The effect of cognitive trips via the Internet (web quest) accompanying practical lessons in learning some basic handball skills for female students

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Abstract

The purpose of this paper is to design an electronic program for cognitive trips via the Internet (web quest) that accompanies an educational curriculum prepared for practical lessons in handball for second-year students, preparing an educational curriculum for handball in practical lessons for students of the second stage, and recognizing the effect of an electronic program for cognitive trips via the Internet (webquest) accompanying the practical lessons in learning the skills of Plump, passing and shooting handball among second-year students. The experimental approach was adopted by designing the two experimental groups and the control group on a sample of second-year students in the College of Physical Education and Sports Sciences / University of Baghdad for the academic year (2021-2022), whose number is (60) students who were deliberately chosen at a rate of (34.09)% of their total community, and divided randomly. Of them (45) students were placed on the three research groups with an equal number. The skill tests were determined, the design of an electronic program for cognitive trips via the Internet (webquest) with handball, the preparation of an educational curriculum according to sequential methodological steps, and then conducting the main experiment according to the determinants of the experimental design, and the duration took The research timeline is from 17/10/2021 until (25/3/2022), and after the experimentation ended, the data was processed using the SPSS system, so that the extracts and applications were made. The skills of passing, punching and shooting with a handball, and outperform their learning among students who learn without it, and the application of the educational curriculum prepared for the electronic class followed by the teacher did not differ from the educational curriculum with The electronic class followed by the teacher in improving learning the skills of passing, Plump, and shooting their handball, and it is necessary to pay attention to developing the capabilities of handball teachers on how to design a program of cognitive trips (web quest) via the Internet to suit the level of students, and according to the vocabulary of the curriculum for their stage in this subject.

Introduction:

Learning the basic skills of handball is the basic and effective corner of this game, which has its principles and characteristics from the rest of the football team games, and for this, the skill factor of the game is one of the most important and sensitive factors than the rest of the other factors, given that the learner is prepared physically and is no longer skilled. He has the ability to invest his potential without controlling the ball during his offensive and defensive movements, and proper learning in the practical application of these basic skills with the ball is the backbone of the game, which calls for the adoption of the scientific methodology that depends on academic studies and research, and contribute to providing it with everything that helps to achieve these desired goals, and the Web Quest or knowledge trips via the Internet are among the modern learning strategies aimed at making changes in the traditional approach in line with modern trends in activating learning and encouraging learners to build their own learning by investing what they provide. Modern technologies are means of interaction, participation and cooperation through the international information network, as knowledge trips seek to positively exploit technological development to advance the methods of the educational learning process, which mainly depends on integrating the Internet in providing information to learners by employing interesting trips of knowledge that they are required to access, this activity of the learners’ role lies in the fact that they search through the Internet in order to directly access the correct information by adopting reliable sources prepared in advance by the teacher, and then it may lead to the development of some mental and mental abilities and skills of the learners as well as preparing them for creative thinking after providing knowledge. So that they can use it well in the motor skill behavior, that is, if the knowledge from these cognitive trips is properly invested and activated in the cognitive structure, it is possible to provide support to control motor programs and provide facilities for learners to enable them to self-evaluate their performance according to the comparison with the information inventory For the skill, that is, the cognitive journeys do not have a role as a negative mobilization of the mind by the international information network and its means, but rather to activate and revitalize the mind in a direction that supports the kinetic path of the skill according to its determinants that are free from common mistakes, Here, teachers must be empowered on how to prepare them for practical lessons in accordance with what was stated in the vocabulary of the concept of cognitive trips that clarify the role of both the teacher and the
learner, as knowledge trips are defined as “a specific and directed investigative activity that helps students learn through collecting, downloading and evaluating information derived from a network The Internet and pre-selected by the teacher (Dodge, 1995). Thus, knowledge trips are a strategic and educational system that can be used at all levels of study. With the participation of Tom March, the idea of knowledge trips was developed and the idea was popularized on a larger scale through presentations and workshops all over the world, in addition to the founder’s website. This idea is spread in many educational institutions in Europe and the United States of America as a modern method of education through web search. (Samara, 2013). Cognitive trips are also defined as “exploratory educational activities prepared by the teacher, through which the web is integrated into the educational learning process, to assist students in the search and investigation of necessary information through pre-defined web pages, and employs presentations, flash, and educational videos” (Gouda, 2009). The factors for the success of the knowledge journey are its ability to make the content of the research within the general framework of the design, which helps the students to know the objective required of them, the objective of the research or its analysis, the appropriateness of the materials for the student's age and abilities in tasks and activities, and ease of use. The student moves, from page to page without difficulty, and also its ability to draw attention, as it includes what attracts and draws the student to learning, such as images, sites, maps, sounds, animations, etc., as it attracts students to interact with the Web Quest and the activity assigned to it, and some of its various skills Associated with the idea and objective of the research, and the formation of a set of facts and information selected from the various Internet pages, as students can be divided into groups, and each group is assigned to collect the largest amount of information by following the method specified by the teacher. (Regina and Nodell, 2002), Handball is one of the games that have its principles and basic skills, which are the cornerstone and effective in achieving victory for the team. Therefore, “the basic kinetic skills factor of the game is one of the most important and most sensitive of these factors because physical, tactical and psychological preparation is of no value without motor skills. The player who is prepared physically is no longer skillfully, it is not possible to exploit his physical potential without controlling the ball during his movement. (Aref and Mohsen, 1998) as educational technology is one of the most important applications and modern techniques used to develop education in its various fields and stages, as education must go through continuous development and modernization processes using modern technologies to keep pace with The technology of the current era and its requirements, and through the work of the researchers in the College of Physical Education and Sports Sciences and through personal interviews with teachers of handball in this college, he noticed a discrepancy in the level of learning the skills of tapping, passing and shooting among female students in the subject of handball, and the lack of acceptance by them due to its difficulty. Because of the shift between attendance and electronic work, which requires research in experimenting with the use of means and techniques and making them in their hands in an efficient manner. It is easy for them to receive information and knowledge.

