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## **The effect of McCarthy model on learning some basic skills on the floor movement device in gymnastics for female students**

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### **Abstract**

The purpose of this paper is to identifying the effect of the McCarthy model on some basic skills on the floor movement device in gymnastics for female students and identifying the preference for the effect between the McCarthy model and the method used in some basic skills on the floor movement device in gymnastics for female students. The researcher used the experimental method by designing the two equal groups with pre and post-tests to apply the vocabulary of the McCarthy model and identified the research community with the third stage students of the College, which numbered (56) students, and the students who failed and deferred were excluded, whose number is (8) Female students, so that the total number was (48) female students, and the sample was chosen by simple random lottery method with (24) female students, and it was divided equally into two groups, experimental and control after conducting the tribal tests, the members of the experimental group started applying the units prepared by the researcher and lasted for four weeks, with two developmental units each week after completing the vocabulary of the units, the researcher conducted the post-tests and collected the data, and it was statistically processed using the (spss) program. As for the most important conclusions, they were as follows: There is a positive development for the experimental and control research groups for the technical performance of the basic skills on the floor movement's device in gymnastics for female students. The exercises that were prepared according to the steps of the McCarthy model greatly helped in developing the members of the experimental group at the expense of the members of the control group in Basic skills on the device of floor movements in the gymnastics in question. As for the most important recommendations, they were: conducting research and studies to find out the effect of using the McCarthy model in developing the cognitive, kinetic and skill aspects in other sports, conducting various research and studies to compare the McCarthy model with other models or with the various teaching methods to see its impact on learning basic skills effectively gymnastics.

**Keywords:** medinilla beddomei, phytochemicals, GC MS analysis, acetone extract, fever

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### **Introduction**

The modern educational view focuses on the student and considers him the center of the educational process, in contrast to what this view was before the twentieth century, which considered the school to represent a positive role in the educational process through presenting and imparting information and knowledge to students and the role of students was limited to listening and memorizing, but the field Education has witnessed great development and that this development was reflected in the teaching methods used and on educational methods and aids, and that the era in which we live is characterized by an unprecedented rapid development in the fields of knowledge and scientific research. And because sport begins at a young age, and since the first school years, it has become necessary to find strategies, models, and educational methods that achieve this ambition to pursue the great and rapid development that developed countries have become. The pillars of the learning process at the present time, as it meets the aspirations of the learner and the teacher together in several fields, and the most important of these areas is to give the student freedom to think and reflect to achieve the learning process.

The McCarthy model is one of the models that achieve this goal, and it is important in terms of applying a new model. (Prince McCarthy) developed this model based on individual education, and on the right and left brain way of thinking, and the McCarthy model is a method for communicating information in a way that suits all types of learners, It allows them to practice and make creative use of the learning materials during each lesson. The McCarthy model proceeds in a four-way learning cycle, in a fixed sequence, and begins with the first stage, which is the contemplative stage, then the second stage crystallization of the concept, the third stage is active experimentation, and finally, the fourth stage is the material experiences.

Gymnastics, like other types of sports, has witnessed a wide development in terms of its need for practical training, as well as its urgent need for the theoretical foundations that the school needs in order to move learners to the best level. What he needs from the ability to act correctly and accurately while playing and to involve the mental processes and senses during the performance and this leads to gaining a good performance free of errors and reaching an advanced level.

**Research problem**

There was an vital need to use modern teaching models that underscore taking into version students' learning and accelerating their thinking process, and by observing the researcher and informing her about modern strategies, models, methods and methods, The researcher sought to choose the McCarthy model after she looked at the vocabulary of the teaching methods subject, and found what indicates the lack of adoption of this model in the sports field, as an attempt to prove its role in learning and developing basic skills on the floor movement device in gymnastics for female students, and through the foregoing, it is possible to Summarizing the research problem with the following question: Does the use of McCarthy's model have an effect on some basic skills on the floor movement device in gymnastics for female students?

**Research objective**

- Identifying the effect of the McCarthy model on some basic skills on the floor movement device in gymnastics for female students
- Identifying the preference for the effect between the McCarthy model and the method used in some basic skills on the floor movement device in gymnastics for female students

**Research hypotheses**

There is an effect of McCarthy's model in some basic skills on the floor movements device in gymnastics for female students, there is a preference in influencing the McCarthy model according to learning styles in some basic skills on the floor movements device in gymnastics for female students, and the preference for influencing in favor of the experimental group.

**Research fields**

- **Human field:** For third-year students in the Department of Physical Education and Sports Science/College of Education for Girls/University of Mosul,
- **Time field:** (3/2/2022) to (25/3/2022)
- **Spatial field:** The indoor gymnastics hall in the Department of Physical Education and Sports Science/College of Education for Girls/Mosul University.

