition, measured via comprehension, vocabulary, and fluency. Direct Effect (β) is the immediate impact of an IV. Indirect Effect (β) is the effect of the IV on the DV through a mediator. Total Effect (β) is the sum of direct + indirect effects. Standard Error (SE) indicates the accuracy or stability of the assessed effect size (β). The p-value shows the effect is statistically significant.

Table 5: Path Analysis of Instructional Factors Influencing Saudi EFL Learners' English Acquisition via Cognitive Processing.

Hypothesis	Group	Direct Effect (β)	Indirect Effect (β)	Total Effect (β)	SE	p-value
CIQ → LCP → Saudi EFL	EG	0.30	0.32	0.62	0.05	<0.001
	CG	0.10	0.11	0.21	0.08	0.12
EF → LCP → Saudi EFL	EG	0.25	0.29	0.54	0.06	<0.001
	CG	0.08	0.10	0.18	0.07	0.14
AFL → LCP → Saudi EFL	EG	0.22	0.26	0.48	0.07	0.002
	CG	0.05	0.07	0.12	0.06	0.21
IS → LCP → Saudi EFL	EG	0.28	0.29	0.57	0.05	<0.001
	CG	0.07	0.08	0.15	0.07	0.18
CIE → LCP → Saudi EFL	EG	0.24	0.27	0.51	0.06	0.001
	CG	0.04	0.06	0.10	0.05	0.23

The path analysis Table 5 shows clear variances between the EG and CGs. In the EG, all instructional variables strongly predicted English acquisition, with high total effects: H1 (0.62), H2 (0.54), H3 (0.48), H4 (0.57), and H5 (0.51). These strong, significant values indicate that connectionist and Input hypothesis-based instruction enhanced learners' cognitive processing and linguistic gains. In the CG,

total effects were much weaker and non-significant: H1 (0.21), H2(0.18), H3 (0.12), H4 (0.15), and H5 (0.10). Overall, the results confirm that H1 and H4 significantly improve Saudi EFL learning outcomes. Figure 7 shows the comparative paths showing variable effects on cognitive processing and English acquisition outcomes (a) EGs and (b) CGs.

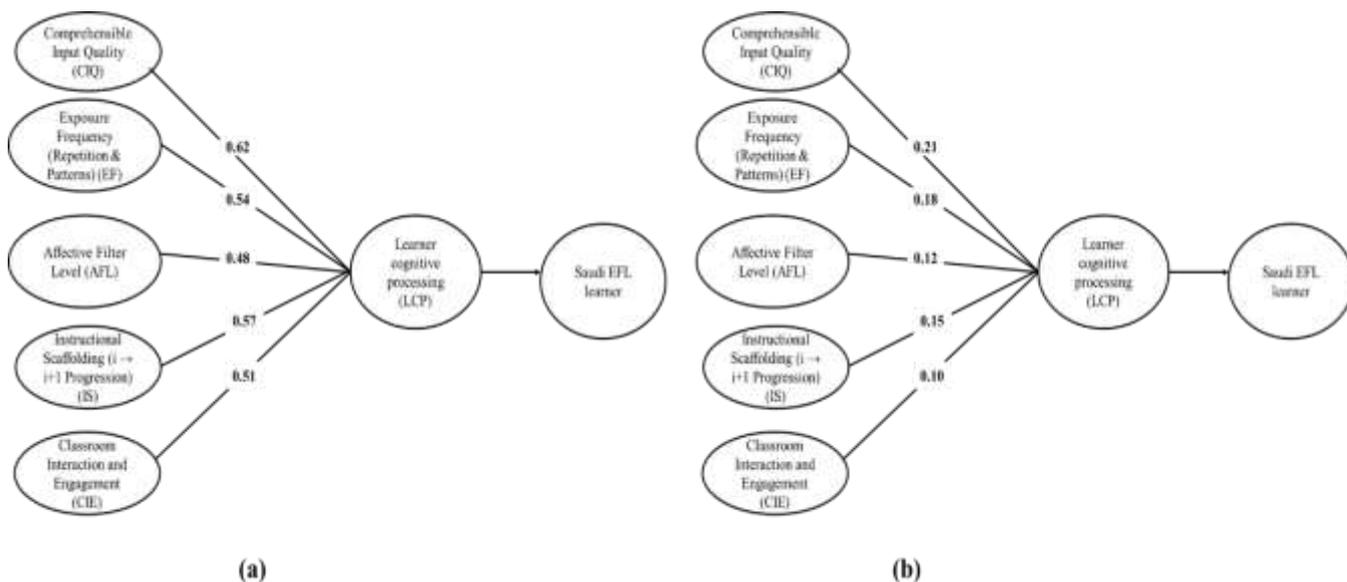


Figure 7: Path Analysis Comparing How Input-Related Variables Influence Cognitive Processing and English Acquisition

Acquisition in (a) EGs and (b) CGs.

