

Effect of (I.P.A.G.A) model in cognitive achievement for students of the College of Physical Education and Sports Sciences

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Abstract: The importance of the current research lies in identifying the impact of the (IPAGA) model on the cognitive achievement of students of the second stage / College of Physical Education and Sports Sciences, which is based on the basis that the new knowledge of the learner is formed with the help of his old knowledge by building connections between them, resulting in new ideas, and that the representation of these ideas actually, it does not take place unless the learner actively participates in it, this deviates from the traditional lessons. It also creates an educational environment that takes into account individual differences in the learning process and makes the student positively productive by linking the theoretical side with the practical, which is a modern and organized attempt according to advance preparation in the educational field. The aim of the current research is to prepare a measure of cognitive achievement for students of the second stage of the College of Physical Education and Sports Sciences, as well as to identify the impact of the I.P.A.G.A model on students' cognitive achievement, and to identify the learning advantage between the control and experimental groups. The researcher used the experimental method and designed equal control and experimental groups with pre and post-tests, and the research community included the students of the second stage in the College of Physical Education and Sports Sciences - University of Babylon for the academic year (2021-2020), who numbered (201), and two divisions were selected, namely (A,C). Division (C) represented the experimental group and division (A) represented the control group. (30) students were selected as a research sample, (15) in the experimental group and the same as in the control group, and (10) students in an exploratory sample also by simple random method. The results showed through the table that there are significant differences between the results of the pre-test and the post-test in favor of the post-test of the experimental group in the variables under consideration (cognitive achievement).

Key words: (I.P.A.G.A) model , cognitive achievement.

Introduction:

The current era is witnessing a remarkable increase in scientific knowledge and the development of its applications in all fields, including education, and this development is in turn reflected in the different methods and methods of teaching, including sports, and it has become necessary to apply methods and methods that keep pace with this rapid development. Therefore, the interest in diversifying the models and methods used in all disciplines and in the field of teaching scientific subjects in general and sports sciences in particular, so as to transfer them from the followed concept, which may not be interested in employing the learner's thinking and mental abilities in the process of his education and does not take into account the learner's needs and cognitive abilities represented in acquiring concepts and mental abilities Higher education such as cognitive achievement.

The I.P.A.G.A model is one of the teaching models that depend on knowledge and is based on cognitive theory. It is one of the theories that have tried to explain the phenomenon of learning, and is based on interest in internal cognitive processes such as: understanding, receiving and processing information. It is concerned with cognitive mental processes, and one of the axes of cognitive theory is to explain the phenomenon of learning in the context of the relationship between stimulus and response, which depends on a sharp contradiction and simplification that violates the cognitive, emotional and emotional energies of the

human soul. The term (IPAGA) expresses these five steps, each letter of which refers to one of those steps, As follows: The first step: the introduction, represented by the letter (I), the second step: the presentation, represented by the letter (P), the third step: the association, represented by the letter (A), the fourth step:(generalization) and represented by the letter (G), and the fifth step: the application (Application) represented by the letter (A).

On the other hand, handball is considered one of the practical subjects in the College of Physical Education and Sports Sciences and includes a set of technical skills that require high physical, motor and skill requirements for its performance, including the skill of crushing striking, which requires great effort and high technique in order to master its technical performance. Hence, the importance of the research lies in the fact that it is a scientific attempt to use a model of cognitive theory, which may help in determining the appropriate teaching methods and methods for the educational situation, leading the learners to the desired learning outcomes and developing them through the development of thinking, discovery and meditation with the acquisition of information towards learning the skills of the handball game.

Research problem :

Through the researcher's review and follow-up to the students of the second stage of the previous year, he noticed a fluctuation in the level of cognitive achievement in handball, and what this skill needs in terms of skill and mental ability to implement it because of its difficulty. Given the importance of learning and teaching models, educators have been very interested in proposing teaching models that lead to activating the student's role and positive self-effort in confronting and addressing educational problems that he may face. And to identify the extent of its reflection in the cognitive achievement of the current research sample, and as a first step to apply this model in the field of teaching handball.

Research objective:

- Identifying the effect of the I.P.A.G.A model on cognitive achievement, and recognizing the preference of the control and experimental groups in the cognitive achievement of students.

