The Effect of Educational Units According to the Cognitive Training Strategy in Learning the Football Handling Skill

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Abstract: The importance of the cognitive training strategy for students’ learning in the first stage in football handling was addressed. The research problem was to answer the question: Do the educational units applied by the researchers have a positive role in learning the football handling skill? The aim of the research was to prepare educational units using the cognitive training strategy in learning the skill of handling football. Where the research areas were: The human field: First stage students in the College of Basic Education, Department of Physical Education and Sports Sciences / Al-Mustansiriya University, Time field: for the period from 10-12-2022 until 10-2-2023. The research population was represented by the students of the first stage in the College of Basic Education - Al-Mustansiriya University (70) students, and the research sample consisted of two equal groups (10) control and experimental. The researchers conducted pre-tests for the research sample, then applied the main experiment for a period of 10 weeks, after which the researchers conducted the post-tests by applying the same procedures were used in the pre-tests, which indicated that there were significant differences between the two groups, in favor of the experimental group. The conclusions showed that there was a positive impact of the educational units used in the research to learn the skill of handling, and the researchers recommended using the cognitive training strategy to learn other skills.

Keywords: Cognitive Training Strategy, Football Handling Skill, Educational Units in Physical Education
Introduction

Teaching methods play a distinctive role in student learning due to their positive impact on preparing generations built on sound scientific foundations. This can be identified through knowing the extent of the use of modern teaching methods, methods and strategies. Teaching methods have gained importance because of their impact on the individual’s mental abilities, so efforts have been made to employ these methods to design curricula that meet the needs of students (Kravchuk, 2020; Merchan-Osorio, 2019; Xingchen, 2024). Due to the importance of the educational process, specialists have created strategies, methods, and approaches that are compatible with the nature of the student to develop his ability to learn in light of previous experience, as they begin with simple ideas to form new, more complex ideas to become decision makers in finding solutions to the problems they face, to be able to solve problems and discover information (Bordovskiy, 2023; Salman, 2023). New through understanding within the lesson, as researchers confirmed that when learners learn with each other in terms of discussion, consultation, interaction, and exchange of experiences and skills, their learning is effective (de Stefani, 2020; Li, 2019; Qawaqzeh, 2023).

Through reviewing previous research and studies, along with the researcher’s modest experience in the educational field, it became evident that there is a weakness in football handling skills among students, and the introduction of modern strategies into educational units is rare. The research aims to address this gap by preparing educational units that use the cognitive training strategy to enhance cognitive flexibility and football handling skills in students. These units will be tailored to the capabilities of the research sample. The objectives include identifying the impact of these educational units on students’ learning of football handling skills. The research hypotheses propose that there will be statistically significant differences between pre- and post-test results for both experimental and control groups, and between the post-test results of the two groups. The research focuses on first-stage students in the Department of Physical Education and Sports Sciences at Al-Mustansiriya University, involving 20 students over the period from October 12, 2022, to October 02, 2023. The study will take place on outdoor playgrounds at the university. The cognitive training strategy, which is known for its effectiveness in enhancing planning, decision-making, and goal-setting skills, is expected to be particularly beneficial in this university setting.

Methodology

Through reviewing previous research and studies, along with the researcher’s modest experience in the educational field, it became evident that there is a weakness in football handling skills among students, and the introduction of modern strategies into educational units is rare. The research aims to address this gap by preparing educational units that use the cognitive training strategy to enhance cognitive flexibility and football handling skills in students. These units will be tailored to the capabilities of the research sample. The objectives include identifying the impact of these educational units on students’ learning of
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The researcher employed an experimental method involving two equal groups: an experimental group and a control group. The research community was intentionally selected from first-year students in the Department of Physical Education and Sports Sciences at the College of Basic Education, Al-Mustansiriya University. The choice of the research sample was closely linked to the research objectives and procedures, determining the nature of the population selected. The research community consisted of three divisions, totaling 70 students. From this population, a sample of 20 students was systematically and randomly divided into two groups—experimental and control—each consisting of 10 students, representing 28% of the total research community. Additionally, an exploratory experiment involved a sample of 5 students.

To attribute any observed differences to the experimental factor, it is essential that the two groups be completely equivalent in all circumstances except for the experimental variable affecting the experimental group. To establish this equivalence, the researcher aimed to ensure equality between the control and experimental groups using the T-test for independent samples with equal numbers in the pre-tests under study. The goal of achieving parity was to minimize differences between the control and experimental groups across all research variables. Table 1 demonstrates the randomness of differences in the pre-tests under study, indicating that the two groups were equal in all variables.

