Proximus Journal of Sports Science and Physical Education
Volume 2, Issue 5, May, 2025
https://proximusjournal.com/index.php/PJSSPE
ISSN (E): 2942-9943

THE IMPACT OF A KUD-ORIENTED PEDAGOGICAL APPROACH ON STUDENTS' MASTERY OF FUNDAMENTAL HANDBALL TECHNIQUES

Basil Ahmed Ali , College of Physical Education and Sports Sciences – University of Tikrit, Iraq.
Asst. Prof. Dr. Hussam Abed Muhi , College of Physical Education and Sports Sciences – University of Tikrit, Iraq.
h.m.sport@tu.edu.iq

Abstract
The overarching objective of this scholarly inquiry is to formulate pedagogical frameworks grounded in the KUD (Knowledge , Understand , Doing) instructional strategy, with the aim of cultivating a repertoire of foundational handball skills among students. The study also seeks to evaluate the effectiveness of these meticulously designed instructional paradigms in enhancing the assimilation of critical motor proficiencies. To this end, the researchers adopted an experimental approach, organizing the investigation around two cohorts—experimental and control—each subjected to pre- and post-intervention assessments, a methodology deemed optimally suited to the research's nature and aims.
The research sample was drawn from the fourth-grade preparatory students at Al-Buwayb Secondary School, operating under the jurisdiction of the Sharqat Education Division within the General Directorate of Education in Salah al-Din Governorate, during the academic year 2024–2025. Out of a total population of 98 students, a random selection process using the lottery method yielded a sample of 50 participants. Following the necessary exclusions, the final sample was evenly divided into two groups of 20 students each: one serving as the experimental group and the other as the control.
Following the administration of preliminary tests, implementation of the instructional plans, and conduction of post-tests, the collected data were analyzed using SPSS software. The results revealed a significant impact of the Kud model on student motivation and performance, manifesting in heightened enthusiasm and sustained commitment to skill acquisition. The strategic implementation of the model invigorated the learning environment, fostering engagement and intellectual vitality. Moreover, the instructional plans—characterized by their clarity and practical feasibility—proved instrumental in enhancing students' proficiency in key handball techniques, namely shooting, passing and receiving, and dribbling.
Keywords: Kud Strategy, Fundamental Skills, Handball, Students

Introduction:
The contemporary era is witnessing profound and rapid transformations across all facets of life, particularly in teaching methodologies, which have benefited from significant advancements and an accumulation of experiential knowledge. These achievements are the result of deliberate, scientific planning, continuously refining the educational process through research in pursuit of optimal teaching methods—particularly within sports education.
This pursuit aims to establish pedagogical alternatives tailored to the specific characteristics of athletic games and the diverse capabilities of learners, all within the constraints of available resources. Central to this endeavor is the acquisition of motor skills essential to sports, along with the identification of effective instructional strategies that maximize time and effort, increase practice frequency, accelerate learning, and ultimately elevate performance quality.
Educators and coaches alike strive to guide their students and athletes toward peak skill execution. In this context, the integration of modern instructional strategies—most notably the constructivist Kud Strategy—

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ISSN (E): 2942-9943

plays a pivotal role. It promotes dynamic interaction between teacher and learner through logically sequenced, well-structured stages, offering a clear and progressive framework that enhances engagement and learning outcomes. As a key component of modern pedagogical tools, the Kud Strategy enriches the instructional process and reflects the teacher's adaptability to evolving learner needs.

Through this strategy, students are enabled to comprehend material by receiving information and engaging with targeted scenarios in which they apply acquired knowledge to problem-solving. This fosters exploration, critical thinking, and deeper understanding.

Herein lies the educator's vital role: to cultivate knowledge by nurturing a supportive learning environment that promotes the processing of ideas and considers individual student differences. This aligns with modern educational developments, which demand a diversification of teaching methods, especially when delivering practical content that resonates with learners and fulfills curricular goals.