Research problem:
The problem is through preparing a program for cognitive trips via the Internet (webquest) and studying its impact on learning the skills of Plump, passing and shooting handball for students of physical education and sports sciences, as a means to contribute to the development of appropriate solutions that fit the educational reality without wasting time and effort and making the education process enjoyable for students in an educational atmosphere Interesting, activating their minds, expanding their circle of knowledge, and activating their participation in the lesson.

Research objective:
- Designing an electronic program for cognitive trips via the Internet (webquest) that accompanies an educational curriculum prepared for practical lessons in handball for second-year students.
- Preparing an educational curriculum for handball in practical lessons for students of the second stage.
- Recognizing the effect of an electronic program for cognitive trips via the Internet (webquest) accompanying the practical lessons in learning the skills of Plump, passing and shooting handball among second-year students.

Research hypotheses:
- There are statistically significant differences between the results of the pre and post-tests for the three research groups in some basic handball skills.
- There are statistically significant differences between the post results of the three research groups in the tests of some basic handball skills.
Research methodology and field procedures:

Research Methodology:

The researchers adopted the experimental method, which is defined as “objective observation of a particular phenomenon that occurs in a situation characterized by tight control and includes one or more diverse variables (factors), while other variables (factors) are established.” (Allawi and Ratib, 2017), and to complement that, the experimental design was chosen by designing the two groups the two experimental groups and the control group with tight control in the two pre and post-tests, as determined by the requirements and objectives of the research problem, as shown by the outline of Table (1):

Table (1) shows the experimental design diagram

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre-test</th>
<th>Independent variable</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Plump, passing, and shooting skills</td>
<td>The teacher's approach + The electronic approach</td>
<td>Plump, passing, and shooting skills</td>
</tr>
<tr>
<td>First experimental</td>
<td>Plump, passing, and shooting skills</td>
<td>The teacher's approach + The electronic approach</td>
<td>Plump, passing, and shooting skills</td>
</tr>
<tr>
<td>Second experimental</td>
<td>Plump, passing, and shooting skills</td>
<td>Prepared educational curriculum + web quest</td>
<td>Plump, passing, and shooting skills</td>
</tr>
</tbody>
</table>

Community and sample research:

The boundaries of society were represented by the students of the second stage in the College of Physical Education and Sports Sciences / University of Baghdad for the academic year (2021-2022), whose total number is (176) students, distributed by nature into academic divisions (5). Of them, two divisions (A) were deliberately chosen, numbering (33 students) and Division (D), numbering (32 students), noting that the actual number of attendance in both divisions is (60) students for the main research sample, at a rate of (34.09)% of the total community of origin, at a rate of (30) students for each class, as for the remaining female students, they are included in the list of failure and postponement, and the research groups were chosen randomly by lottery method division (D) represented the control group in the style of the lesson curriculum + electronic class, and Division (A) the first experimental group using (prepared educational curriculum + electronic class), and the second experimental group using (prepared educational curriculum + web quest), and the exploratory experiment sample (10). Female students were from outside the research groups, and they were chosen from Division (B), as shown in Table (2):

Table (2) shows the description of the research community, the number of its samples and percentages

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>holistic research community</td>
<td>176</td>
<td>%100</td>
</tr>
<tr>
<td>The main research sample</td>
<td>60</td>
<td>%34.09</td>
</tr>
<tr>
<td>Students excluded from the research sample</td>
<td>5</td>
<td>%2.841</td>
</tr>
<tr>
<td>Experimental sample</td>
<td>10</td>
<td>%5.681</td>
</tr>
<tr>
<td>control group</td>
<td>15</td>
<td>%8.523</td>
</tr>
<tr>
<td>first experimental group</td>
<td>15</td>
<td>%8.523</td>
</tr>
<tr>
<td>second experimental group</td>
<td>15</td>
<td>%8.523</td>
</tr>
</tbody>
</table>
Measurement and procedures:
The two researchers chose the passing test from the level of the head in an oval shape drawn on a wall for a period of (30/sec) and a distance of (3m) (Miteb. 2004). In addition, "the continuous ball plump test in a zigzag direction for a distance of (15 m) back and forth" (Al-Khayat and Al-Hayali. 2001), and the "correction test of stability" (Al-Khayat and Al-Hayali. 2001), and the researchers were keen to have consistency between these educational models and the educational design model adopted by the researchers, using an educational curriculum accompanying cognitive journeys via the Internet (web quest) in proportion to With the objectives and characteristics of the learners, the available capabilities, the learning conditions, and the specificity of the physical education lesson, Especially learning the skills of plump, passing and shooting. The model includes the stages and steps necessary for the design and production processes, and worked on designing that when you click on one of the main headings, its contents appear in the form of lists of sub-headings, from which a detailed explanation appears in the form of video and image presentations, and according to the goal it refers to, the work is done within the program system, access is mediated by electronic links connected to each other in a tight and protected system on the international information network by linking the contents of these sub-lists with electronic links coordinated with their definitions with each other. It ends at a specific time, and after applying the program accompanied by practical lessons for a period of (15) weeks, the data of the pre and post-tests were processed by means of the statistical laws of the statistical bag (SPSS) to calculate each of the percentage, the mean, the standard deviation, and the one-way analysis of variance test (ONE WAY ANOVA, Least Significant Difference (L.S.D) test).

![Fig. 1 shows the interface of the program system](image)

**Statistical methods:** The search data was processed through the Statistical Package for the Social Sciences (SPSS).

**Presentation, analysis and discussion of results:**

<table>
<thead>
<tr>
<th>groups</th>
<th>Count</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>arithmetic mean of differenc e</th>
<th>standard deviation</th>
<th>T calculate d</th>
<th>Level sig</th>
<th>Type sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>passing</td>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>15</td>
<td>10.73</td>
<td>12.87</td>
<td>2.133</td>
<td>1.246</td>
<td>6.631</td>
<td>0.000</td>
<td>sig</td>
</tr>
<tr>
<td>First experi mental</td>
<td>15</td>
<td>10.6</td>
<td>12.93</td>
<td>2.333</td>
<td>1.175</td>
<td>7.69</td>
<td>0.000</td>
<td>sig</td>
</tr>
</tbody>
</table>

Table (3) shows the results of the pre and post-tests for the three research groups in the skill tests.
Table (4) shows the results of the post-tests among the three research groups in the skill tests.