**Research Methodology**

The researcher followed the experimental method because it fits with the nature of the research problem.

**Community and sample research**

The researcher identified the research community with students of the third stage in the Department of Physical Education and Sports Sciences / College of Education for Girls / University of Mosul, whose number is (71) female students, and the (8) students who failed and postponed were excluded, so that the total number became (48) female students, and the sample was chosen by the method Simple random lottery, with (24) students divided equally into two groups, experimental and control. After directing the pre-tests, the experimental group members started applying the units prepared by the researcher and persisted for four weeks, with two developmental units each week.

**Means, tools and devices used****Means of collecting information: The researcher used the following means:**

- Arab and foreign references.
- Personal interviews.
- Note.
- Test and measurement.

**Used tools and devices: The researcher used the following tools and devices:**

- Ground Movements device.
- Computer number 1.
- CDs.
- Sony video camera and its accessories (To photograph the research sample).

**Field research procedures****Determining the search variables****The search variables were defined as follows**

- Rolling front wheel
- Rolling rear wheel
- Handstand
- The human wheel (Cartwheel)

**Exploratory experience**

The researcher conducted an exploratory experiment in the indoor gymnastics hall at the College of Education for Girls on Wednesday 9/2/2022 on a sample similar to the research sample of (5) third-year students from the College, who were excluded By the researcher in the main experiment and the purpose of the exploratory experiment is to know the following:

- To determine the time of the tests, and the time of application of the model can be identified.
- Ensure the validity of the tools and means used in the research.
- Knowing the errors and obstacles that may occur during the implementation of the model in order to overcome them.
- Ensure the suitability of the internal hall and the extent to which it accommodates the research sample.
- Identifying the difficulties and problems facing the researcher and the assistant work team.

**Main experiment procedures****Pre-test of the research sample**

Before starting the pre-tests, the researcher gave two introductory unit the test to the students to learn about the skills and how to perform them with the help team. pre-tests were conducted before the implementation of the McCarthy model for the research sample on Sunday 27/2/2022 for the basic skills that were agreed upon by experts and specialists in the study of gymnastics (Rolling front wheel, Rolling rear wheel, Handstand, human wheel (Cartwheel)) in At ten in the morning, the test was conducted in the indoor gymnastics hall in the College. The conditions related to the test, such as the place, time, method of implementing the tests, and the tools used to achieve the same conditions were fixed when conducting the post-test of the research sample.

**Preparation and application of educational units using the McCarthy model**

After reviewing the vocabulary of the curriculum for third-year students in the Department of Physical Education and Sports Science/College of Education for Girls/Mosul University, educational units were prepared according to the McCarthy model. After discussing the priorities for how to implement the McCarthy model and its suitability to the sample level through personal interviews with experts and specialists, the researcher prepared special educational units for the members of the experimental group, while the members of the control group used the method followed by the school, and the curriculum was applied to female students Experimental research group on (28/2/2022), in the indoor gymnastics hall of the College at a rate of two educational units each week, with a duration of (90 min). It continued until the end of the experiment on (23/3/2022) and the subject school model was applied, as the moral starts after the students attain in the hall, they rush to change their clothes and prepare for the lesson. (20 min), in which the first (theoretical) dimension of perception is applied, which takes place in two stages, the first (reflective observation):

At this stage, the school divides the students into (3) groups of (4) students in order to attract their attention and motivate them by asking questions, for example: How is the body position while performing the roll? Then the school asks the students to answer the question, and then the school allows the students to answer the various questions.

Then he reviews the answers of the groups and leaves the students an appropriate time to reflect on their ideas to know their validity and help them judge their validity. As for the second stage (the crystallization of the concept) or the ideal performance: the school presents a video in which it shows the skill of the (Cartwheel) and the relationship between them through playing situations, then models of the players are presented to see the correct perfect performance. After that, the application portion of the main section is transferred for a historical of (40) minutes, during the second (practical) dimension is treated, as the school implements the third stage.

(Active Experimentation): At this stage, the students are asked to implement the exercises in the educational unit to see their performance, and then the school corrects the errors by giving them feedback on the skill performance. The opportunity for the students to think experiment and arrange their ideas, then the students are asked to perform the exercises again. As for the fourth stage (tangible physical experiences): in this stage, the students are asked to perform exercises related to skill performance through some playing situations to see what they have reached in new experiences (performance is done by the students without being bound by the school's instructions to see the creativity that will be done by before the students) After that, the school gives feedback to the students for the purpose of work, searching for hidden possibilities, exploration and learning by trial and error. Then move to the final section for a period of (5) minutes. In this section, some recreational games are applied and then the tools are collected and returned to their place.