The Kud Strategy is thus significant for its ability to support more effective student learning, reduce learning obstacles, and improve attitudes toward school. It enhances self-confidence, information retention, and motivation to inquire, problem-solve, and engage in discovery-based learning. Handball, as one of the most prominent team sports, involves a broad spectrum of fundamental skills—both simple and complex. A strong correlation exists between the nature of a skill and the method of its acquisition. Therefore, educators and coaches must focus on effective skill instruction and explore innovative teaching approaches, with handball being no exception.

Scholarly sources affirm that handball satisfies students' intrinsic need for movement and play by allowing them to engage in meaningful activities through structured games. It is crucial to keep students active throughout lessons, maximizing their time with the ball. The primary goal is to offer a positive experience that supports exploration and skill refinement, wherein winning or losing becomes secondary (Horth & Stein, 2011, p. 2). This method ensures students engage with the sport according to their developmental stage and physical abilities.

In light of this, the researchers found it essential to adopt developmental units based on the Kud Strategy to teach fundamental handball skills. These units are designed to create a learning environment that aligns with students' physical capacities and skill levels, thereby facilitating skill acquisition in an atmosphere of excitement and engagement. The study represents a novel and practical endeavor in handball instruction, using pedagogical units rooted in constructivist theory. This approach emphasizes active learner participation and comprehension through logically sequenced stages, while accommodating individual differences.

Accordingly, the importance of this study lies in its aim to develop instructional plans based on the Kud Strategy for teaching fundamental handball skills and to assess the impact of these plans on students' learning outcomes.

Participants :

The research population comprised fourth-year preparatory students at Al-Buwayb Secondary School, operating under the General Directorate of Education in Salah al-Din Governorate / Sharqat Education Division, during the academic year 2024–2025. The total population included 98 students across four classes (A, B, C, D).

A sample was randomly selected from classes A and D using the lottery method, resulting in 50 students, representing 51.02% of the total population. Three students were excluded due to involvement in local handball clubs, one for academic retention, and six from the pilot group, leaving a final sample of 40 students (40.81%). These students were divided equally into two groups: an experimental group (class A) and a control group (class D), each with 20 students. The experimental group practiced handball skills—shooting, passing

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and receiving, and dribbling—using the Kud model, while the control group was taught using the traditional method applied by the subject teacher.

The andball skills addressed in this study were selected according to the national curriculum issued by the Ministry of Education and implemented by local education directorates in Iraq. The researchers consulted a wide range of scientific sources to select appropriate skill assessment tests. These were then reviewed and approved by a panel of experts in handball, measurement, and evaluation.

The following tests were used:

Passing and Receiving: "Passing and Receiving Test from a Distance of 3 Meters" (Kamal Abdulhamid Ismail & Mohamed Sobhi Hassanine, 2002, p. 72)

Dribbling: "Straight-Line Dribbling Test over 15 Meters" (Diaa Al-Khayyat & Noufal Mohamed Al-Hayyali, 2001, p. 506)

Shooting: "Accuracy of Shooting at the Goal from a Distance of 6 Meters" (Diaa Al-Khayyat & Noufal Mohamed Al-Hayyali, 2001, p. 507)

The scientific validity and appropriateness of these tests were established to ensure their suitability for the research sample.

Table (1)
Scientific Foundations of the Tests

Tests	First application		Second application				
	AM	SD	AM	SD	Reliability Coefficient	Self-validity	Objectivity
Shooting	8,500	4,358	11,000	2,000	0,841	0,917	0,91
Passing and receiving	18,750	1,707	19,500	1,290	0,866	0,930	0,89
Dribbling	12,250	1,707	12,000	1,414	0,966	0,982	0,94

Instructional Plan Based on the Kud Model

The researchers conducted a comprehensive review of academic literature and scientific references pertaining to the Kud Model and the essential skills of handball. This rigorous analysis served as the foundation for designing an instructional plan tailored to the specific needs of the research sample. To evaluate the appropriateness of the Kud-based instructional framework for teaching core handball skills—namely shooting, passing, receiving, and dribbling—the researchers developed a targeted questionnaire.

