Zanco Journal of Human Sciences (ZJHS)

TYPE: Original article
DOI https://doi.org/10.21271/zjhs.30.3.13

Pedagogical Approach to Applied Linguistics Module: Implementing KUD- and 4H- Based Instruction for Improving Third- Year University Students' Performance

OPEN ACCESS
*Corresponding author
Bekhal Latif Muhedeen
bekhal.muheden@univsul.edu.iq

Bekhal Latif Muhedeen/English Department, College of Languages, University of Sulaimani, Sulaimani, Kurdistan Region/ Iraq

RECEIVED :16 /09/2025
ACCEPTED :10/10/ 2025
PUBLISHED :15/06/2026

Keywords:

,
KUD Strategy,
4H Strategy,
Applied Linguistics,
University Students.

Abstract

Using a quantitative research design, the current study investigates the impact of Know, Understand, Do (*KUD*) and Head, Heart, Hands, Health (*4H*) instructional strategies on the academic performance of third- year Kurdish EFL university students in the subject of *Applied Linguistics*. Forty-five students were grouped equally into three sets: two experimental (*KUD* and *4H*), and a control group exposed to traditional forms of instruction. The researcher designed a 30- item test comprising both objective and subjective items, aligned with the content of the designated *Applied Linguistics* textbook. A total of 25 lesson plans were prepared for each group. Following instrument validation and sample equalization, a pretest- posttest design was implemented. Subsequently, the necessary statistical analyses were conducted, which led to the following findings: (1) all groups showed improvement in mastering the designated material; (2) both experimental groups surpassed the control group; (3) the *KUD* group achieved the highest academic performance among the three groups; and (4) the *4H* group exceeded the control group considering academic performance. In the light of these results, the adoption of these instructional strategies into pedagogical practices is recommended to increase instructional effectiveness and student outcomes.

1.Introduction

In collegiate courses, it is vital to employ pedagogically sound instructional strategies that bridge theoretical knowledge with practical application to promote meaningful learning and active participation. Among these, the *KUD* and *4H* strategies are notable for their structured, systematic and student- centered nature. Both offer coherent, adaptable frameworks that help teachers efficiently translate complex theoretical concepts into hands- on learning experiences.

The *KUD* (Know, Understand, Do) strategy aims to connect new learning with prior knowledge to deepen comprehension and promote practical engagement. It involves three sequential learning stages: (1) Know: the acquisition of foundational facts and core concepts related to a topic; (2) Understand: the interpretation and internalization of these concepts; and (3) Do: the application of acquired knowledge in practical, real- world contexts (Al-Abdullah and Ward, 2022; Awda and Youssef, 2025; Suwaidi & Hassan, 2023; Tomlinson, 2022; Wahed and Neama, 2024).

In contrast, the *4H* instructional strategy, known for its holistic approach to student development, centers on the overall growth of students across four interrelated domains, represented by the 4- H acronym: (1) Head, which highlights students' cognitive and intellectual growth by encouraging critical thinking and problem- solving skills; (2) Heart, which aims to promote emotional development, build constructive attitudes, and engrain strong values and meaningful relationships within the learning environment; (3) Hands, which focus on building practical skills by engaging in active learning through hands- on tasks and activities and addressing real- life issues; and (4) Health, which focuses on student's overall contentment and well- being by emphasizing the importance of physical and mental well- being through balanced lifestyle habits. These domains together establish a flexible educational framework capable of addressing a wide range of learner needs (Altaee, 2020; Gazibara, 2013; Jagannathan, Camasso and Delacalle, 2018).

The *Applied Linguistics* module, similar to the field it represents, involves the convergence of theoretical knowledge and practical expertise, making it a complex and often challenging subject- particularly for students studying English as a foreign language. It demands not only conceptual mastery, but also the ability to translate theory into practice. Conventional teaching methods may not always suffice to meet these needs. This realization prompted the researcher to investigate the impact of the selected instructional strategies on third- year EFL students' academic performance in this module and to determine which method more effectively facilitates their academic progress. Additionally, the research aims to add to the limited academic discourse on novel pedagogical practices in the subject area.

Drawing on her teaching experience, the researcher observed that *Applied Linguistics* is frequently taught through traditional, teacher- centered methods that limit opportunities for critical thinking and practical skill development. This stands in stark contrast to contemporary educational philosophies that prioritize meaningful learning, skill-building, and academic growth. In Kurdish EFL university settings, third-year students often struggle to apply theoretical knowledge effectively, highlighting a persistent gap between instruction and practice. To date, no research has examined the use of structured, student-centered pedagogies in this context. *KUD*- and *4H* represent promising yet underutilized approaches that contribute to mental, practical, and holistic learning outcomes. This study investigates the potential of these targeted strategies to enhance *Applied Linguistics* learning among Kurdish EFL students by fostering deeper understanding and practical competence. Addressing this pedagogical gap has the potential to transform *Applied Linguistics* instruction into a more effective and enriching learning experience for EFL university students.

To achieve the stated research objectives, the study seeks to answer the question: "How does the implementation of *KUD*- and *4H*-based instruction in *Applied Linguistics* module affect the academic performance of third-year university students?" Accordingly, the subsequent null hypotheses were proposed:

First Hypothesis: No statistically significant variation is found between the mean posttest scores of students in the three research groups at the 5% significance level:

A. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (*KUD* strategy) and the second experimental group (*4H* strategy).
B. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (*KUD* strategy) and the control group (traditional instruction).
C. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the second experimental group (*4H* strategy) and the control group (traditional instruction).
Second Hypothesis: No statistically significant variation is found between the mean pretest and posttest scores of students in the three research groups at the 5% significance level:
A. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the first experimental group (*KUD* strategy).
B. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the second experimental group (*4H* strategy).
C. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the control group (traditional instruction).

1. Literature Review

1.1 Theoretical Framework

2.1.1 Applied Linguistics Module

Applied Linguistics is a mandatory third-year subject for English Department students at the College of Languages, University of Sulaimani, delivered three hours weekly in the first semester. Beyond its academic role, it supports linguistic proficiency, analytical thinking and practical application of theoretical concepts. Despite its significance, current teaching methods often fail to contextualize content effectively and connect linguistic concepts to students' personal experiences. Effective instruction in *Applied Linguistics* should transcend mere content delivery to develop analytical skills, communicative competence, and learner autonomy.
The strategies in focus seek to overcome the pedagogical limitations by providing a more interactive learning experience that promotes comprehension, retention, and meaningful engagement. They align with contemporary pedagogical theories and address the specific needs of EFL students, who frequently contend with rote learning practices and limited access to learner-centered practices.

2.1.2 The *KUD* Instructional Strategy: Know- Understand- Do

2.1.2.1 Origins and Definitions

KUD **(**Know, Understand, Do) is an instructional strategy whose structured framework is primarily attributed to the work of Wiggins and McTighe (1998) on the *Understanding by Design (UbD)*model (Varela, Polo, García, & Martínez, 2010; Wiggins and McTighe, 2005). UbD promotes the concept of backward design, which begins with identifying intended learning outcomes and then aligning instruction and assessment accordingly. Within this model, *KUD* serves as a tool for defining learning goals, enabling teachers to clearly articulate knowledge, conceptual understanding, and practical skills that students expect to demonstrate (Shiel, 2016; Wormeli, 2023).
Following the contributions of Wiggins and McTighe, Carol Ann Tomlinson (1999) adopted and widely promoted *KUD* in the context of differentiated instruction to identify the learning outcomes students should attain. As a professor at the University of Virginia, and an expert in the field of differentiated instruction, she is renowned for her work in helping teachers to effectively address the different educational requirements of students in heterogeneous classrooms. She emphasizes that effective instruction must go beyond rote knowledge, guiding students toward deep conceptual understanding and practical application. Thus, she defines *KUD* as an instructional planning tool used to clarify “what is going on in the classroom so that learners have multiple options for accessing information, building meaning for ideas, and expressing what they have learned”

(Tomlinson, 2001, p. 1)

In *Understanding by Design* (2nd ed., 2005), Wiggins & McTighe advocate for precisely specifying what students should know, understand, and be able to do (*KUD*) as a foundation for aligning instruction with assessment. This view further supported by Conklin (2010), who frames *KUD* as an organizational framework for learning that categorizes educational objectives into knowledge, understanding, and skills, thereby promoting deeper cognitive engagement. The conceptualization of this strategy has been further shaped by contributions from various scholars, highlighting the value of *KUD* in fostering critical thinking and designing tasks that transcend rote content by clearly distinguishing between factual knowledge, conceptual understanding, and practical skills, making it a practical tool for instruction (Al-Saady, Al-Fahdawy and Al-Fhdawy, 2024; Rinkema and Williams, 2018).