Research methodology and field procedures:

Research Methodology:

The researchers used the experimental method by designing the control and experimental groups, while the research community was composed of (201) students of the second stage in the College of Physical Education and Sports Sciences / University of Babylon for the academic year (2021-2020). Division (C) represented the experimental group and division (A) represented the control group. (30) students were selected as a research sample, (15) in the experimental group and the same as in the control group, and (10) students in an exploratory sample also by simple random method.

Preparing the cognitive achievement scale:

The researchers prepared a questionnaire for the cognitive achievement scale, which was presented to a group of experts and specialists.

The exploratory experience of the cognitive achievement scale:

The researchers applied the scale to an exploratory sample consisting of (10) students who were chosen by random lottery method and represent the second stage students in the College of Physical Education and Sports Sciences at the University of Babylon on January 16, 2020, at ten in the morning in the classroom in the College of Physical Education and Science Sports at the University of Babylon, and the experiment was conducted to achieve several goals, including: clarity of the paragraphs of the scale, cognitive achievement and clarity of its instructions, identifying the time taken to answer the paragraphs of the scale, the possibility of the assistant team and its accuracy during the procedures for implementing the scale, and identifying the obstacles facing the researcher during the implementation procedures the scale.

The scientific basis of the scale:

Validity: This kind of honesty was achieved when the scale was presented to a group of (15) experts and specialists in the field of (teaching methods, handball, tests and measurement).

Reliability: To extract the results of the scale stability, the researcher used the method (AlFakronbach coefficient), as this method was applied to the sample of the scale preparation, which numbered (134), depending on the scores of the individuals of the sample numbers taken out of (134) forms, so the reliability coefficient reached (0.861), which is a high coefficient. ⁽¹⁾

Main experience:

Pre-test:

The pre-tests of the cognitive achievement scale were conducted for the members of the research sample (the control and experimental groups) on 01/26/2020 at ten in the morning in the closed sports hall in the College of Physical Education and Sports Sciences – University of Babylon.

Equivalent the two research groups:

The researchers conducted the equivalence of the two research groups in the cognitive achievement and before starting the implementation of the educational units on the main research sample. This is a good indication that these two groups are equivalent in cognitive achievement.

Table (1) shows the equivalence between the two groups (control and experimental) in the pre-tests of the cognitive achievement scale

Variables	Experimental group		Control group		Calculated (T) value	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Cognitive achievement	46.300	3.900	45.360	3.004	0.573	0.564	Non sig

Preparing the educational units according to the I.P.A.G.A) model for the experimental group:

The researchers prepared the educational units for the experimental group according to the I.P.A.G.A model to improve and develop cognitive achievement. The required number of educational units was determined at (16) units and at the rate of two educational units per week, with a time of (90) minutes. The preparatory section and the main section of the educational unit were chosen through which the five stages of the model accompanying the visual display methods were applied, and the appropriate timings were distributed for each of these stages.

Designing the presentation aids used in the educational units of the experimental group:

The educational units prepared according to the I.P.A.G.A model included the introduction of educational (visual) aids through which the researcher seeks to help the students of the experimental group. These methods were adopted in the presentation step of the model steps, and they included the following:

The booklet: - which was prepared and distributed to the members of the research sample, which includes a full explanation and pictures.

Educational poster: Educational posters are one of the most prominent means that can be used effectively in refining and evaluating learners' behavior and communicating important information in a concise manner. Effective posters are characterized by having one main goal, clear and expressive so as to leave no room for doubt in its meaning, colorful to attract attention, large and simple so that it can be easily seen from a relatively distant distance and quickly understood by just looking at it. ⁽²⁾

Data Show Educational Films (Videos): Here, videos for each educational unit are shown according to the topic and goal, and they are discussed, and the video time ranges from two to three minutes, the researcher chose this method in order to combine the moving image, color, review, and the possibility of stopping the movie and repeating it, and controlling the speed of displaying the movie. ⁽³⁾

Implementation of the educational units prepared according to the I.P.A.G.A model:

Before starting the implementation of the prepared educational units, the researcher gave two introductory educational units according to the I.P.A.G.A form to the students of the experimental group, on my two days (3,4/2/2020) at ten in the morning; In order to introduce them to the new working mechanism represented by the I.P.A.G.A model, implementation of the educational units began at the beginning of the second course of the academic year (2019-2020) starting on the corresponding day (5-2-2020) at exactly ten o'clock in the morning. The last educational unit was on the corresponding day (23-2-2020), and the educational units were given to the experimental and control groups through the same teacher in order to avoid all influences and obtain accurate results.

