

# THE EFFECT OF USING AN EDUCATIONAL PACKAGE ON SOME MOTOR ABILITIES AND THE ACCURACY OF PERFORMING CERTAIN HANDBALL SKILLS FOR FEMALE STUDENTS

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**ABSTRACT:**

This study aims to examine the impact of an educational package on developing the motor abilities and handball skills of female students at the College of Education for Women. The study adopted an experimental method by dividing the sample into two groups: an experimental group that used the educational package and a control group that followed traditional methods. The educational package included multiple resources, such as sequential images, video discs, and booklets, to provide instant feedback and support self-learning. The results indicated a significant improvement in motor abilities like maximum speed, explosive power, and core strength, as well as handball skills, including passing, receiving, and shooting accuracy, confirming the effectiveness of the educational package in achieving learning objectives and skill development.

**INTRODUCTION:**

Educational packages are a form of self-learning and one of the best teaching techniques that incorporate learning technologies within the lesson, helping organize content in groups containing everything a student needs for independent study. They offer activities, practical tasks, modern techniques, assessments, and self-paced learning opportunities. Handball skills require a certain level of physical fitness, as these elements control performance level. Female students must possess a considerable amount of motor abilities, with a high level required for performing handball-specific skills.<sup>1</sup> The importance of this study lies in developing an educational program to teach some handball skills and improve certain motor abilities by designing an educational package that considers learners’ needs and capabilities. The package includes visual feedback using video, booklets, sequential images, and CDs, presented at regular or slow speeds.

**RESEARCH PROBLEM**

The educational process has witnessed significant development, making it necessary to use technological methods when implementing curricula. This requires teachers to enhance their capabilities by finding solutions to students’ problems and adopting unique methods for teaching and learning the curricula. Teachers must be familiar with educational technologies and participate in curriculum preparation and teaching approaches that align with students' conditions, aiming for noticeable educational progress. The researchers proposed using a comprehensive educational package to save effort and time in student learning and improve their motor abilities through a package that includes various materials (images, video tapes, CDs) to present information to teach students and develop specific motor skills in handball.

**RESEARCH OBJECTIVES**

1. To prepare an educational package on handball for female students.
2. To examine the effect of using the educational package on enhancing some motor abilities in female students.
3. To assess the effect of the educational package in teaching certain handball motor skills to female students.

**RESEARCH HYPOTHESES**

1. The educational package positively impacts the development of certain motor abilities in female students.
2. The educational package has a positive effect on learning some motor skills in handball among female students.

**SCOPE OF THE STUDY**

- **Participants:** Female students in the Department of Physical Education and Sports Sciences, College of Education for Women, University of Kufa.
- **Duration:** From January 22, 2023, to July 28, 2023.
- **Location:** The sports hall in the Department of Physical Education and Sports Sciences, College of Education for Women, University of Kufa.

**RESEARCH METHODOLOGY**

The researchers used an experimental design with two equal groups, applying pre- and post-tests to suit the study’s nature.

**POPULATION AND SAMPLE:**

The research population consisted of 35 third-year female students from the College of Education for Women, Department of Physical Education and Sports Sciences, University of Kufa. A simple random sampling method was used, selecting a pilot sample of five students and a main sample of 30 students, randomly divided into two groups: a control and an experimental group, each containing 15 students.

**SAMPLE HOMOGENEITY**

To ensure homogeneity and avoid individual differences influencing the results, the researchers identified specific variables for the sample and verified their uniformity. Table 2 below presents these variables, with skewness coefficients within the range of ±1, indicating a normal distribution.

**Table 1: Variables, Mean, Standard Deviation, Median, and Skewness Coefficient**

No.	Measurements and Tests	Unit	Mean	Median	Standard Deviation	Skewness Coefficient	Significance
1	Height	cm	161.5	162	11.45	-0.13	Not significant
2	Weight	kg	59.62	61	4.35	-0.95	Not significant
3	Age	years	21.42	21	1.49	0.85	Not significant

**GROUP EQUIVALENCE**

To ensure group equivalence in variables related to the research, an independent samples t-test was conducted. Table 4 shows the statistical parameters and t-values for the skill variables of both groups.

**Table 2: Statistical Parameters and t-Values for Skill Variables**

Variable	Control Group Mean ± SD	Experimental Group Mean ± SD	t- Value	Significance Level (Sig)	Type of Significance
Maximum Speed	4.69 ± 0.38	4.38 ± 0.47	1.27	0.120	Random
Explosive Leg Power	1.29 ± 0.31	1.24 ± 0.42	1.63	0.881	Random
Core Strength	18.32 ± 3.25	19.12 ± 3.47	1.27	0.728	Random
Passing and Receiving	3.56 ± 0.68	3.21 ± 0.85	0.89	0.518	Random
Shooting Accuracy	3.64 ± 0.45	3.71 ± 0.47	1.53	0.554	Random

The data in Table 2 shows that the differences between the groups were not significant, as the (sig) values were greater than 0.05, indicating group equivalence in the skills studied.