<table>
<thead>
<tr>
<th>Tests</th>
<th>Contrast source</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean squares</th>
<th>F calculated</th>
<th>Level sig</th>
<th>Type sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>passing on the wall for (30/sec)</td>
<td>between groups</td>
<td>56.044</td>
<td>2</td>
<td>28.022</td>
<td>12.059</td>
<td>0.000</td>
<td>sig</td>
</tr>
<tr>
<td></td>
<td>within groups</td>
<td>97.6</td>
<td>42</td>
<td>2.324</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plump in a zigzag direction for a distance of 15 m</td>
<td>between groups</td>
<td>14.18</td>
<td>2</td>
<td>7.09</td>
<td>19.534</td>
<td>0.000</td>
<td>sig</td>
</tr>
<tr>
<td></td>
<td>within groups</td>
<td>15.245</td>
<td>42</td>
<td>0.363</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shooting accuracy from stability</td>
<td>between groups</td>
<td>15.244</td>
<td>2</td>
<td>7.622</td>
<td>7.77</td>
<td>0.000</td>
<td>Sig</td>
</tr>
<tr>
<td></td>
<td>within groups</td>
<td>41.2</td>
<td>42</td>
<td>0.981</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance level (0.05) Number of groups (3) n = 45 Significance of difference (Sig) ≥ (0.05)

Table (5) shows the results of the (LSD) test for post-tests of skill among the three research groups.