4.3. Sample Paired-t test

A paired sample t-test analyzes the averages of two similar groups to determine whether a treatment has a significant effect on outcomes. For Saudi EFL learners, it evaluates differences between EG and CG scores. The test statistic is expressed as Equation (3):

$$t = \frac{\bar{d}}{sd/\sqrt{n}} \text{-----} (3)$$

Where \bar{d} is the mean difference, s_{dis} the standard deviation of differences, and n is the sample size. A significant t-value indicates the instructional method impacts English acquisition. Degree of freedom (df) evaluates the acquisition process.

Table 6: Table 6: Paired t-Test Results Comparing Pre-Test and Post-Test Scores of EG and CG Saudi EFL Learners.

Variable	Group	N	Pre-test Mean ± SD	Post-test Mean ± SD	Mean Difference	t-value	df	p-value
H1	EG	48	55.32 ± 6.21	68.45 ± 5.87	13.13	12.87	47	<0.001
	CG	49	54.89 ± 6.15	57.21 ± 6.02	2.32	2.14	48	0.036
H2	EG	48	53.78 ± 5.94	66.02 ± 6.11	12.24	11.65	47	<0.001
	CG	49	54.12 ± 6.00	56.01 ± 6.28	1.89	1.72	48	0.090
H3	EG	48	50.64 ± 7.12	63.95 ± 6.88	13.31	12.02	47	<0.001
	CG	49	51.02 ± 6.89	53.07 ± 7.10	2.05	1.91	48	0.061
H4	EG	48	52.87 ± 5.67	65.78 ± 6.01	12.91	11.89	47	<0.001
	CG	49	53.21 ± 5.85	55.12 ± 6.05	1.91	1.74	48	0.087
H5	EG	48	54.12 ± 6.00	66.45 ± 5.92	12.33	11.55	47	<0.001
	CG	49	53.87 ± 6.10	55.89 ± 6.25	2.02	1.88	48	0.065

According to the results of the paired t-test analysis, Table 6 for the EG-having participated in the intervention programme based on connectionist principles and Krashen’s Input Hypothesis, there were substantial overall improvements in all five IV. The results of the current investigation indicate that there was a statistically significant gain on H1 from 55.32 to 68.45 ($t = 12.87, p < 0.001$) and on H2 from 53.78 to 66.02 and H5 from 54.12 to 66.45, as evidenced by the t-value and p-values of the current research. Therefore, these gains suggest substantial cognitive gain with respect to English language

acquisition. Comparatively, the CG experienced minimal gains with only a slight increase in score for H1 from 54.89 to 57.21 ($p = 0.036$). In contrast, the other variables showed no statistical significance. Based upon these findings, it may be concluded that H1, H4, and H2 can increase Saudi EFL Learners’ comprehension, fluency, and engagement as evidenced by the use of the t-test analysis. Figure 8 (a) shows the pre- and (b) post-test means comparing experimental and control groups across all hypothesis.