Post-test:

The post tests of the experimental group were conducted at the same times and place in the tribal tests after the completion of the 16 educational units.

Presentation, analysis and discussion of the results:

Presentation and analysis of the results of the pre and post tests for the two research groups and their discussion:

Presenting and analyzing the differences between the results of the pre and post- tests of the experimental group in the variables under research, analysis and discussion:

Table (2) shows the arithmetic means, standard deviations, and the (T) value of the pre and post-test for the experimental group

Variables	Pre-test		Post-test		Difference Mean	Difference Std. Deviation	(T) value	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation					
Cognitive achievement	46.200	3.931	69.400	3.202	-23.100	0.74419	30.550	0.000	Sig

Table (2) shows the results of the tribal tests, their arithmetic means, and their standard deviations for cognitive achievement, and by inferring the significance of the difference between the two arithmetic means using the t-test for correlated samples, it appeared that the mean of the post and pre-differences was (-23.100) with a standard deviation of the post and preliminaries amounted to (0.74419) in When the calculated (T) value was (-30.550), It is greater than the tabular under the significance level (0.05) and the degree of freedom (14), and this indicates a significant difference between the two tests. The results showed through Table (2) that there are significant differences between the results of the pre-test and the post-test and in favor of the post-test of the experimental group in the variables under study (cognitive achievement). The researcher attributes these moral differences to the positive effect of the I.P.A.G model. which the researchers applied to the experimental group, and that is by making the educational material arranged, organized and sequential according to the five stages of the model, where each of these stages included a set of procedures and steps taken by the student or teacher to achieve its own goals, and teaching according to this model the model included the use of visual presentation methods represented in Displaying educational posters for each unit, showing educational films at the stage of (show) as a means of presenting this information and ideas, which makes the lesson more exciting and interesting and takes away boredom and boredom from students, so that it gives the student enough space to think and work individually and collectively to solve problems and overcome them. In which modern educational means are used and the various possibilities it contains can increase the effectiveness of the educational method used and also increase the student's positivity towards the lesson, suspense and excitement for learners and motivate them to acquire experiences and knowledge more effectively as it makes the lesson more vital and thus is reflected on the learners in the form of experiences different and cumulative. ⁽⁴⁾

Through the foregoing, we conclude that all these factors and procedures led to the development of the level of the experimental group students in the post tests, which confirms that the I.P.A.G.A model has a positive impact on cognitive achievement, thus achieving the study's goal.

Presenting the results of the pre and post-tests of the control group in the variables under research, analysis and discussion:

Table (3) shows the arithmetic means, standard deviations, and (T) value of the pre and post-test for the control group.

Variables	Pre-test		Post-test		Difference Mean	Difference Std. Deviation	(T) value	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation					
Cognitive achievement	45.466	3.113	56.600	3.224	-11.13333	0.69602	15.886	0.000	Sig

The results of Table (3) show the differences and discrepancies in the values of the arithmetic means and the standard deviations between the pre and post-tests of the variables investigated among the students of the control group in the pre and post measurements. When inferring the significance of the difference between the two arithmetic means through the use of the (t) test for the correlated samples, it appeared that the calculated (T) value (-15.886), which is greater than the tabular, This indicates that there is a significant difference between the pre and post-tests in favor of the post test of cognitive achievement. The researcher attributes this development to the students of the control group to the teaching method used by the teacher in cognitive achievement, and that is through what he provided of theoretical information, explanations and presentations of the educational material, applying special exercises to develop the variables under discussion, and using all the tools and means available to him during the educational units.