<table>
<thead>
<tr>
<th>Tests and groups</th>
<th>median difference results</th>
<th>Level sig</th>
<th>Type sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>passing on the wall for (30/sec) Control - Experimental (1)</td>
<td>-0.067</td>
<td>0.905</td>
<td>Non sig</td>
</tr>
<tr>
<td>Control - Experimental (2)</td>
<td>-2.4</td>
<td>0.000</td>
<td>Sig for experimental (2)</td>
</tr>
<tr>
<td>Plump in a zigzag direction for a Experimental (1) - Experimental(2)</td>
<td>-2.333</td>
<td>0.000</td>
<td>Sig for experimental (2)</td>
</tr>
</tbody>
</table>
From a review of the results of each of Table (3), it is clear that the students of the three research groups all improved their skillful learning of the three skills examined in handball in the post-tests than their level in the pre-tests, and also showed the statistically significant differences between the three research groups in the incoming post-tests. In Table (4), and its statistical significance contained in the results of Table (5) in the superiority of the level of the students of the second experimental group who are educated with (the prepared educational curriculum + (web quest)) in learning the three skills of handball at the level of the rest of the students of the two groups who did not learn by supporting their lessons with trips The cognitive (web quest) with the prepared curriculum or the teacher’s approach according to what was stated in the experimental design for each of these two groups. Cognitive support in building kinetic programs for each of the skills studied, as the content of the information provided through cognitive trips (web quest) was taken into account. It was directed in one line with the nature of performance and its requirements, that is, the knowledge information provided was to enhance performance and correspond to the performance of each of the specific skill sections, which was helped by the good arrangement of the windows of the knowledge journey gates and the sources of information in them and the ease of access to them after searching for them in sequential exciting steps in order to achieve organization perceptual coordination of information in order to build the integrative motor perception of skill in the brain, to form a knowledge base about each skill that is applied with exercises in the curriculum prepared by the researcher to serve this field of knowledge in alignment with the content of these exercises in the prepared curriculum that was on planning and implementation that fits the specificity of the sample on the one hand, and with the requirements of achieving educational goals on the other hand, and thus it can be said that the work was directed towards supporting mental processes by activating the cognitive structure and activating female learners in the physical movement of skillful performance and according to the sound determinants of each skill, through the combination of facilitating knowledge and application to activate the role of female learners in the lesson, as well as the nature of the content of these exercises and the number of times they are performed in a manner that suits the abilities of the learners themselves, their privacy, their skill level, and the progression from easy to difficult, in sync with what they receive from the information they receive through cognitive journeys (web quest). This helped to improve their skill learning and their superiority in the results of the post-tests. As for the skill improvement of the students of the first experimental groups who were educated with (prepared educational curriculum + followed electronic class), and the control group who learned with (followed teacher curriculum + followed electronic class), the researcher attributes it to them. To the role of what the female learners have taught them of knowledge that has proven their usefulness in the electronic class followed, and the use of feedback and continuous follow-up from those in charge of practical teaching in correcting the common mistakes they have when performing skillfully for each of the three skills in practical lessons, which came to help them in forming knowledge they also have in an appropriate direction. The vocabulary of the prepared educational curriculum and their applications in the practical part of the main section of the lesson, as well as in line with the vocabulary of the teacher’s curriculum exercises followed in this clear improvement in the post-tests, but their level in both groups did not rise to the level of the students of the second experimental group at this level. From kinesthetic learning and for all three skills, “what affects learning is not the level of colours, shapes, images, and layouts.” The main and central branches are because they all activate the senses to receive information, and the real influence on learning is the content and enhanced content of the learner's information. (Gonsson 2012)."Hence the importance of preparing enrichment educational programs, the design of which takes into account the introduction of facilities to accommodate the vocabulary of the prescribed curricula, in order to meet the learners’ tendencies and needs, and to deepen their knowledge and skills, which contributes to the development of their independence and thinking, and increase their ability to make wise decisions, when faced with
educational difficulties in the lesson. (Clarc, 2002)”, Also, “if the model is effective for the learner, the learner
tries to reach this kinetic behavior by restoring the model and comparing it with its performance after each
try”. (Khion, 2002), "Web quests can help learners complete the scientific tasks or activities required of
their lesson, as the lesson is presented in an attractive and interesting way in order to stimulate their motivation
towards learning, by using motivating phrases or displaying interesting pictures of the student about the topic he
learned. It is related to the learners’ previous experience, is relevant to their future goals, and has an exciting
and interesting formulation for them to carry out their tasks.” (Gouda. 2009), And that the "computer works to
create a state of confusion by giving the learner an additional opportunity to learn skills, or by creating a desire
for him to be something new that is applied in scientific lectures and differs from the prevailing traditional
method” (Kambash. 2010). Also, "the web quests with a distinctive design are able to draw great attention, with
the sites, images, maps, animations, sounds and all the other features that the Internet abounds in, and all of
these lead to making the learner attracted, attentive and, of course, enjoying all the time". (Brunton, 2011). “There
is no effective skill in the absence of the basic knowledge necessary for it, but without exaggerating the role of
knowledge as a component of the skill, that the performance component of the skill is what is important in it, and
one of the conditions for performance in the skill is that it be done quickly, proficiently, effectively, with little
effort and at low cost.” (Isaac Farhan et al. 1994), “When we imagine the skill, we find that it consists of
cognitive, mental, emotional, and performance components. There is no effective skill in the absence of the basic
knowledge necessary for it, without exaggerating the role of knowledge as a component of the skill.” (Merhi and
Al-Hela. 2009) In addition, “knowing the performance requirements has made it easier for students to assimilate
the elements of motor skills”. (Adel et al., 2009), "Thus, the activity of the learner in the educational situation is
a mental activity based on the interaction of the mental powers of the learner with the stimuli and educational
experiences, and then the understanding and awareness of the stimuli and phenomena and the relationships
between them, and thus the learning has taken place.” (Hammad. 2010). “Since the learner needs teaching
methods, means and strategies that allow him the opportunity to discover scientific knowledge on his own, he
needs to learn through work and experience to be that real person who will occupy the appropriate work position
in a society whose economy of knowledge is efficient and competent. The learner does not need a traditional
teacher who transmits the mechanism of information and ideas in a ready-made form.” (Al Naoushi. 2007).

Conclusion and Recommendations:
Conclusion:
- The educational curriculum that accompanies the web quest program through the Internet helps in
  learning the skills of passing, plump, and shooting with handball, and they outperform the students who
  learn without it.
- The application of the prepared educational curriculum accompanying the electronic class followed by
  the teacher did not differ from the educational curriculum with the electronic class followed by the
  teacher in improving the level of the cognitive field and learning the skills of passing, Plump, and
  shooting with handball among the second stage students in the College of Physical Education and
  Sports Sciences.

Recommendations
- It is necessary to pay attention to the adoption of practical applications of the information provided
  through the program of knowledge trips (web quest) via the Internet for the subject of handball to suit
  the students of the second stage in the College of Physical Education and Sports Sciences.
- It is necessary to pay attention to developing the capabilities of handball teachers on how to design a
  web quest program via the Internet to suit the level of female students, and according to the curriculum
  vocabulary for their stage in this subject.

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