## TESTS USED IN THE STUDY

### Physical Tests:

- Name of Test: 20-meter Speed Run
- Name of Test: Medicine Ball Throw
- Name of Test: Standing Broad Jump
- Name of Test: Shooting at Intersecting Rectangles

### Skill Tests:

- Test 1: Passing and Receiving from 3 meters
- Test 2: Dribbling Around a Rectangular Field
- Test 3: Shooting Accuracy

## PILOT STUDY

To assess the adequacy and functionality of equipment and identify potential difficulties, the researchers conducted a pilot study on three students on March 19, 2007. This pilot helped refine the experimental setup, addressing any issues to optimize the main experiment's execution.

### Test Validity, Reliability, and Objectivity

To ensure the reliability of the tests, the researchers used a test-retest method with a seven-day interval under the same conditions. They applied a simple correlation coefficient (r) to determine the reliability level. The 30-meter start test showed high reliability with a coefficient of 0.99 under a degree of freedom of 11, confirming the test's internal validity at 0.99.

### Objectivity:

The tests were presented to experts and specialists in sports training and measurement, who confirmed their objectivity and alignment with the study goals. This aligns with Saad Mohsen Ismail's (1996) assertion that "test objectivity is based on clear instructions and administration, providing consistent results regardless of who evaluates it."<sup>2</sup>

### Field Experiment

The study included physical and skill-related handball tests conducted before and after implementing the educational package.

### Pre-Testing for Physical Abilities:

The pre-tests were conducted with all participants in the morning, maintaining uniform conditions across location, timing, and procedures to ensure consistency in both pre- and post-testing.

### Educational Program Design

Before developing the educational package, the researchers analyzed the technical performance content of several handball resources to identify the key stages and actions. They consulted experts in sports education methods and handball techniques, using CDs and images for skill depiction. The educational program included exercises for developing speed and power, along with technique-specific drills and motivation-enhancing approaches.

### The educational program was divided into three parts:

#### Preparation Section (22 minutes):

- Attendance check (2 minutes)
- Video CD presentation and distribution of booklets and images (5 minutes)
- General and specific warm-up exercises (10 minutes)

#### Main Section (18 minutes):

- Educational activity (3 minutes)
- Practical activity (20 minutes)

**Conclusion Section (5 minutes):**

- Small games

The educational package consisted of 20 units spread over ten weeks, with two sessions per week, each lasting 45 minutes. The research began on March 22, 2023, and ended on May 28, 2023.

**Design of the Educational Package**

The researchers reviewed studies on the development and application of educational packages, which emphasize self-learning through structured instructional design. The package was designed in line with the following steps:

1. **Selecting the Study Topic:** Handball skills were chosen because these skills were new to the participants.
2. **Defining Learners’ Characteristics and Needs:** All participants were from the Physical Education and Sports Sciences Department, University of Kufa, with no prior experience in such a program. The researchers considered the learners' characteristics by preparing educational materials suited to their skill level.
3. **Preparing Scientific Content and Analysis:** The package included content on motor skills specific to handball, supplemented with explanatory images for each skill part.
4. **Writing the Introduction:** The introduction highlighted the importance of the package for students, providing insights into main topics, related subjects, and learning activities.
5. **Guidelines and Instructions:** These included instructions on using the package and alternative activities to encourage students' understanding of the program.
6. **Setting Behavioral and Educational Objectives:** Behavioral objectives described what students should achieve, enabling them to perform activities correctly.
7. **Selecting Alternatives and Educational Activities:** Various educational activities were chosen to meet individual learning speeds and foster independent learning. This included consulting handball skills resources, expert advice, and using diverse educational aids.

**Post-Testing (Final)**

The researchers conducted the post-tests for the study sample on May 28, 2023, following the same procedure as the pre-tests, ensuring that all variables and requirements were controlled.

**Statistical Tools**

The study utilized the Statistical Package for the Social Sciences (SPSS) to analyze the collected data.

**RESULTS AND DISCUSSION**

**Presentation of Speed Test Results and Analysis**

**Table 3: Means, Standard Deviations, and Calculated and Tabulated t-Values for the 20-meter Speed Test Results in Pre- and Post-Tests**

Test Phase	Mean (S)	Standard Deviation (SD)	Calculated t-value	Result
Pre-Test	4.23	0.77	3.15	Significant
Post-Test	3.62	0.44		

The data in Table 3 indicate significant differences between the pre- and post-test mean values, with a notable improvement in the post-test.

The researchers attribute this development to the structured elements of the educational package, which effectively clarified the learning objectives and provided gradual exercises. This aligns with Mohammed Othman’s (1990) assertion that speed is critical in handball skills, underscoring the importance of developing this attribute in students.<sup>3</sup>

**Presentation and Analysis of Broad Jump Results**

**Table 4: Mean, Standard Deviation, and Calculated and Tabulated t-Values for Explosive Power (Broad Jump Test) Results in Pre- and Post-Tests**

Test Phase	Mean (cm)	Standard Deviation (SD)	Calculated t-value	Result
Pre-Test	135	17.98	4.55	Significant
Post-Test	148	18.86		

The results in Table 4 show significant improvement in explosive power, attributed to the exercises included in the educational package that emphasized both power and speed development, which are dynamically interconnected.