Presenting, analyzing and discussing the results of the post-tests for the experimental and control groups:

Variables	Experimental group		Control group		Calculated (T) value	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Cognitive achievement	69.400	3.202	56.600	3.224	10.907	0.000	sig

Table (4) shows the differences in the values of the arithmetic means and the standard deviations in the post-tests between the students of the experimental group that used the I.P.A.G.A model and the control group that was used by the teacher. We note that the results of the pre-test for cognitive achievement, when inferring the significance of the differences between the two arithmetic means through the use of the (t) test for independent and equal samples, the results showed that the calculated (t) value of (10.907) is greater than its tabular value, and this indicates that there is a significant difference between the pre and post tests and in favor of the post-test of knowledge acquisition.

The results showed in Table (4) that there are significant differences between the results of the post-test for the two experimental and control groups, and in favor of the experimental group in cognitive achievement. as this model has clearly invested in the process of organizing thinking and searching for solutions and ideas, it has greatly contributed to achieving progress in post-tests, as well as practice and repetition and the use of various educational means that contributed to the emergence of sound and sequential performance. The researchers also see that there is a positive point that led to the superiority of the experimental group over the control group, which is the positive environment that the teacher created by applying the five stages of the model in these prepared units, as these units included the use of new teaching aids that were not familiar to them before, as well as diversification in educational exercises for skills, which made these units more exciting, interesting and fun for students, which led to their interaction and impulse to apply their contents with care, desire and impulse, This was confirmed by (Qasim Lazam) that “diversity and renewal in the use of exercises, methods and methods when teaching sports skills is the most appropriate in creating an atmosphere characterized by suspense, excitement and fun for the student, which contributes to learning and quick acquisition of sports movements and activities” ⁽⁵⁾ . As the group adopted auxiliary means: (data show, illustrations and educational brochure) that helped them form the correct images of skill performance, and thus helped in providing the students with the opportunity to modify their previous concepts and acquire new ones. As these methods were designed and selected on scientific grounds that suit the students’ abilities, tendencies and desires, in addition to that they worked to attract their attention, using

(data show, illustrations and educational brochure) and linking their previous information with what is new information, as learning is the result of interaction between what he learned and his ideas this is what was indicated in that “students come to the classroom with a lot of prior knowledge and misperceptions, and the most important and influential factor is what the students already know”⁽⁶⁾.

The use of aids in the applied part of the main section in the educational units had a positive effect on the learning process, as it works to increase the attention of learners and cut the monotony of educational situations. What is known to educational psychologists is that education passes through three stages, the first is attention, the second is awareness, and the third is understanding, the greater the attention, the greater the awareness, thus increasing the understanding of the learners, and the aiding means helps the teacher to make his educational position more exciting and more interesting, leading to an increase in the learner's attention, cutting the intensity of the educational situation, and preventing the learner's mind wandering⁽⁸⁾. And when the teacher does not use the auxiliary means and relies only on verbal symbols in his explanation, some learners find it difficult to keep pace with the teacher during the explanation and therefore the differences between the learners will increase because some of them can follow up and understand and others cannot follow, and by using the aids they help us to reduce those differences Individuality among learners, and the rate of understanding of each learner will rise to a reasonable degree and a better degree if we compare that without the use of aids.⁽⁷⁾

Conclusions and recommendations:

Conclusions:

- The I.P.A.G.A model has a positive effect on the superiority and raising the level of the experimental group students in the cognitive achievement of handball.
- The IPAGA model provided enough opportunity for students to interact collectively, because it is based on providing the educational environment collectively in the teaching of handball. It gives the character of excitement, suspense and focus by linking ideas and concepts, as well as increasing the level of students' interaction and increasing their motivation towards the lesson. It has contributed to removing boredom and stagnation among the students. Students and this through their use of various methods, methods and means of education that were not familiar to them before.

Recommendations:

- The necessity of providing programs and plans to train students on the effective practice of thinking in general and knowledge attainment in particular within the college curricula because this model is characterized by creating a positive environment for learning and making room for the formation of ideas and information.
- The necessity of introducing different visual means in the physical education lesson in order to see the parts of the movement in detail, as well as for its importance in linking the sense of hearing with sight.
- It is necessary to rely on the teaching models that the student is the main focus in order to achieve the best results and to conduct studies to compare between the I.P.A.G.A model and other modern teaching models to know the level of cognitive achievement in handball.

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