2.1.2.2 Componential Analysis of the *KUD* Strategy and its Pedagogical Implications

The *KUD* strategy structures learning objectives into three categories- representing three interconnected goals of effective learning, as follows: **1- (K)** means **(Know)**: During this phase students are expected to acquire essential content related to a particular subject area. Knowledge is a revolution in the students' understanding as it supports deeper learning; **2- (U)** means **(Understand)** which involves conceptual insights that transcend rote factual knowledge to include the key concepts, principles, or "big ideas" that students should grasp. It ensures that students comprehend beyond rote memorization and enables them to foster in-depth comprehension of the concepts by making connections, inferring meanings, and applying them in varied contexts; and **3- (D)** means (**Do)**: This portion focuses on the skills, processes and applications that students are expected to perform or demonstrate. They apply what they have learned and understood through actions like writing, speaking, problem-solving, and creating. This may involve writing an essay, addressing a problem, participating in a discussion, or creating a project. Such tasks are typically part of performance-based assessments (Al-Bahadli, 2024; Ginsberg, 2015; Rinkema and Williams, 2018; Strickland, 2009; Qatami, 2013; Tomlinson, 2001; Wormeli, 2006).

2.1.2.3 Dynamics of Teacher and Student Roles in *KUD* Implementation

KUD strategy redefines instructional dynamics by transforming the traditional roles of teachers and students, turning the teaching- learning process into a collaborative endeavor. Within this framework, both parties act as co-constructors of knowledge, equally engaged in shaping and guiding the learning experience (Shiel, 2016; Tomlison, 2022).

Serving as planners, guides, facilitators, and assessors, teachers fulfill a multifaceted role that moves beyond content delivery by crafting learning experiences that balance knowledge, comprehension and skill development (Wormeli,2006; Glass, 2012). They are responsible for managing classroom dynamics, facilitating discussions, addressing misconceptions and assessing performance in relation to predefined learning goals. Additionally, they align instruction with clear objectives, foster meaningful engagement and ensure appropriate levels of challenge (Wiggins & McTighe, 2005; Strickland, 2009).

In *KUD*- oriented instruction, both teachers and students hold active, interdependent roles, creating a dynamic learning environment characterized by mutual engagement. It prioritizes student agency over passive content absorption, marking a shift away from traditional teacher- dominated models of instruction. Instead, it emphasizes student responsibility, active engagement, and reflection. Students are active participants who construct meaning and apply skills purposefully. By clarifying what is being learned, why it matters, and how it is applied, the framework empowers student ownership and supports deeper, long- term understanding (Varela, Polo, García, & Martínez, 2010).

Effective *KUD* implementation begins with clearly defined objectives that promote the development of factual knowledge, conceptual understanding and essential skills. These objectives guide teachers in designing purposeful learning activities, delivering content effectively, assessing student understanding, and providing targeted, actionable feedback. They also serve as a foundation for reflective practice, informing post-lesson analysis and supporting continual instructional

improvement (Al-Saady, Al-Fahdawy and Al-Fhdawy, 2024; Ginsberg, 2015, Jawad and Ibrahim, 2021).

2.1.3 The *4H*- Instructional Strategy

2.1.3.1 An Overview of the *4H* Strategy and its Core Components

4H instructional strategy is a holistic pedagogical framework that connects academic rigor with personal and social competencies to foster whole-person development. Its four H's, Head, Heart, Hands, and Health, nurture the whole student by addressing cognitive, practical, emotional, and well-being dimensions of learning. As a result, the educational context becomes intellectually rigorous, emotionally supportive, and developmentally holistic (Gazibara, 2013; Jagannathan, Camasso and Delacalle, 2018).

Thus, *4H* engages students across four essential domains of personal and academic development, valuing knowledge, application, emotion, and well-being equally. Head (Cognitive) focuses on developing students' cognitive skills by teaching the theoretical knowledge and concepts related to the subject matter. Hands (Behavioral) involves experiential learning by emphasizing skill development and real-world application of knowledge through hands-on activities and meaningful participation. Students are encouraged to apply their learning in practical contexts. Heart (Affective) fosters emotional connection, motivation and interpersonal awareness towards the content. Health (Well-being) supports overall well-being by creating a positive and supportive learning environment to promote self- confidence, ethical awareness, social responsibility, and mental wellness. These interconnected dimensions create a balanced, student-centered environment that bridges academic mastery with personal growth and practical readiness (Bahroni, 2018)

Aligned with social-emotional learning (SEL) principles, the *4H* strategy cultivates emotional regulation, motivation, and responsible decision-making. When students feel both intellectually challenged and emotionally supported, they engage more deeply with content. Due to its comprehensive scope, the *4H* is applied across diverse educational settings, engaging students cognitively, emotionally, behaviorally, and ethically (Al-Taee, 2020).

2.1.3.2 Teacher and Student Roles in *4H*- Based Instruction

In a *4H*-based instructional setting, both teachers and students play active, complementary roles to promote whole-person learning. Teachers act as facilitators (Head) who guide students' cognitive growth by challenging students to think deeply and question actively; experiential designers (Hands) that connect learning to real-life practice by immersing learners in relevant, hands-on experiences; emotional connectors (Heart) fostering empathy, self-reflection, and respect for diverse perspectives to encourage students to connect with themselves and others; and well-being coordinators (Health) embed ethical awareness, mental health, and social responsibility into instruction to make students feel safe, supported, and included (Al-Atbi & Abdul Karim Al Bayati, 2022; Diyala and Abdel Karim, 2022; Jagannathan, Camasso and Delacalle, 2018).

Students, in turn, are empowered as proactive agents in the learning process, taking ownership of their educational journey and engaging meaningfully with content, collaborating with peers and reflecting on both academic and personal growth.

With this shared responsibility, teachers and students co-create a learning environment that nurtures the whole learner by strengthening student agency and deepening engagement across all four dimensions.

By offering an inclusive pedagogy that addresses the full spectrum of student development, this strategy has increasingly been adapted for educational purposes, particularly in holistic learning and character education.

2.1.4 Pedagogical Applications of *KUD* and *4H* in the Kurdish EFL Context

Indeed, there is no singular pedagogical method that is universally effective across all educational contexts, as each academic subject has distinct characteristics and instructional demands. Effective teaching requires the adoption of strategies that correspond to the particular content, objectives, and cognitive complexity of the subject matter. Consequently, educators must move beyond one- size-

fits- all approaches and embrace subject-specific strategies to meet the intellectual demands of diverse fields and optimize student engagement and learning outcomes. Relying on uniform pedagogical practices may, in fact, hinder rather than enhance student understanding and outcomes (Al-Taee, 2020; Bugaj, Budzanowska-Drzewiecka, & Mikołajczyk, 2023).