The two researchers attribute the cause of this development to the effectiveness of self-learning and its influential role in stimulating the motivation of female students and acquiring the knowledge, information, and skills related to the educational program. This is due to the numerous advantages associated with the educational package (one of the forms of self-learning). The fact that female students are aware of what is required of them to do, their freedom to choose the

place and time of study, and the alternatives they deem suitable in terms of desire, readiness, and the tools they believe are most helpful to them, all contribute to self-assessment of learning outcomes, such as immediate reinforcement and direct benefit from feedback. All these factors have led to improving the performance level of the students. Self-learning increases the efficiency of education by providing learners with advantages that other methods and forms of education lack. 'The great freedom granted by self-learning in choosing what suits the desires, abilities, and personal pace has made it a desirable approach in practice.'<sup>4</sup>

**Presentation and Analysis of Core Strength (Sit-Up) Test Results**

**Table 5: Mean, Standard Deviation, and Calculated and Tabulated t-Values for Core Strength (Sit-Up Test) Results in Pre- and Post-Tests**

Test Phase	Mean (S)	Standard Deviation (SD)	Calculated t-value	Result
Pre-Test	18.07	8.92	5.41	Significant
Post-Test	32	14.5		

The improvement in core strength is due to exercises targeting hip flexion and core engagement, which enhance overall muscular strength in the core region.

The two researchers believe that this development in abdominal muscle strength is the result of the positive effects of all movements that work to flex the hip joint, such as running and jumping with both legs, in addition to the exercises specifically designed to develop this trait. This, in turn, has reflected on the increase in muscle strength in the trunk area in general among the research sample individuals, which has led to the response of these muscles efficiently and quickly in line with the increasing demands of motor performance. 'The increase in speed corresponds with the force that generates it, provided the mass is constant. Thus, if the force doubles, the rate of speed increase will also double.'<sup>5</sup>

What the educational package contains in terms of various and multiple alternatives has the greatest effect on improving the performance level of female students. The written material and the illustrative images work to accelerate motor imagery (learners prefer presentations accompanied by illustrative materials, and one of the most important illustrative materials is images and drawings).

Other alternatives, such as films and CDs, have a significant impact on improving the performance level of the students. The information that the students receive from the alternatives in the package has an effect on improving and developing their level.

'Educational packages are based on self-learning to develop practical and academic performance competencies, so that the learner becomes the focus of the process and its outcome. The teacher transitions from being the sole source of learning and training processes to a role of organizer, guide, and assistant, offering services when the situation requires it.'<sup>6</sup>

**Presentation and Analysis of Handball Skills Test Results**

**Table 6: Mean, Standard Deviation, and Calculated and Tabulated t-Values for Handball Skills Results in Pre- and Post-Tests**

Skill	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	Calculated t-value	Result
Passing/Receiving	3.25	0.59	6.82	0.97	6.19	Significant
Shooting Accuracy	3.98	1.02	6.86	0.76	5.64	Significant

The results in Table 6 show significant improvement in handball skills due to the educational package's structured and interactive approach.

Based on what has been presented, the researchers believe that the improvement in the performance level of the research sample resulted from the developments that have occurred in the main variables influencing the performance of handball skills. By following up on the physical aspects of the research sample, it is noticeable that there has been significant development, which in turn has reflected on the skill performance. In addition to that, the correct motor development, resulting from the educational and training doses that the research sample has been exposed to, has contributed to achieving better skill performance.'<sup>7</sup>

The researchers attribute this to the educational package, as it provides the students with different fields of visual and sensory experience. 'The learner acquires diverse educational experiences through interaction, participation, practice, and communication with the environment's inputs, through various sources of knowledge that fit their needs, tendencies, and abilities. The availability of alternatives in the package provides the learner with feedback and continuous assessment, as well as active participation in the learning process. All of this leads to the student mastering the educational task as a whole. Moreover, the learner's participation in the learning process is essential to capture their attention, create reinforcing

behavior, and translate it into actual real-life practice. 'The educational package includes activities and educational tools that integrate the learner and involve them in the learning process.'<sup>8</sup>

## CONCLUSIONS

1. The study confirmed the educational package's effectiveness in improving motor abilities, including maximum speed, explosive power, and core strength.
2. The package significantly enhanced handball skills, particularly in passing, receiving, and shooting accuracy.
3. This educational package integrates theoretical knowledge with practical application, enhancing comprehensive learning.

## RECOMMENDATIONS

1. Incorporate the educational package into handball classes to improve students' motor abilities and skills.
2. Encourage the use of similar educational tools focused on motor skills development for physical fitness improvement.
3. Conduct further research to assess the impact of educational packages on other sports activities, exploring the potential for skill enhancement across various sports.

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