This instrument was disseminated to a panel of field experts and specialists, whose professional evaluations and recommendations were meticulously integrated into the refinement of the instructional plan. Upon incorporating their feedback, the final version of the plan was completed. Expert consensus on the plan's validity was notably high, with an agreement rate of 90%.

Procedures

With support from an assisting team, the researchers prepared all necessary materials and resources required to administer the tests. The study commenced with the implementation of an introductory unit focusing on both the mental motivation scale and the handball skills under investigation. Pre-tests for both the experimental and control groups were conducted on Monday, February 17, 2025, at the Boys' Al-Buwayb Secondary School, located within the Eastern Sharqat Education Department of the Directorate General for Education in Salah al-Din Governorate. These assessments evaluated participants' mental motivation and proficiency in shooting, passing, receiving, and dribbling. All collected data were systematically recorded on data sheets for subsequent statistical analysis.

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Following this phase, the researchers designed the instructional plans by consulting a range of scholarly sources and seeking expert input on pedagogical strategies. The finalized plans, based on the Kud Model, were organized into instructional units specifically intended to develop the targeted skills in the experimental group. The program consisted of 10 instructional units totaling 450 minutes. Lessons were delivered by the subject teacher beginning on Thursday, February 20, 2025, and continued through Thursday, March 27, 2025, with two sessions per week held on Sundays and Tuesdays. The control group received instruction in the same handball skills, but through traditional teaching methods used by the subject teacher, maintaining identical unit counts, durations, and schedules.

Implementation of the Kud-based instructional plan for the experimental group occurred under the direct supervision of the researchers and followed a structured format consisting of the following components:

Preparation Section

Total Duration: 9 minutes

Introduction and General Warm-up (4 minutes): The teacher prepares the necessary equipment, records student attendance, and conducts a general warm-up to engage the entire body.

Specific Warm-up (5 minutes): The teacher administers targeted exercises focusing on the specific muscle groups and movements relevant to the main activity.

Main Section

Total Duration: 33 minutes

Know Stage (K):

In this initial phase, learners are introduced to the essential elements and terminology associated with fundamental handball motor skills, including passing, dribbling, receiving, shooting, and defending. Students develop the ability to differentiate between various forms of skill execution and acquire key concepts such as proper body alignment, optimal use of the dominant hand, and the sequential steps necessary for accurate performance.

This stage cultivates foundational motor awareness, allowing learners to comprehend the biomechanics underlying each skill. Furthermore, students begin to internalize the rhythm, timing, and fluidity required for effective execution within game contexts. The knowledge established at this stage lays the groundwork for precise and efficient physical performance.

Stage One: "K – Know"

Objective: To familiarize students with the names of each skill and their fundamental motor components, and to support the development of a precise theoretical understanding of the correct motor pathway for each skill.

1. **Quick Diagnostic Questions (Multiple Choice Format – 4 minutes):**

Sample Questions:

What is the correct foot placement when executing a pass?

Where should the eyes be focused when aiming a shot at the goal?

At what point should the pull-back movement begin during a shot?

Implementation:

The instructor either reads the questions aloud or writes them on the board, prompting students to respond swiftly. This activity activates prior knowledge and encourages rapid cognitive engagement with core skill elements.

2. **Kinetic Sequence Diagram (4 minutes)**

Activity: Each student or group receives a worksheet containing a set of randomized steps related to a specific skill (e.g., "Bending the knees," "Releasing the ball," "Fixating the gaze"). Learners are required to reconstruct the correct sequence by arranging the steps into a coherent motor progression.

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Task : To construct an accurate sequence of motor steps that mirrors the correct execution of the skill.
Objective: To enhance students' cognitive and procedural grasp of the movement pathway, promoting internalization and logical reconstruction of the skill's physical execution.