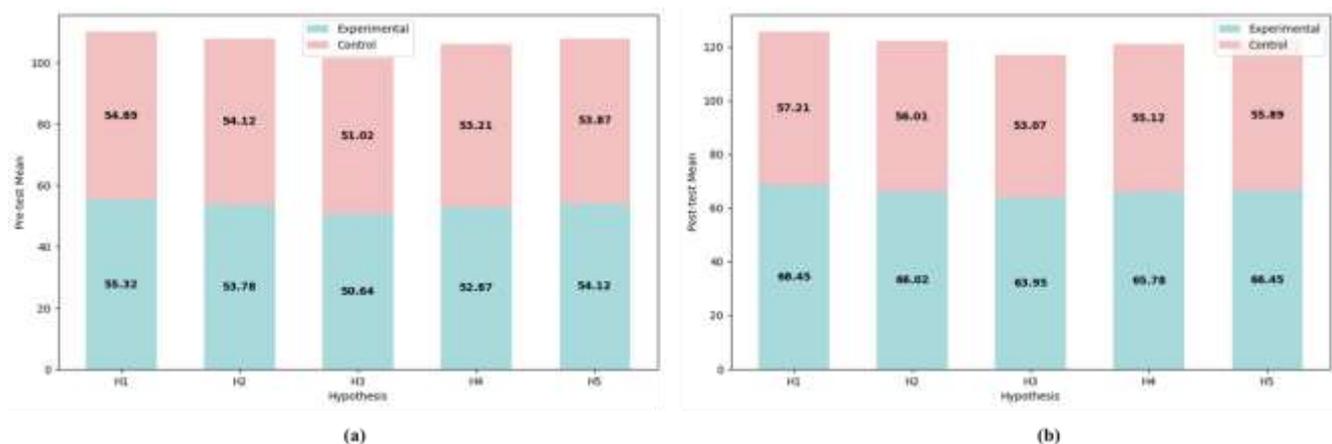


Figure 8: Visualization of (a) Pre- and (b) Post-Test Comparisons Showing Improved English Acquisition in EG Through Structured Comprehensible Input Exposure.

5. DISCUSSION AND CONCLUSION

The Foreign Language Classroom Anxiety Scale

(FLCAS) element organization in the Saudi Arabian environment, and to discover if the core FLCAS variables were indicative of English language performance as assessed by university evaluations, was explored in (Almesaar, 2022). The key FLCAS features were not connected with English language achievement, based on the non-significant linear regression analysis, which used these factors as antecedents and language proficiency as an indicator ($F = 0.479$; $p = 0.685$). The significance of employing YouTube as an instructional resource to enhance EFL teaching in Saudi Arabia was evaluated by (Zitouni et al, 2021; Yassin, 2024). The results for paired-sample t-test computations demonstrated a quantitatively significant variance ($p = 0.003$) throughout the competency stage, suggesting progress in students' communicating and listening capabilities at increasing fluency stages.

This investigation collectively confirms that connectionism, supported by Krashen's Input Hypothesis, significantly enhances Saudi EFL learners' acquisition. MLR results in the EG showed strong predictive effects of CQI ($\beta = 0.42$, $p < .001$), EF ($\beta = 0.31$, $p < .001$), and IS ($\beta = 0.38$, $p < .001$), while the CG displayed minimal effects ($\beta < .10$). These results confirm that structured $i + 1$ input facilitates cognitive mapping and strengthens neural connections. SEM path analysis further validated the model, revealing that cognitive processing mediated the influence of AFL (β indirect = 0.26), CIE ($\beta = 0.27$), and EF ($\beta = 0.27$), supporting the aim of demonstrating connectionism as a dynamic processing system. In contrast, the CG produced a weaker model fit (CIE = 0.06). This confirms that repeated exposure and scaffolded input accelerate progression from i to $i + 1$. Paired t-tests showed substantial gains within the EG for H1 ($t = 12.87$), H4 ($t = 11.89$), and H3 ($t = 12.02$), whereas the CG's improvements were marginal (t (1.74 - 2.14)). These findings align with the proving that structured,

comprehensible input and repeated exposure promote measurable Saudi EFL acquisition.

When students receive meaningful, sufficient input from teachers through meaningful classroom activities that support their learning efforts, they will acquire a second language more effectively than when they receive such input without these supporting conditions. This research demonstrated the effectiveness of connectionist, input-hypothesis-based methodologies with 97 Saudi EFL students through surveys, classroom observations, and teacher ratings of students' performance using scaffolding to create material and provide feedback during oral reading. Statistical analyses using IBM SPSS 25 MLR H1: $\beta = .42$, $p < .001$, path analysis Total Effect (β) 0.62 in H1, t-tests H1 68.45, $P < 0.001$ revealed intelligible information, repeated exposure, scaffolding, interaction, and low affective filter as strong predictors of improvement. In summary, the findings of this research lend credence to the importance of providing students in Saudi EFL classes access to high-quality, organized, and focused materials as well as support systems to aid them in their second language learning process. Several limitations of this research were imposed by the use of a limited sample of Saudi students from one area, a short length of time for the research, and respondents' self-reported data, which would limit the ability to generalize these results to other students or to fully assess the long-term effects of these methods on language acquisition. Future research would benefit from the inclusion of larger, more diverse student populations and from the use of a longer intervention time frame, the inclusion of various types of digital input (e.g., images, audio recordings), and the exploration of long-term retention methodologies, brain processing, and training models to support EFL teachers implementing connectionist methodologies.

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