**Each unit contains the following:**

1. Preparatory section (25) minutes: (3) for the organizational side, (7) for the general preparation, (15) for the special preparation.
2. Main section (60) minutes: of which (20) minutes are for the educational part and include an explanation and presentation of the skill, and (40) minutes for the practical part.
3. Closing section (5) minute: It includes soothing and relaxation exercises with gathering tools and exit.

When developing the development units, the researcher took into account some foundations and principles in education, as follows:

- Determining the objectives of each educational unit.

- That the educational unit achieve an educational goal that is derived from educational goals.
- That each of the exercises of the educational unit works to achieve its objectives.
- Determine the times allocated for each exercise.
- Taking into explanation the application of the skills learned in a earlier educational unit with the next educational unit to install them and link them with the other or new skill.

### Post-tests

After completing the McCarthy model, the post-tests were conducted on the control and experimental groups, and that was on (24/3/2022). The researcher removed hooked on explanation the same conditions in which the pre- tests were conducted in terms of the sequence of tests.

### Assessment of basic skills:

The researcher conducted a photocopy of the pre and post-tests of the motor skills in question and recorded them on a CD, which was presented to a group of experts to be evaluated using an arbitration form (see appendix (1)), and the evaluation was of (10) degrees. ((The accuracy of this method depends on the depth of the scientific component and the extent of his knowledge of the method of technical performance of that skill)) (Mahjoub. 1987) <sup>[1]</sup> Each student was given two attempts, and the greatest attempt was calculated as the evaluation was done by four assessors and according to international law in calculating the degree, which is the safest way and by taking the four marks, then the highest and lowest grades are deleted, and sum of the two average marks is taken and divided by (2) (International Calendar Rules. 2006) <sup>[2]</sup> to be the final score for each skill

$$\text{Student's score} = \text{sum of the two average marks}/2$$

Note/ It was agreed between experts and specialists on some foundations and principles to give a grade of (10) for each movement.

The assessment of the skill will be done by four assessors, after which the highest and lowest score are deleted, and the sum of the two intermediate scores is taken and divided by 2 to make the final score out of (10).

**Statistical means:** The researcher used the following statistical methods:

- Arithmetic mean.
- Standard deviation.
- T-test for equal numbers of independent examples.
- T-test for related examples.

### Presentation, analysis and discussion of the results

**Presentation the results of the pre and post-tests of the control group for the technical performance of the skills under study.**

**Table 1:** shows the results of the pre and post-tests of the control group for the technical performance of the skills under study for the variables inspected.

| variables               | Measuring unit | Pre-test |                    | Post-test |                    | T value | level Sig | Type Sig |
|-------------------------|----------------|----------|--------------------|-----------|--------------------|---------|-----------|----------|
|                         |                | Mean     | standard deviation | Mean      | standard deviation |         |           |          |
| Rolling front wheel     | degree         | 3.015    | 0.647              | 6.324     | 0.365              | 8.234   | 0.000     | Sig      |
| Rolling rear wheel      | degree         | 3.71     | 1.654              | 7.541     | 1.124              | 9.549   | 0.000     | Sig      |
| Handstand               | degree         | 4.18     | 2.364              | 7.894     | 2.236              | 9.657   | 0.000     | Sig      |
| Human wheel (Cartwheel) | degree         | 3.55     | 1.984              | 7.254     | 1.547              | 8.659   | 0.000     | Sig      |

**Presenting the results of the pre and post-tests of the experimental group for the technical performance of the skills under study.**

**Table 2:** shows the results of the pre and post-tests of the experimental group for the technical performance of the skills for the variables investigated.

| variables           | Measuring unit | Pre-test |                    | Post-test |                    | T value | level Sig | Type Sig |
|---------------------|----------------|----------|--------------------|-----------|--------------------|---------|-----------|----------|
|                     |                | Mean     | Standard deviation | Mean      | standard deviation |         |           |          |
| Rolling front wheel | degree         | 4.71     | 0.578              | 6.324     | 0.365              | 6.359   | 0.000     | Sig      |

|                         |        |       |       |       |       |       |       |     |
|-------------------------|--------|-------|-------|-------|-------|-------|-------|-----|
| Rolling rear wheel      | degree | 5.12  | 1.264 | 7.541 | 1.124 | 7.654 | 0.000 | Sig |
| Handstand               | degree | 6.35  | 2.354 | 7.894 | 2.236 | 5.264 | 0.001 | Sig |
| Human wheel (Cartwheel) | degree | 5.124 | 1.784 | 7.254 | 1.547 | 4.658 | 0.001 | Sig |