Stage Two: "Understand"

In this stage, learners focus on understanding how to apply motor skills in actual game situations. They understand the importance of coordination, timing, and directional accuracy in actions such as passing and shooting. Additionally, they gain insight into how their individual movements affect the course of the game. Learners distinguish between using a skill individually and integrating it into team play. They also associate each skill with its specific tactical role in offensive or defensive situations, enhancing their movement decisions based on the situation. This understanding directly improves the quality of their practical performance .

Stage Two: Understanding

Visual Skill Analysis (4 minutes):
Organization: Present a brief video or a series of images illustrating the different phases of a specific skill (e.g., shooting, chest passing).
Activity: Students will analyze and identify the key components of the movement, such as foot positioning, arm motion, and visual focus.
Discussion Questions:
What is the first critical step in performing this movement?
Where should the player focus their gaze during this action?
At what point should the arm begin its movement to ensure proper execution?
Objective: To gain a clear and comprehensive understanding of the correct motor pattern for each skill.

2. **Skill Step Sequencing Activity (3 minutes):**

Materials: Small cards, each containing a segment of the skill execution process (e.g., "Align the body toward the target," "Retract the arm backward," "Extend the arm forward and release").
Activity: Each group of five students is tasked with arranging the cards to reconstruct the correct motor sequence of the skill.
Once completed, the group discusses the significance of this specific sequence in ensuring proper balance and movement accuracy .

3. **Correcting a Common Error (3 minutes):**

Activity: The teacher presents an image or description illustrating an incorrect execution of the skill (e.g., dribbling while looking down, shooting without bending the knee).
Students are asked to identify and explain the error, then suggest an appropriate correction, including why the adjustment is essential for effective skill performance.
Objective: To enhance motor awareness by reinforcing correct movement patterns and helping students avoid common execution errors.
Practical Component – Total Duration: 20 Minutes
This component comprises a single stage :
Implementation Phase – Duration: 20 Minutes

Stage Three (Doing):

In this phase, students are grouped to actively apply the skill previously introduced. The teacher facilitates the process through motivational support and subtle, inquiry-based guidance, encouraging learners to structure their cognitive processes, activate prior knowledge, and synthesize it with newly acquired concepts.

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Throughout the activity, formative feedback is provided to refine technical execution and promote deeper skill acquisition and mastery.

Final Segment – Duration : 3 Minutes

This segment involves a cool-down routine administered by the subject teacher, followed by student dismissal. Upon completion of the instructional plans based on the Kud model for the experimental group—as well as the standard teaching approach applied to the control group—the researchers conducted the post-tests on Monday, April 7, 2025. These assessments were carried out under the supervision of the researchers and with the assistance of the support team. The post-tests included measures of mental motivation and handball skills (shooting, passing and receiving, and dribbling), and were conducted in the same location and under the same procedures used in the pre-tests .

Statistical methods were employed using the Statistical Package for the Social Sciences (SPSS), utilizing its established procedures, including percentage, arithmetic mean, and standard deviation. Furthermore, the researchers applied the t-test for both paired and independent samples to examine the differences between pre- and post-test results, as well as between the two post-test measurements. Through these analytical techniques, the researchers arrived at the following findings:

Table (2)

presents the arithmetic means and standard deviations for both the experimental and control groups, based on the Kud model, as measured in the pre- and post-tests assessing the targeted skills

S. N	Variable		Measurement Unit	Pre - test		Post -test		t-value	Sig Level
				AM	SD	AM	SD		
1	Shooting	Experimental group	Degree	8,350	3,391	15,150	3,453	10,852	0,000
2	Passing and Receiving		Count	18,700	1,894	27,600	2,137	16,468	0,000
3	Dribbling		Second	12,600	1,984	8,850	1,348	7,394	0,000
1	Shooting	Control group	Degree	8,600	3,315	11,150	2,412	3,695	0,002
2	Passing and receiving		Count	17,600	1,729	22,050	1,986	9,763	0,000
3	Dribbling		Second	13,300	1,688	10,850	1,460	8,876	0,000
4	Cognitive Motivation		Degree	133,500	13,188	142,750	7,919	3,344	0,003

(*) Significance is confirmed when $p < 0.05$.