In the current study, *KUD* and *4H* strategies are independently implemented in Kurdish EFL *Applied Linguistics* classes to enhance instructional effectiveness. *KUD* categorizes learning objectives into three dimensions: factual knowledge, conceptual understanding and applied practice, thereby enabling systematic and targeted instruction. Alternatively, the *4H* strategy covers cognitive, practical, emotional, and ethical aspects of learning, promoting inclusive and well-structured learning experience. They foster a learning environment that is both academically rigorous and emotionally and personally supportive.

While not integrated, both strategies contribute significantly to student development- *KUD* through purposeful planning and targeted instruction, and *4H* encouraging deeper engagement and personal growth. They support a balanced and multifaceted approach to teaching *Applied Linguistics* in Kurdish EFL classrooms.

2.2 Previous Studies

Given the absence of empirical studies that examine these two instructional strategies within a single investigation, the related literature will be organized into two distinct sections, each addressing one strategy independently. While the existing studies do not specifically target English language pedagogy, both strategies have demonstrated effectiveness across various academic disciplines. Their findings shed light on their pedagogical impact and contribute to the foundational rationale for the present research.

2.2.1 Previous Studies on *KUD* Strategy

Awda and Youssef (2025) conducted a study at Al Ain University, a private university in the United Arab Emirates, to examine how an educational method based on the *KUD* strategy influenced basketball free-throw shooting skills and visual-spatial intelligence in freshman physical education students. The experimental group, taught using the *KUD* strategy, showed significant improvements in skill development compared to those receiving standard instruction. The research highlighted that the *KUD* approach enhanced student engagement and facilitated better learning outcomes. The study emphasized the importance of innovative teaching strategies in physical education that are tailored to students' educational needs. The results affirm the positive impact of *KUD* in improving both cognitive and athletic performance.

Al-Saady, Al-Fahdawy and Al-Fhdawy's (2024) research examined the effectiveness of the *KUD* strategy on enhancing extended thinking and mastery of volleyball serving skill among second- year students at the Faculty of Physical Education and Sports Sciences, University of Wasit in 2023-2024. From a total population of 185 students, a sample was selected: 100 students for the extended thinking scale, 10 for the pilot test, and 40 students distributed across two groups- an experimental group and a control group (20 students in each) for the actual experiment. Over a series of 90-minute sessions, the experimental group utilized *KUD*- based teaching, while the control group received conventional instruction. They followed a semi-experimental design, involving pre- and post-tests for both groups. Analysis demonstrated that the *KUD* strategy positively influenced students' problem-solving abilities, idea development, and improved performance in volleyball serving skills. The students' commitment, cooperation, and consistent participation contributed to this improvement. Clear teaching and practice helped them perform better and think more deeply. Based on the research results, the researchers called for applying the *KUD* strategy in physical education contexts to boost student motivation and learning. They also suggested using the extended thinking scale in future studies to measure students' cognitive development and skill integration.

At Al-Mustansiriya University, Jawad and Ibrahim (2021) pursued a systematic investigation into the impact of the *KUD* strategy on enhancing mathematical problem- solving skills among primary school students. A total of 67 fifth- grade female students from Sheikh Maarouf Elementary School

in the academic year of 2020-2021 were involved as the sample of the study who were randomly assigned to either an experimental group (34 students using *KUD* strategy) or a control group (33 students taught through traditional methods). To assess the students' performance, a 16- objective item test, verified for both validity and reliability, was administrated. Analysis of the pre- and post-tests indicated that students taught with the *KUD* strategy performed significantly better than their peers in the traditional teaching group. Based on the findings, the researchers offered some recommendations and proposed directions for future research.

2.2.2 Previous Studies on *4H* Strategy

In 2022, Diyala and Abdel Karim explored the impact of *4H* strategy on second-grade intermediate students' science achievement and creative thinking. Sixty students were purposively sampled from Birir Intermediate School for Boys in Baquba and equally split into experimental and control groups. Matching on chronological age, prior academic achievement, intelligence scores, and creative thinking performance was done before intervention and testing. Following this, the intervention was administered and the research instruments were distributed. Data analysis using an independent samples t-test displayed that the *4H* instructional group achieved significantly greater results on both tests. Based on the research results, several recommendations and suggestions were made.

To investigate the educational impact of the *4H* strategy, Al-Taee (2020) conducted a quasi-experimental study on its impact on academic achievement and geographical thinking among 46 third year Geography students at the College of Education for Humanities, University of Mosul. The participants were categorized into a 20- student experimental group (taught via *4H* strategy) and a 26- control group (taught using conventional methods). The experiment was implemented during the first semester of the academic year 2019-2020. Both groups completed geography achievement and geographical thinking tests before and after the intervention. Statistical analysis of the results demonstrated that the experimental group, compared to the control group scored higher on both tests.

The existing literature demonstrates that the *KUD* and *4H* strategies can enhance student outcomes and critical thinking across various disciplines. However, their implementation in Kurdish EFL contexts remains largely unexamined. This study aims to bridge that identified gap by investigating the effectiveness of both strategies in improving *Applied Linguistics* performance among Kurdish EFL university students—a topic and sample not previously explored in connection with these instructional approaches. The present study constitutes the first scholarly effort to systematically examine both pedagogical strategies within a single investigation, as well as the first empirical research to explore this specific topic within the context of English language instruction in the Kurdistan Region. Unlike earlier studies that employed two-group experimental designs, the current research utilizes a semi-experimental design with three evenly balanced university-level instructional groups, thereby enhancing the study's credibility and potential for broader applicability.

2. Methodology and Data Collection

This portion of the paper explains the methodology employed to examine the effectiveness of the selected instructional strategies on the academic performance of third-year Kurdish EFL students in *Applied Linguistics* class.

3.1 Research Design

A semi- controlled, quantitative experimental design was utilized in this study, featuring pre- and post-tests and a control group to evaluate the impact of two instructional strategies—*KUD* and *4H*—on third-year Kurdish EFL students' performance in *Applied Linguistics*. The design involved three groups and was intended to measure performance changes resulting from the instructional interventions. Details regarding the structure and implementation of the experimental and control groups are provided in Table 1:

Table 1: Structure of the Experimental Design

Group	Independent Variable	Dependent Variable	Tool
Experimental Group 1	*KUD* Strategy	Performance in *Applied Linguistics*	Validated Pre- and Post- Tests
Experimental Group 2	*4H* Strategy		
Control Group	Conventional Instruction		

As the above table indicates, the first experimental group received instruction based on the *KUD* strategy**,** while the second experimental group was taught using the *4H* strategy. The control group, serving as a baseline for comparison, followed traditional instruction without exposure to either intervention. The aim was to determine the effect of these instructional strategies on student performance in *Applied Linguistics*, the primary dependent variable.

3.2 Participants

The sample of this study comprised 45 third-year undergraduate students enrolled in *Applied Linguistics* module at the University of Sulaimani- College of Languages- English Department, assigned randomly and equally to three groups (n = 15 each), as shown in Table 2:

Table 2: Distribution of Participants by Group and Instructional Strategy

Group	Instructional Strategy	Number of Participants (n)	Total
Experimental Group 1	*KUD*- Based Instruction	15	45
Experimental Group 2	*4H* – Based Instruction	15	
Control Group	Conventional Instruction	15	

3.3 Sample Equivalence

Sample equivalence is a vital methodological step that strengthens the study's internal validity. Prior to the intervention, the researcher conducted appropriate statistical procedures to ensure that the assigned groups were comparable in terms of IQ test scores, chronological age and prior knowledge.