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Experimental Handling Learn a skill</th>
<th>Female officer</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>T (Sig)</th>
<th>(T) (Sig)</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>(Sig)</th>
<th>Value Levin</th>
<th>T (Sig)</th>
<th>Value Levin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a sign</td>
<td>0.714</td>
<td>0.372</td>
<td>0.469</td>
<td>0.546</td>
<td>1.135</td>
<td>2.2</td>
<td>1.265</td>
<td>2.4</td>
<td>0.046</td>
<td>0.546</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It can be seen from Schedule (3) that the experimental and control groups are equal in the results of the pre-tests for each variable, indicating that the students are on the same starting line. The (Sig) values were greater than 0.05 at a degree of freedom of 18 and a significance level of 0.05, confirming the equality. The conditions for the pre-tests, including
the place, devices, tools, and evaluators, were kept constant to ensure consistency during the post-tests.

The devices and tools used in the research included Arab and foreign references and sources, objective scientific observation, personal interviews, tests and measurements, a stopwatch, 15 legal footballs, and signs of different heights. To achieve the research objectives, the researcher followed several steps. First, the handling skill was determined by the researchers, who hold scientific titles in the specialty. A handling test towards a small target of 60x60 cm was used.

The exploratory experiment was conducted on Wednesday, December 13, 2023, with a sample of 5 students from the research community who did not participate in the main experiment. The objectives were to validate some exercises in the training curriculum for final application and to assess the suitability of the test. This experiment confirmed the validity of the tools used and the tests' suitability, as well as providing good training for the assistant work team.

Pre-tests were conducted on the experimental and control groups before implementing the educational units to determine the baseline skill levels of the research sample. These tests were conducted on Sunday, December 17, 2023, at the stadium of the College of Basic Education, Al-Mustansiriyah University, Department of Physical Education and Sports Sciences. The researcher prepared and organized the educational units according to the cognitive training strategy for learning football handling skills. This preparation was based on scientific sources and references and included input from specialists in teaching methods and learning. The curriculum comprised eight learning units, one per week, with each unit lasting 90 minutes. Each unit was divided into three sections: preparatory, main, and final.

Post-tests for the experimental and control groups were conducted on Sunday, February 21, 2023. These tests were administered under the same conditions as the pre-tests in terms of the supporting work team, time, place, and tools. Statistical analyses were performed using the SPSS software.

### Result and Discussion

Presentation of the results of the pre- and post-tests of cognitive flexibility and scoring skill for the two experimental research groups: control and analysis.

**Table 2. The Results of the Pre- and Post-Handling Skill Learning Test for the Two Research Groups**

<table>
<thead>
<tr>
<th>Meaning of the difference</th>
<th>(Sig)</th>
<th>(t)</th>
<th>Variance deviation</th>
<th>Average differences</th>
<th>standard deviation</th>
<th>Arithmetic mean</th>
<th>Comparison</th>
<th>the group</th>
<th>the test and the unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>0.000</td>
<td>15.461</td>
<td>1.35</td>
<td>6.6</td>
<td>1.135</td>
<td>2.2</td>
<td>Tribal</td>
<td>Experimental (10)</td>
<td>Manipulating towards a small target at</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.632</td>
<td>8.8</td>
<td>after me</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It is evident from the results of Table (2) that the statistical significance of the t-test for correlated samples favored the post-test of handling skills for students in the experimental group who applied the cognitive training strategy. Similarly, the students in the control group, who followed the traditional educational method, showed improvements, but to a lesser extent. This was determined at a significance level of 0.05 and a degree of freedom of 9, with the Sig value being smaller than 0.05. The presentation and analysis of the results of the post-handling skill test between the experimental and control groups revealed that the experimental group had significantly better performance, indicating the effectiveness of the cognitive training strategy in enhancing students' football handling skills.