Table (3)

presents the arithmetic means, standard deviations, the calculated t-value, and the significance levels for the differences observed between the test results related to the targeted skills and those from the mental motivation scale.

	Variable	Measurement Unit	experimental group	Control Group	T-value	Sig Level

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			AM	SD	AM	SD		
1	Shooting	Degree	15,150	3,453	11,150	2,412	4,247	0,000
2	Passing and receiving	Count	27,600	2,137	22,050	1,986	8,507	0,000
3	Dribbling	Second	8,850	1,348	10,850	1,460	4,499	0,000
4	Cognitive Motivation	Degree	149,600	7,910	142,750	7,919	2,737	0,009

(*) Significance is confirmed when $p < 0.05$.

Discussion

The results indicated statistically significant differences between the pre-test and post-test scores in handball skill assessments (shooting, passing and receiving, and dribbling) as well as in the mental motivation scale, favoring the post-test for the experimental group across all measures.

The researchers attribute these differences to the positive effects of skill learning based on the (KUD) Model, which was implemented through an organized, sequential method that considered students' individual abilities. The instructional plans were executed systematically to address student needs while accounting for individual differences. The teacher's comprehensive explanation of the skills enabled students to understand the information more clearly, creating effective learning situations that facilitated faster and more accurate skill acquisition. This finding aligns with Qasim Lazam (2005), who stated that "when learning is conducted through educational units characterized by clarity and objectivity, it enhances learning and, consequently, skill development on both cognitive and performance levels" (Qasim Lazam Jabr, 2005, p. 56).

Furthermore, learning the skills through the (KUD) Model encouraged students to explore and apply their learning, thereby increasing their motivation toward practical application. The structure and content of the teaching plans contributed significantly to improving students' performance in handball skills. This is supported by Wasfi Asfour (1993), who noted that "motivation and desire in the learning process, driven by intrinsic needs, result in varied experiences and place learners in more motivating and less anxiety-filled environments, offering them greater opportunities to complete assigned tasks" (Wasfi Asfour, 1993, p. 63).

Based on these sources, the researchers conclude that the primary factors contributing to the experimental group's progress were the structured lesson plans and the students' commitment to completing the assigned tasks according to the (KUD) approach. This systematic method enhanced students' proficiency in handball skills (shooting, passing and receiving, and dribbling).

Regarding the control group's results (Table 11), the group was taught through a traditional teacher-centered method. The researchers attribute student improvement in handball skills to the provision of information and explanations based on instructional materials prepared by the teacher following the Ministry of Education's curriculum, similar to the experimental group. Although student attendance and compliance supported skill development, the absence of structured, scientifically designed methods limited the efficiency and speed of skill acquisition.

The researchers further ascribe the differences in outcomes to several key instructional factors: the teacher's adherence to curriculum guidelines, the delivery methods employed, and the strategic organization of physical exercises during lessons. These elements diversified cognitive motivation levels among students, enabling better outcomes in skill acquisition. This interpretation is consistent with Ali Saleh (2022), who emphasized that effective learning programs depend largely on the systematic organization of instructional materials into progressive steps that facilitate easier learning (Ali Saleh Naji, 2002, p. 77).

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Thus, it can be stated that the instructional model used in the lesson plans for teaching the targeted skills had a stronger positive impact on learning and development than the traditional methods. This model emphasized activating students' roles in solving problems using their acquired knowledge and understanding, promoting deeper comprehension and facilitating the application of concepts toward achieving optimal performance.

The post-tests revealed statistically significant differences between the experimental and control groups in favor of the experimental group, which was taught using lesson plans based on the (KUD) Model. The researchers attribute the experimental group's superior development to the application of the (KUD) Model, which facilitated the integration of previous and new experiences. The model's emphasis on clear explanation and demonstration enhanced students' understanding of skills and concepts, improving both cognitive organization and collaborative thinking. Additionally, the model heightened students' motivation and engagement by encouraging them to identify learning challenges and seek effective educational solutions, ultimately preparing them to respond more accurately and perform required skills at higher levels of precision.