3.3.1 Pre-Intervention IQ Control

Although intelligence is not the sole determinant of academic achievement, it significantly influences students' capacity to acquire and apply new information (Deary, Strand, Smith, and Fernandes, 2007; Rohde and Thompson, 2007). Several psychometrically validated non-verbal IQ tests commonly employed in academic research include the Cattell Culture Fair Intelligence Test (CFIT), the Universal Nonverbal Intelligence Test (UNIT)**,** Raven's Progressive Matrices**,** and the Naglieri Nonverbal Ability Test (NNAT)(Althoff, 2016; Lohman, 2005).

To minimize the impact of individual cognitive differences, Scale 3 of the Cattell Culture Fair Intelligence Test (CFIT)- a non- verbal, culturally fair measure of intelligence, was administered prior to the intervention (Jaušovec & Pahor, 2017; Manglik, 2024; Salkind, 2007). Developed by Raymond B. Cattell, CFIT is widely recognized for its reliability**,** validity, and practicality in educational research settings. The scale consists of 50 items distributed across four subtests**-** Series Completion**,** Classification**,** Matrices**,** and Conditions**.** On 17/10/2024, the test was conducted in a group format over approximately fifty minutes**,** scored using validated procedures to generate IQ-equivalent metrics. As appears in Table 3, the collected IQ scores were analyzed via a one-way analysis of variance (ANOVA)**,** which indicated no statistically significant variance across groups ($p > .05$), confirming baseline equivalence in cognitive ability. Accordingly, any observed effects in subsequent analyses are attributable to the intervention rather than to pre-existing cognitive disparities among the participants.

Table 3: One-Way ANOVA Results for IQ Score across Participant Groups

Variable	Group	Mean Score	Std. Deviation	df	Calculated F	Tabular F	Significance Level (0.05)
Intelligence Level	Experimental 1	29.10	7.16	43	0.133	3.22	Not Significant
	Experimental 2	28.18	8.44				
	Control Group	28.33	7.61				

The above data show that the calculated F-value for the IQ test (0.133) was smaller than the tabular F- value of 3.22 at the 0.05 significance level, with degree of freedom (df) of 43. This result suggests that there are no statistically significant differences in IQ scores among the groups, confirming that participants had comparable cognitive abilities prior to the intervention; thereby increasing confidence that any observed differences in academic performance can be confidently attributed to the instructional strategies employed, rather than to pre-existing differences in intelligence.

3.3.2 Pre-Intervention Age Control

All participants were third-year undergraduates enrolled in the same academic program. Chronological age was precisely calculated (in years, months, and days**)** using each participant's date of birth and the experiment start date, to control for age-related confounding. A one-way ANOVA revealed no significant age differences between the groups ($p > .05$):

Table 4: Chronological Age Comparison across Participant Groups

Variable	Group	Mean Score	Std. Deviation	df	Calculated F	Tabular F	Significance Level (0.05)
Students' Age	Experimental 1	185.50	9.13	43	0.231	3.22	Not Significant
	Experimental 2	186.21	10.22				
	Control Group	185	10.71				

The calculated F-value for chronological age (0.231) is smaller than the tabular F- value of 3.22 at the significance level of (0.05), with degree of freedom of 43, evidencing no notable variance in this variable and thereby affirming baseline equivalence. This control enhances internal validity by attributing observed effects to the intervention rather than age variability.

3.3.3 Pre-Intervention Prior Knowledge Control

To attribute differences in learning outcomes to the instructional intervention rather than prior knowledge, all participants completed a baseline *Linguistics* test on 20/10/2024. The results are presented below in Table 5:

Table 5: Prior Knowledge Comparison across Participant Groups

Variable	Group	Mean Score	Std. Deviation	df	Calculated F	Tabular F	Significance Level (0.05)
Prior Knowledge	Experimental 1	71.30	9.13	43	0.180	3.22	Not Significant
	Experimental 2	71.12	8.22				
	Control Group	70.63	8.38				

As far as the prior knowledge is concerned, the one-way ANOVA revealed no significant group differences ($p > .05$), as the calculated F-values (0.180) was smaller than the tabular F- value of 3.22 at the 0.05 significance level. This confirms comparable prior knowledge and an equivalent baseline foundation. Therefore, any ensuing changes in outcomes can be ascribed to the instructional strategies implemented rather than to initial content familiarity.

Students' IQ test scores, chronological age, and prior knowledge were key variables used to confirm the comparability of the groups. Controlling these variables ensured that improvements were attributable to the instructional intervention, enhancing the accuracy of the findings and reflecting the intervention's true impact.

3.4 Research Requirements

In this study, core elements of the design were carefully planned in advance to uphold experimental integrity. Preparation included standardized materials, expert- validated content, group-specific instructional strategies, and explicitly defined procedures for instruction, timing, and assessment to control extraneous variables.

3.4.1 Selection of Instructional Material

To maintain content consistency across all study groups, the researcher selected *Applied Linguistics I for BA Students in English* by Judit Sárosdy, Tamás Farczádi Bencze, Zoltán Poór, Marianna Vadnay **(**2006), published by the Bölcsész Konzorcium in Budapest, Hungary. This widely used undergraduate textbook covers a broad range of essential topics. The current study focused on the first six chapters, which have been validated for academic and scientific relevance through expert review.

Identical content was delivered through distinct instructional methods for each group: Experimental Group 1 followed *KUD* strategy, emphasizing Knowledge (linguistic content), Understanding (theoretical concepts), and Doing (practical application); Experimental Group 2 used the *4H* strategy, targeting Head (cognitive understanding), Hands (skills), Heart (affective domain), and Health (ethical and social responsibility) and the Control Group received traditional instruction without a defined pedagogical framework.

3.4.2 Development of Behavioral Objectives

Behavioral objectives aligned with Bloom's hierarchical cognitive model were formulated, as shown in Table 6, totaling 150 to guide instruction and assessment across the six chapters.

Table 6: Distribution of Behavioral Objectives by Chapter and Bloom's Taxonomy Levels

Chapters	Remembering	Understanding	Applying	Analyzing	Synthesizing	Evaluating	Total
First	3	4	3	6	8	8	32
Second	1	2	2	4	2	1	12
Third	2	1	4	5	6	6	24
Fourth	4	3	2	3	4	5	21
Fifth	5	4	6	7	6	8	36
Sixth	2	4	5	4	7	3	25
Total	17	18	22	29	33	31	150

3.4.3 Preparation of Lesson Plans

Daily lesson plans (n=25 per group) were prepared for each group in alignment with the defined behavioral objectives. A sample of these plans was submitted to specialists for validation regarding pedagogical appropriateness, content integrity, and consistency with the respective instructional strategies.

3.4.4 Instruments: Pre-Test and Post-Test

Upon completion of the methodological preparations, pre- and post-intervention tests were delivered to measure the efficiency of the instructional phase. Each group received identical instruction in terms of content and time, the only variable was the teaching method employed. Learning outcomes were assessed using a 30- item test designed in accordance with Bloom's Taxonomy. The test comprised 20 objective items, each valued at one mark, and 10 subjective items, each valued at three marks, totaling 50 marks. The objective items included fill -in- the- blanks, true/ false and matching- type questions, while the subjective items were of limited essay type.