**Table 3. The Results of the Posttests of Learning the Handling Skill Between the Two Research Groups**

<table>
<thead>
<tr>
<th>Meaning of the difference (Sig)</th>
<th>(t)</th>
<th>Variance deviation</th>
<th>Average differences</th>
<th>standard deviation</th>
<th>Arithmetical mean</th>
<th>Comparison</th>
<th>the group</th>
<th>the test and the unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>0.000</td>
<td>8.337</td>
<td>1.252</td>
<td>3.3</td>
<td>1.265</td>
<td>2.4</td>
<td>Tribal control (10)</td>
<td></td>
</tr>
</tbody>
</table>

Reviewing the results presented in Table (2) reveals that students in both research groups improved their football handling skills in the post-tests compared to their pre-test levels. Significant differences were observed between the pre- and post-tests of the experimental group for basic skills tests. The researchers attribute these differences to the educational units following the steps of the cognitive training strategy and the diversity of knowledge obtained through internet networks, student cooperation, and discussion of reports prepared by students. This approach increased the students' mental ability to think flexibly and creatively within these educational units by practicing problem-solving and dealing with difficult situations. Interaction with others also contributed to achieving educational goals. The cognitive training strategy allowed students to discover a comprehensive approach to enhancing learning by improving memory, attention, and problem-solving skills, which led to active learning and stimulated greater mental clarity and focus.

Reviewing the results of the post-tests presented in Table (3) reveals that students in the experimental group, who received their learning using the cognitive training strategy, outperformed their peers in the control group, who received their learning using a different...
method. The researcher attributes these results to the positive impact of the educational units within the cognitive training strategy. Cognitive training enabled students to diagnose mistakes made during exercises and adapt to difficult situations they encountered. Exercises focusing on increasing repetitions helped enhance experience factors, a key component integrated into the educational units. Additionally, by encouraging reflection and discussion, students were better prepared to handle various situations within the educational unit. It is crucial to develop curricula that prioritize these abilities, considering factors such as fatigue, exhaustion, and loss of concentration resulting from pressure on the learner-player. Diverse single-sport exercises not only avoid intellectual confusion but also increase the desire to train and lead to diverse learning experiences. The cognitive training strategy provided students with sufficient freedom to understand and comprehend educational material, allowing them to utilize information from the internet and peers effectively. As a result, students in the experimental group exhibited superior performance compared to those in the control group, underscoring the effectiveness of the cognitive training strategy in enhancing learning outcomes.

The utilization of widespread internet networks has revolutionized education, enabling learners to transition from traditional pen-and-paper methods to electronic work and distance learning. This integration allows for seamless connectivity between theoretical concepts and practical applications. Scholars like Ismail emphasize the importance of granting students control over their learning materials, fostering interaction and engagement with educational content. Additionally, Al-Zoghbi highlights how cognitive training strategies enhance students’ metacognitive skills, facilitating effective communication and collaboration with peers. Nabil Mahmoud underscores the role of motivation in skill mastery, noting that success experiences fuel an individual’s ability to adapt to diverse environmental variables, resulting in consistent performance across various circumstances.

The researchers attribute the experimental group’s superior learning outcomes in handling skills to the clarity and specificity of the goals set within the educational units. Clear and challenging goals motivate students, driving performance improvement and alleviating boredom associated with easily attainable objectives. The exercises embedded within the educational units establish a direct link between motivation, performance, satisfaction, and goal achievement. A compelling and valuable goal fosters a stronger connection to performance, thereby enhancing its motivational impact.

The research successfully achieves its goal by developing educational units that guide learners to high levels of skill performance. Learning occurs through focused training on a single skill within each educational unit, gradually progressing from easy to difficult tasks. The cognitive training strategy’s systematic steps engage learners in the entire learning process, from planning to application, fostering their enthusiasm and commitment to mastering correct motor paths for the skills. The researcher attributes these results to the strategy’s effectiveness in identifying weaknesses and designing appropriate exercises with
increased repetitions, supplemented by regular inter- and follow-up assessments throughout the learning process.

This approach aligns with Alwan's perspective on skill acquisition, emphasizing the importance of repetition for achieving smooth and automated skill execution. Individual differences are acknowledged, and opportunities for peer learning are leveraged to encourage effort and skill-specific accomplishments among learners.

Conclusion

In conclusion, the utilization of the cognitive training strategy proved to be highly effective in achieving the objectives set forth by the educational units. This strategy facilitated students' adaptation to various educational scenarios and empowered them to select optimal solutions. Furthermore, it enhanced students' problem-solving abilities, critical thinking skills, and capacity for innovation.

Based on these findings, several recommendations are proposed:

1. Emphasize the integration of the cognitive training strategy in teaching methodologies, particularly within the realm of physical education, as it significantly enhances the educational process.

2. Extend the use of the cognitive training strategy to other academic subjects, recognizing its potential to positively impact learning outcomes across diverse disciplines.

References


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