The researchers assert that the implementation of instructional plans based on the (KUD) model was closely aligned with students' abilities, aptitudes, and developmental contexts, as well as their cognitive maturity. This alignment forms the core foundation of the model, which enhances the students' effectiveness in various educational scenarios, particularly in fostering their inquiry skills and motivating them to actively pursue knowledge. Additionally, Rasha Hikmat Jameel (2014) argued that instructional models promote the development of a competitive spirit among students in answering questions posed during lessons, a trend evident in the significant differences between the experimental and control groups in post-tests. According to Jameel, these models captivate students' attention and increase their focus, particularly since they represent an innovative teaching approach (Jameel, 2014, p. 124).

The researchers attribute the progress observed in the experimental group to the teacher's dedicated efforts in clarifying the skills under study, answering students' questions, and actively motivating and engaging them by creating an exciting learning environment. This was achieved through enhanced interaction, participation, and constructive competition among the participants. Al-Saadi (2020) notes that in the (KUD) model, the teacher's role involves "recognizing and addressing individual differences among learners, demonstrating a high degree of pedagogical flexibility, and understanding students' capabilities and inclinations to appropriately select activities and instructional tools" (Bassem Mohammed Mutlaq Al-Saadi, 2020, p. 324).

The researchers further contend that the (KUD) Model notably enhanced students' dynamism and engagement in the instructional setting. This was reflected in their evident enjoyment of the lessons, active participation in formulating questions, seeking answers, and employing critical thinking strategies to reach accurate conclusions. Additionally, the innovative pedagogical approach of the (KUD) Model significantly contributed to the development of students' cognitive attitudes and competencies related to the acquisition of the targeted skills. It also facilitated the development of a clear and thorough understanding of the skills being studied. As a result, students maintained constant motivation to respond to questions and perform exercises with precision, aiming for deeper comprehension. In this regard, Shawahin (2014) emphasized that the (KUD) Model "provides educational materials that encourage participation and inquiry-based challenges for all learners, positively influencing student learning and expanding their knowledge base" (Shawahin, 2014, p. 12). Likewise, Hikmat Ghazi Mohammed (2021) argued that "instruction delivered according to the (KUD) Model allowed students the opportunity to construct knowledge through positive interaction with the instructor, thereby enhancing their understanding and application of the required skills and exercises. This, in turn, fostered active and constructive engagement across the various educational contexts required by the model" (Mohammed, 2021, p. 573)."

Conclusion :

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The study's findings indicated that the implementation of Model (KUD) significantly enhanced student motivation, thereby fostering greater engagement with the lesson and increasing enthusiasm for participation without signs of fatigue or monotony. Furthermore, Model (KUD) led to a substantial improvement in students' performance and proficiency in key handball skills, including shooting, passing and receiving, and dribbling, by positioning students as the central focus of the instructional process. This approach effectively integrated them into the learning experience. Although the control group also demonstrated some progress in these skills, their improvement was notably less significant compared to the experimental group, reinforcing the efficacy of the pedagogical approach applied with the latter. The study also highlighted the practicality of the lesson plans developed by the researchers, which facilitated the successful learning of the targeted handball skills. The researchers advocate for the integration of Model (KUD) in skill-based instruction and for enhancing students' cognitive motivation, as the model represents an effective pedagogical framework that places the learner at the core of the educational process. In light of these findings, the researchers recommend that secondary school physical education instructors adopt Model (KUD) for teaching handball skills, replacing traditional methodologies. Additionally, the researchers emphasize the need to organize professional development courses, workshops, and seminars for physical education teachers to familiarize them with modern teaching models, particularly Model (KUD), given its demonstrated positive impact on student outcomes as evidenced by this study.

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