3.4.4.1 Preparation of Table of Specification (TOS)

The preparation of Table of Specification (TOS) is essential in the test development process to establish a consistent connection between instructional objectives and assessment items. Based on this rationale, the researcher constructed a TOS for the test, which is displayed in Table 7:

Table 7: TOS Based on Bloom's Taxonomy by Cognitive Level and Content Section

Content			Levels Based on Bloom's Taxonomy						
Chapter	Pages	%	Remembering 11.33	Understanding 12	Applying 14.67	Analyzing 19.33	Synthesizing 22	Evaluating 20.67	Total
First	9	0.13	0	1	1	1	1	1	5
Second	3	0.04	0	0	0	0	0	0	0
Third	7	0.1	0	0	0	1	1	1	3
Fourth	12	0.17	1	1	1	1	1	1	6
Fifth	25	0.36	1	1	2	2	2	2	10
Sixth	14	0.2	1	1	1	1	1	1	6
Total	70	100	3	4	5	6	6	6	30

3.4.4.2 Validity

As has been asserted by Khidhir & Rassul (2023), social science instruments must be checked to ensure that they accurately measure what they are intended to measure. For this purpose, the 30-item test, developed to measure the intended outcomes, were submitted to expert reviewers for evaluation of clarity, relevance, difficulty level, and alignment with instructional objectives. Based on their feedback, necessary revisions were made to enhance the overall quality of the test. The final version was thus considered both representative and pedagogically sound.

3.4.4.3 Pilot Testing

To examine certain psychometric properties and ensure the precision of the test items, the researcher carried out a pilot study involving a sample of 15 students from the English Department at the University of Sulaimani. The results of this initial test were utilized for the following purposes:

3.4.4.3.1Test Reliability

To measure reliability, the test was administered twice to the same group of students- once on October 1, 2024, and again on October 15, 2024. The comparison of their responses across the two administrations yielded a reliability score of 0.91. This high score implies strong internal consistency and supports the test's readiness for deployment in the final study.

3.4.4.3.2 Level of Difficulty of Test Items

Item difficulty is defined by the ratio of students answering an item with accuracy, indicating whether it is easy or difficult. Items answered correctly by many students are considered easy, while those answered correctly by few are considered difficult (Brown, 2005; Furr and Bacharach , 2014; Kline, 2015; Mohan, 2016; Singh, Sharma and Upadhya, 2008). In this study, pilot test scores were sorted in descending order**.** 27% of the highest- scoring and 27% of the lowest- scoring students were selected for difficulty index calculation. Difficulty indices were computed separately for subjective and objective items, ranging from 0.20–0.80 and 0.33–0.61, respectively, both within the accepted range. These values demonstrate that the test items were appropriately varied in difficulty and accurately distinguished among varying levels of student ability.

3.4.4.3.3 Discrimination Power of Test Items

Discrimination power refers to the effectiveness of a test item in differentiating between high-achieving and low-achieving students based on their responses. It reflects how well an item differentiates between those who have mastered the material and those who have not, typically assessed by comparing the proportion of correct responses from the top and bottom 27% of pilot test scorers (Ebel and Frisbie, 1991; Furr and Bacharach , 2014; Kline, 2015; Mohan, 2016; Singh, Sharma and Upadhya, 2008). In this study, pilot test scores were ranked in descending order, and

the highest and lowest 27% were analyzed for both objective and subjective items. Discrimination indices ranged from 0.30 to 0.58 for subjective items and from 0.30 to 0.50 for objective items, indicating effective discrimination.

Together with the difficulty index, these results confirm that the test items met psychometric standards and were suitably challenging for differentiating student ability levels.

3.4.5 Internal Validity through the Control of Extraneous Variables

In an experiment, extraneous variables are factors other than the independent variable that, if not properly managed, may influence the dependent variable (Creswell & Creswell, 2018). To address their potential impact, several control measures were implemented. These included maintaining consistency in instructional time, content delivery, testing conditions, and assessment procedures across all groups. Participants were not informed of their experimental grouping to prevent behavior bias, and baseline equivalence was established prior to the intervention to ensure comparability.

3.5 Statistical Methods

Descriptive and inferential statistical methods were employed using SPSS to analyze the data and evaluate the effectiveness of the instructional strategies.

3.6 Scope of the Study

- **Temporal Scope**: The first semester of the academic year (2024–2025)
- **Spatial Scope**: Department of English/ College of Languages/ University of Sulaimani.
- **Human Scope:** Third- year undergraduate students
- **Subject Scope:** Six selected units of the textbook *Applied Linguistics 1 for BA Students in English*
- **Methodological Scope:(a) Type of Research Design:** quasi-experiment; **(b) Data Collection Tools**: tests; **(c) Data Analysis:** statistical analysis

3.7 Intervention Procedure

The researcher personally taught all the three groups to control for teacher-related variability. The instructional process was systematically structured into three distinct phases:

- **Pre-Test Phase** – Measured students' prior knowledge before the intervention.
- **Instructional Intervention Phase** — Delivered group-specific instruction using *KUD*, *4H*, or traditional methods.
- **Post-Test Phase** – Assessed students' progress after the intervention.

This design aimed to analyze the instructional strategies in terms of their pedagogical effectiveness and their impact on student academic performance in *Applied Linguistics*.

3.8 Duration of the Experiment The duration of the research experiment was consistent for all the groups. It began on Thursday, October 22, 2024**,** and concluded on Tuesday, January 14, 2025**.** All official holidays were excluded from the schedule.

- On Monday, October 21, 2024**,** the researcher conducted the pre-test.
- On Tuesday, January16, 2025, the researcher conducted the post-test.

3. Presentation and Interpretation of the Results

4.1 Presentation of the Results

- **Results of the First Hypothesis**

To examine this hypothesis, the subsequent null hypothesis was developed: *No statistically significant variation is found between the mean posttest scores of students in the three research groups at the 5% significance level.* A one-way ANOVA was employed to determine whether significant differences existed among the group means. Table 8 provides the results:

Table 8: Statistical Analysis of Posttest Differences among the Research Groups

Source of Variation	Sum of Squares	df	Mean Squares	Calculated F	Tabular F	Significance Level (0.05)
Between groups	3734,97	2	1867,48	15.91	3.22	Significant
Within Groups	4929,33	42	117,36			
Total	8664,31	44				

Table 8 shows that the calculated F- value of 15.91 exceeded the tabular F- value (3.22) at df=2. 42

and the 0.05 level, confirming a notable statistical difference in posttest mean scores among the research groups. Accordingly, the null hypothesis is rejected, confirming the presence of a marked difference between the groups.

Then, the researcher conducted pairwise comparisons to identify specific differences between groups by using the Least Significant Difference (LSD) post hoc test:

A. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (*KUD* strategy) and the second experimental group (*4H* strategy).

Table 9: Descriptive Statistics and LSD Values for Both Experimental Groups' Posttest Scores

Group	Sample size	Mean Score	Standard Deviation	df.	LSD Value		Significance (0.05)
					Calculated	Tabular	
Experimental 1	15	45.40	11.35	28	11.09	2.048	Significant
Experimental 2	15	32.33	10.10				

The above table shows that the mean score of the first experimental group (45.40) is higher than that of the second experimental group (32.33). The calculated LSD value is 11.09 which exceeds the tabular value of 2.048, at α=0.05 and 28 degrees of freedom. This result suggests a statistically meaningful difference in favor of the first experimental group in the posttest. Accordingly, the data contradict the null hypothesis and support the alternative hypothesis, contending that *a statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (KUD strategy) and the second experimental group (4H strategy).*

B. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (*KUD* strategy) and the control group (traditional instruction).

Table 10: Descriptive Statistics and LSD Values for the First Experimental and Control Groups' Posttest Scores

Group	Sample size	Mean Score	Standard Deviation	df	LSD Value		Significance (0.05)
					Calculated	Tabular	
Experimental 1	15	45.40	11.35	28	29.57	2.048	Significant
Control Group	15	23.20	11.00				

The table indicates that the mean posttest score of the first experimental group (M = 45.40) is higher than that of the control group (M = 23.20). The calculated LSD value of 29.57 exceeds the tabular value (2.048) at a degree of freedom of 28 and p=0.05, indicating a detectable statistical difference endorsing the first experimental group. These outcomes warrant the rejection of the null hypothesis and validate the alternative hypothesis, which posits: A statistically significant variation at the 5% significance level is found between the mean posttest scores of the first experimental group (*KUD* strategy) and the control group (traditional instruction).

C. No statistically significant variation at the 5% significance level is found between the mean posttest scores of the second experimental group (*4H* strategy) and the control group (traditional instruction).

Table 11: Descriptive Statistics and LSD Values for the Second Experimental and Control Groups' Posttest Scores

Group	Sample size	Mean Score	Standard Deviation	df	LSD Value		Significance (0.05)
					Calculated	Tabular	
Experimental 2	15	32.33	10.10	28	5.60	2.048	Significant
Control Group	15	23.20	11.00				

From the table above, it is evident that the mean posttest score of the second experimental group (M=32.33) is higher than that of the control group (M=23.20). The calculated LSD value is 5.60, which exceeds the tabular value (2.048) at a degree of freedom of 28 and the 0.05 level, indicating a statistically meaningful difference favoring the second experimental group. The observed data justify the rejection of the null hypothesis and accept the alternative hypothesis, which states: A statistically significant variation at the 5% significance level is found between the mean posttest scores of the second experimental group (*4H* strategy) and the control group (traditional instruction).

- **Results of the Second Hypothesis**

To identify the results of the pre- and posttests in the students' performance in *Applied linguistics*, the following hypothesis was proposed: *No statistically significant variation is found between the mean pretest and posttest scores of students in the three research groups at the 5% significance level.* A one-way ANOVA was employed to determine whether significant differences existed among the group means. The results are presented in Table (12):

Table 12: ANOVA Results of Pre- and Post-Test Scores in *Applied Linguistics* Performance Across the Three Instructional Groups

Dependent Variable	Group	Sample No.	Mean Squares	Standard Deviation	F- Value		Significance Level (0.05)
					Calculated	Tabular	
Pretest and posttest scores in *Applied Linguistics* Performance	Experimental 1	15	9.13	5.07	39.18	3.22	Significant
	Experimental 2	15	7.04	6.28			
	Control Group	15	1.33	2.11			

From the table above, it is evident that the calculated F- value of 39.18 exceeded the tabular value (3.22), at the 43 degrees of freedom and significance level of 0.05, indicating a statistically meaningful difference in pretest and posttest mean scores among the research groups. Accordingly, the null hypothesis is rejected, confirming the presence of a pronounced difference between the groups.

To determine this difference, the researcher employed a paired samples t- test, and the subsequent null hypotheses were established:

A. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the first experimental group (*KUD* strategy).

To scrutinize this hypothesis, a paired samples t- test was performed and the results were as follows:

Table 13: First Experimental Group Pretest–Posttest Comparison via Paired t-Test

Group	Test	Sample No.	Mean Squares	Standard Deviation	df	T- Value		Significance Level (0.05)
						Calculated	Tabular	
Experimental 1	Pre- Test	15	18.44	7.02	14	9.00	2.16	Significant
	Post- Test		29.06	8.31				

The information presented in Table 13 suggests that the first experimental group in the posttest scores succeeded compared to the pretest scores, indicating a high level of improvement since calculated t- value (9.00) is greater than the tabular t-value (2.16), with 14 degrees of freedom at the 0.05 significance level. Accordingly, this null hypothesis is rejected and supported the alternative hypothesis, indicating a significant difference in the *KUD*'s group in the pre- and posttest results.

B. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the second experimental group (*4H* strategy).

To verify this hypothesis, the researcher applied a paired samples t- test, yielding the following results:

Table 14: Second Experimental Group Pretest–Posttest Comparison via Paired t-Test

Group	Test	Sample No.	Mean Squares	Standard Deviation	df	T- Value		Significance Level (0.05)
						Calculated	Tabular	
Experimental 2	Pre-Test	15	20.48	7.02	14	7.66	2.16	Significant
	Post-Test		25.11	8.31				

According to the above table, the second experimental group in the posttest scores succeeded compared to the pretest scores, indicating a high level of improvement since the calculated t- value (7.66) is greater than the tabular t-value (2.16), with 14 degrees of freedom at the 0.05 significance level. Accordingly, this null hypothesis is rejected to support the alternative hypothesis, indicating a significant difference in the *4H* group in the pre- and posttest results.

C. No statistically significant variation at the 5% significance level is found between the mean pretest and posttest scores of students in the control group (traditional instruction).

To validate this hypothesis, a paired samples t- test was administrated. The data reveal the following:

Table 15: Control Group Pretest–Posttest Comparison via Paired t-Test

Group	Test	Sample No.	Mean Squares	Standard Deviation	df	T- Value		Significance Level (0.05)
						Calculated	Tabular	
Control Group	Pre- Test	15	19.81	6.01	14	1.12	2.16	Non-Significant
	Post- Test		20.46	6.55				

As Table 15 demonstrates, although the mean posttest score of the control group is slightly higher than its pretest score, the calculated t- value (1.12) is less than the tabular t-value (2.16), with 14 degrees of freedom at the 0.05 significance level. Therefore, the result is not statistically significant, and the null hypothesis is supported, indicating that the pretest and posttest scores of the control group do not differ significantly.

4.2 Interpretation of the Results

The study offers clear proof that the *KUD* (Know-Understand-Do) strategy significantly improved students' performance in *Applied Linguistics* over the *4H* strategy and traditional instruction. Through providing a clear framework for progressing from simple recall to deep understanding and practical use, *KUD* significantly enhanced deeper learning and improved retention. Its logically sequenced format supported metacognitive development, critical thinking, and active engagement, facilitating a shift from passive information reception to active knowledge construction.

One of *KUD's* core strengths in teaching *Applied Linguistics* lies in its ability to break down complex theoretical content into cognitively manageable stages. The "Know" phase assists students in constructing a strong knowledge base by connecting prior knowledge with new subject matter. The "Understand" phase deepens this by encouraging analysis, synthesis, and meaning-making—essential for grasping abstract linguistic models. Finally, the "Do" phase enables the practical use of theoretical frameworks, which is crucial to create transformative and sustained knowledge acquisition.

In contrast, the *4H* strategy, while exhibiting limited efficacy, lacked the cognitive depth and structured progression needed for mastering complex academic content. Although better than traditional methods, it did not fully support complex content mastery.

The control group's poor outcomes likely stemmed from minimal engagement and limited opportunities for application.

Overall, the *KUD* strategy's clarity, cognitive alignment, and practical application made it the most effective method for teaching and fostering deep understanding in *Applied Linguistics*.

4. Conclusion

The experiment proved that students in both experimental groups outperformed those in the control group in learning outcomes related to *Applied Lingusitics* contents, with the *KUD* group achieving the most significant progress. The *KUD* strategy stimulates purposeful learning by explicitly articulating what students need to know, understand, and do, thereby promoting not only the retention of factual knowledge but also the development of critical thinking and real-world application. Similarly, the *4H* strategy supports holistic learning by integrating cognitive, emotional, practical, and behavioral dimensions. In contrast, the control group, instructed through traditional method, exhibited slower progress in academic achievement and lower levels of engagement with the material.

Evidence suggests that, in EFL contexts, the instructional strategies implemented in the experimental groups foster critical thinking, encourage engagement with content and support balanced mastery across multiple cognitive levels- thereby facilitating both theoretical and practical outcomes, albeit to varying degrees. They aided deeper comprehension, enhanced problem-solving abilities, and contributed to overall academic improvement. Based on these findings, the adoption of the *KUD* and *4H* strategies is recommended to enhance learning outcomes in *Applied Linguistics*. Further research is suggested to explore their effectiveness across other subjects and educational contexts.

5. Limitations of the Study

Despite the valuable findings obtained, this study presents some limitations that need to be recognized**:**

1. **Limited Sample Size and Context**

The study concentrated on third-year *Applied Linguistics* students at the University of Sulaimani, which limits the generalizability of the findings to other populations and settings.

2. **Attention Confined to Academic Performance**

The investigation assessed the impact on academic performance, excluding exploration of other critical aspects such as motivation, digital competence, or long-term retention over time.

3. **No Longitudinal Tracking**

The research did not monitor long-term consequences, thereby impeding evaluation of the sustained outcomes of the targeted strategies.

6. Recommendations

The current study recommends that key stakeholders in the education system—including the Ministry of Higher Education, curriculum designers, English Departments, EFL teachers, and pedagogical centers—take the following actions to enhance the effectiveness of the implemented strategies and improve student learning outcomes:

1. The Ministry of Higher Education should provide targeted support and resources to facilitate the adoption of effective teaching strategies.

2. Curriculum designers are encouraged to structure lessons incrementally, moving from basic knowledge to more advanced and abstract content, harnessing this progression to enhance student engagement, critical thinking and deeper understanding.

3. English departments are encouraged to integrate these methods into their curricula and offer professional development for instructors.

4. Kurdish EFL teachers are encouraged to implement these strategies, especially the *KUD* strategy, which has demonstrated significant improvements in third-year students' performance by deepening comprehension and encouraging the active use of content.

5. Pedagogical centers should provide educators with targeted support through continuous training, workshops and practice opportunities which enhance instructional competencies.

6. Given its partial efficacy, *4H* should be integrated with more comprehensive methods to provide a balanced instructional approach to facilitate greater subject mastery.

Collectively, these efforts are expected to enhance instructional quality and significantly improve student learning outcomes.

8. Suggestions for Future Studies

In the light of the findings and scope of the current study, several suggestions can be made for future inquiry:

1. Exploring the use of both strategies in combination across different subjects and educational stages to determine their overall impact on learning outcomes.

2. Investigating the independent application of each strategy in diverse instructional contexts and grade levels to examine their individual effectiveness in different instructional contexts.

References

Al-Abdullah, H. S., & Ward, A. A. (2022). Effectiveness of (KUD) Strategy in Future Thinking among Fourth Grade Scientific Students in the Subject of Physics. *Journal of Positive School Psychology* , 5257-5268.

Al-Bahadli, H. J. (2024). The Effect of an Educational Curriculum According to the (KUD) Strategy on Learning some Basic Skills among Middle School Football Players . *Proximus Journal of Sports Science and Physical Education*, 95-104.

Al-Saady, H. M., Al-Fahdawy, M. W. & Al- Fahdawy, A. J.(2024). The Effect of the KUD Strategy on Extended Thinking and Learning the Serving Skill among Students of the College of Physical Education and Sports Sciences / University of Wasit. *Modern Sport,,* 70- 81.

Altaee, R. (2020). Impact of 4H Strategy on the Achievement of Students at the Department of Geography and Developing their Geographical Thinking. *Journal of Xi'an University of Architecture & Technology*, 6208- 6231.

Al-Atbi, K. M., & Abdul Karim Al Bayati , M. A. (2022). The Effectiveness of Strategy (4H) in the Achievement of Science Subject among Second-Grade Intermediate Students. *American Journal of Interdisciplinary Research and Development*, 64-72.

Althoff, J. E. (2016). *An Investigation of the Link Between Nonverbal Aptitude and Academic Achievement*. PhD. Thesis. *Florida International University*. Available at

https://digitalcommons.fiu.edu/cgi/viewcontent.cgi?params=/context/etd/article/3937/&path_info=FIDC001180.pdf (Accessed 5 August 2025).

Awda, N. M., & Youssef, R. T. (2025). The Impact of an Educational Approach Based on the KUD Strategy on Visual-Spatial Intelligence and Free-Throw Shooting Skills in Basketball for Students. *International Journal of Environmental Sciences*, 559-564.

Bahroni, I. (2018). *Introduction to Integrated Education: Description to the Nature of Integrated Education, from its Basic Principle, Philosophical Foundation, Methodology and its Curriculum.* Ponorogo: UNIDA Gontor Press.

Brown, H. D. (2005). *Language Assessment: Principles and Classroom Practices.* NY: Pearson Education.

Bugaj, J. M., Budzanowska-Drzewiecka, M., & Mikołajczyk, B. (2023). *Building an Academic Community: Challenges for Education Quality Management.* Leiden : Brill .

Conklin, W. (2010). *Higher Order Thinking Skills to Develop 21st Century Learners* . Huntington Beach, CA: Shell Education .

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Thousand Oaks: SAGE Publications.

Deary, I. J., Strand, S., Smith , P., & Fernandes, C. (2007). Intelligence and Educational Achievement. *ScienceDirect*, 13-21.

Diyala, K. M.-A., & Abdel Karim, M. A. (2022). The (4H) Strategy's Effectiveness in Achieving Science and Creative Thinking among Second-Grade Intermediate Students. *International Journal of Health Sciences*, 3264–3273.

Ebel, R. L., & Frisbie, D. A. (1991). *Essentials of Educational Measurement.* Englewood Cliffs, NJ: Prentice Hall.

Furr, R. M., & Bacharach , V. R. (2014). *Psychometrics: An Introduction.* Los Angeles: SAGE Publications.

Gazibara, S. (2013). Head, Heart and Hands Learning - A Challenge for Contemporary Education. *Journal of Education Culture and Society* , 71-82.

Ginsberg, M. B. (2015). *Excited to Learn: Motivation and Culturally Responsive Teaching* . Thousand Oaks: SAGE Publications .

Glass, K. T. (2012). *Mapping Comprehensive Units to the ELA Common Core Standards, K–5* . Thousand Oaks: Corwin Press..

Jagannathan, R., Camasso, M. J., & Delacalle, M. (2018). The Effectiveness of a Head-Heart-Hands Model for Natural and Environmental Science Learning in Urban Schools. *Evaluation and Program Planning,* 53-62.

Jaušovec, N., & Pahor, A. (2017). *Increasing Intelligence.* Cham: Springer.

Jawad, T. A., & Ibrahim, S. A. (2021). The Effect of Using the (KUD) Strategy in Solving Mathematical Problems for Primary School Students. *Turkish Journal of Computer and Mathematics Education*, 3399-3416.

Khidhir, R. J., & Rassul, T. H. (2023). Assessing the Validity of Experts' Value Judgment over Research Instruments. *Zanco Journal of Human Sciences*, 324- 343.
Kline, P. (2015). *A Handbook of Test Construction: Introduction to Psychometric Design.* London: Methuen.
Lohman, D. F. (2005). *Identifying Academically Talented Minority Students.* Storrs, CT: The National Research Center on the Gifted and Talented.
Manglik, R. (2024). *Psychology of Individual Differences* . Lucknow, India: EduGorilla Prep Experts.
Mohan, R. (2016). *Measurement, Evaluation and Assessment in Education.* New Delhi: PHI Learning.
Qatami, Y. (2013). *Cognitive Learning and Teaching Strategies.* Amman, Jordan : Dar Al-Masirah.
Rinkema, E., & Williams, S. (2018). *The Standards-Based Classroom: Make Learning the Goal.* Thousand Oaks,: SAGE Publications.
Rohde, T. E., & Thompson, L. A. (2007). Predicting Academic Achievement with Cognitive Ability. *Science Direct* , 83-92.
Salkind, N. J. (2007). *Encyclopedia of Measurement and Statistics.* Thousand Oaks, CA: SAGE Publications.
Sárosdy, J., Bencze, T. F., Poór, Z., & Vadnay, M. (2006). *Applied Linguistics I for BA Students in English.* Budapest: Konzorcium.
Shiel, T. K. (2016). *Designing and Using Performance Tasks: Enhancing Student Learning and Assessment.* Thousand Oaks, CA: Corwin Press.
Singh, Y., Sharma, T. K., & Upadhya , B. (2008). *Educational Technology: Techniques of Tests and Evaluation.* New Delhi : A P H Publishing Corporation .
Strickland, C. A. (2009). *Professional Development for Differentiating Instruction: An ASCD Action Tool* . Alexandria, VA: ASCD.
Suwaidi, A. S., & Hassan , H. A. (2023). The Effectiveness of the KUD Strategy in the Achievement of Second- Year Intermediate Students and Developing their Inclination Towards Physics. *Indonesian Journal of Humanities and Social Sciences,* 871-890.
Tomlinson, C. A., 1999. *The Differentiated Classroom: Responding to the Needs of All Learners.* 1 ed. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).
Tomlinson, C. A. (2001). *How to Differentiate Instruction in Mixed-Ability Classrooms.* Alexandria: ASCD.
Tomlinson, C. A. (2022). *Everybody's Classroom: Differentiating for the Shared and Unique Needs of Diverse Students* . New York : Teachers College Press.
Varela, M. C., Polo, F. J., García, L. G., & Martínez, I. M. (2010). *Current Issues in English Language Teaching and Learning: An International Perspective* . Newcastle upon Tyne: Cambridge Scholars Publishing.
Wahed, Z. K., & Neama, I. A. (2024). The Effect of the KUD Strategy on Learning the Skills of Dribbling and Shooting Basketball for Students. *Modern Sport,* 123-137.
Wiggins, G., & McTighe, J. (2005). *Understanding by Design* . Alexandria: ASCD.
Wormeli, R. (2006). *Fair Isn't Always Equal: Assessing & Grading in the Differentiated Classroom.* Portland: ME: Stenhouse Publishers.
Wormeli, R. (2023). *Differentiation: From Planning to Practice, Grades 6-12.* Milton Park, Routledge.

ڕێبازێکی پێداگۆجی بۆوانەی زمانەوانی کارەکی: جێبەجێکردنی ستراتیجەکانی کود و فۆرئێچ بۆباشترکردنی ئەدای خوێندکارانی قۆناغی سێیەمی زانکۆ

بێخال لطیف محی الدین
بەشی ئینگلیزی، کۆلێجی زمان، زانکۆی سلێمانی,پارێزگای سلێمانی/ هەرێمی کوردستان/عێراق
bekhal.muheden@univsul.edu.iq

پوختە
بەبەکارهێنانی دیزاینێکی توێژینەوە لەجۆری چەندایەتی ئەم لێکۆڵینەوەیە کاردەکات لەسەر زانینی کاریگەری ستراتیجە فێرکارییەکانی کود (بزانە، تێبگە، بیکە) و فۆرئێچ (سەر، دڵ، دەست، تەندروستی)لەسەر ئەدای ئەکادیمی خوێندکارانی قۆناغی سێیەمی زانکۆ لەبابەتی زمانەوانی کارەکیدا، بۆئەم مەبەستە (٤٥)خوێندکار بەیەکسانی لەسێ کۆمەڵدا گرووپ کران: دووکۆمەڵە بەشێوازی ئەزمونی (کود، فۆرئێچ) و گرووپێکی کۆنترۆڵ کە بە بەکارهێنانی شێوازی ئاسایی وانەکانیان وەرگرت، توێژەر تاقیکردنەوەیەکی (٣٠) بڕگەی ئامادەکرد لەهەردوو جۆری (بابەتی، گوتاری)، کە لەگەڵ ناوەڕۆکی پەرتوکی خوێندنی زمانەوانی کارەکی دیاریکراودا هاوتەریب بوون، بەگشتی (٢٥) پلانی وانەوتنەوە بۆهەر گرووپێک ئامادەکرا، پاش دەرهێنانی ڕاستی و دروستی و یەکسان کردنی کۆمەڵەکان تاقیکردنەوەیەکی پێشەکی و پاشەکی جێبەجێکرا. پاش بەکارهێنانی هاوکۆلکەی ئاماری پێویست، توێژینەوەکە گەیشتە ئەم دەرئەنجامانەی خوارەوە: (١)هەموگرووپەکان بەڕێژەی جیاواز سەرکەوتوبوون لە فێربوونی بابەتی خوێندنەکەدا؛ (٢)هەردوو گرووپی ئەزموونی سەرکەوتن بەسەر گرووپی کۆنترۆڵکراو؛ (٣)گرووپی کود بەرزترین ئاستی ئەدای ئەکادیمی بەدەستهێنا لەنێوان هەرسێ گرووپەکدا؛ و(٤)گرووپی فۆرئێچ سەرکەوتوبوە بەسەرگرووپی کۆنترۆڵکراو لەئەدای ئەکادیمی خوێندکاراندا. لەژێر ڕۆشنای ئەم ئەنجامانەدا بەکارهێنانی ئەم ستراتیجیە فێرکاریانە پێشنیار دەکرێت لەجێبەجێکردنی وانەوتنەوەدا بۆ زیادکردنی کاریگەری فێرکاری و دەستکەوتی خوێندکار.
وشە سەرەکییەکان: ستراتیجی کود- ستراتیجی فۆرئێچ- زمانەوانی کارەکی- خوێندکارانی زانکۆ

نهج البيداغوجية لتدريس اللغويات التطبيقية: تطبيق استراتيجيات KUD و4 H لتحسين الأداء لدى الطلاب المرحلة الثالثة الجامعة

بيخال لطيف محي الدين
قسم اللغة الانجليزية- كلية اللغات- جامعة السليمانية, محافظة السليمانية/إقليم كردستان/العراق
bekhal.muheden@univsul.edu.iq

الملخص
باستخدام تصميم بحث كمي، تبحث الدراسة الحالية في تأثير استراتيجيات التدريس KUD (يعرف ويفهم ويعمل) و 4H (الرأس والقلب واليد والصحة) على الأداء الأكاديمي لدى طلاب المرحلة الثالثة في مادة اللغويات التطبيقية. تم تقسيمهن خمسة وأربعين طلاب بالتساوي إلى ثلاث المجموعات: المجموعتان التجريبيتان تدرس علي وفق استراتيجيات (KUD و H4) ومجموعة ضابطة التى تدريس على الوفق الطريقة الاعتيادية. تم اعداد اختبارًا من نوع الاختيار المتعدد و المقالي مكون من (30) فقرة بما يتماشى مع المحتوى كتاب اللغويات التطبيقية المتخصص. تم إعداد (25)خطة تدريسية لكل المجموعة. بعد استخرج الصدق و اجرى التكافوء بين المجموعات طبق الاختبار القبلى و البعدي على عينة، تم استخدام المعامل الاحصائية اللازمة، اضهرت النتائج: (١) كل المجموعات تفوق في تحسين مادة التعليمية ؛ (٢) تفوقت المجموعتين التجريبيتين على المجموعة الضابطة؛ (٣) تفوق المجموعة KUD أعلى أداء أكاديمي بين الثلاث المجموعات ؛ (٤) تتفوق مجموعة H4 على المجموعة الضابطة من حيث الأداء الأكاديمي. في ضوء نتائج الدراسة قدمت الاقتراحات استخدام استراتجيات التعليمية في التدريس يكون سببا لتحول التعليم و الزيادة فعالية التدريس وتحسين تحصيل الطلاب.
الكلمات المفتاحية: استراتجية KUD- استراتجية 4H- اللغويات التطبيقية- طلاب الجامعة