**Presentation of the results of the tests (post-test, post-test) for the two experimental and control groups for the variables under research and analysis.**

**Table 3:** shows results of the tests (post-test, post-test) for the two experimental and control groups for the variables under research and analysis.

| variables               | Measuring unit | Pre-test |                    | Post-test |                    | T value | level Sig | Type Sig |
|-------------------------|----------------|----------|--------------------|-----------|--------------------|---------|-----------|----------|
|                         |                | Mean     | standard deviation | Mean      | standard deviation |         |           |          |
| Rolling front wheel     | degree         | 2.9      | 0.331              | 4.71      | 0.578              | 4.22    | 0.001     | Sig      |
| Rolling rear wheel      | degree         | 3.6      | 1.687              | 5.12      | 1.264              | 3.822   | 0.003     | Sig      |
| Handstand               | degree         | 4.2      | 2.987              | 6.35      | 2.354              | 5.244   | 0.001     | Sig      |
| Human wheel (Cartwheel) | degree         | 3.6      | 1.875              | 5.124     | 1.784              | 4.587   | 0.001     | Sig      |

### Discuss the results

Through the results presented in the previous tables (1), (2), (3), which show us that there are significant changes in the pre and post- tests for the members of the two groups and the post-tests between the members of the experimental and control group, the moral differences in the members of the control group are attributed by the researcher to what was done Its application from exercises prepared by the school in the educational program, While the moral changes shown by the above tables for the members of the experimental group are seen by the researcher as a result of preparing the exercises according to the steps of the McCarthy model, and this is what is required to develop the skills under discussion, as it helped to develop their awareness and increase their motor experience of skills, as this model states in the first (theoretical) dimension that It is based on two phases: (reflective observation) and (concept crystallization), where the contemplative observation includes an explanation of the skill and asking some questions related to the knowledge of the skill to be developed in order to link and integrate the ideas between the students and reach the correct and ideal answers, and then move to the second stage (concept development) The skill is presented through a technical performance of a global player performing the skill with pauses explaining the technical stages of the skill and through it there is a clear perception and receiving or informing about how it is performed for the students so that they can see the ideal performance and visualize it in their minds, before moving to the second dimension (practical). Which consists of two phases, which are (active experimentation) and (physical tangible experiences). In this dimension, what has been explained and presented in the theoretical dimension is performed, and this is supported by (Abdul-Hussein and *et al.* 2018) <sup>[3]</sup> "This McCarthy model includes two tracks, the first represents the perception of experience, and the second represents the processing of experience information, These two paths represent the process of learning and development that includes realizing a new experience and then processing it, and that learning and development using the McCarthy model is designed so that learners can approach solving the problems they face and reach success in the educational process, and that the use and application of the McCarthy model through the school giving the theoretical dimension through the first stage (reflective observation), which the school performs by explaining the difficulties of the skill during play as well as the mechanism or steps of applying the skill, then moving to the second stage (crystallization of the concept). Then move to the practical dimension and in the stage of (active experimentation) in order for the practical application of the exercises, and after the students perform the performance, the school gives them feedback to correct the mistakes and at this stage the application and expansion take place, this is confirmed by (Lamia Al-Diwan and Hussein Farhan Sheikh Ali 2016) <sup>[4]</sup> "When the student performs the skills Kinetic The school often uses words to motivate better performance or to modify performance. The researcher believes that this growth in the technical performance of the skills studied came as a result of touching gone from the norm in teaching, as the McCarthy model had a role in assembly the learner the effort of the educational progression, and his performance was organized and arranged according to the stages of the model in totaling to the use of various places, and incessant direction from the subject school to perform those movements, which helped reduce the errors that the learner might make in performing the exercises during the educational unit, and this is what motivated the learners to respond to this model, trying to succeed and to prove their abilities, assert themselves and prove their capabilities. Which facilitated the process of understanding and absorbing the skills under study in its three sections (preparatory, main, and final), in addition to the fact that the reasons for these differences are due to the fact that the new educational activities that the initiates were exposed to, which are characterized by a clear goal and what the learners are required to achieve, were not common in the units. The regular didactic

process, which led to a rich advance in their performance, and this is what was indicated by (Qalada. 1989) <sup>[5]</sup> “The clarity and identification of goals in the light of certain behaviors or performance levels, they are meaningful and effective”, The interaction that exists between the members of the same group and their active discussions regarding the educational task that they perform has an impact on their understanding of the educational material. The researcher also attributes the reason for the moral difference of the members of the experimental group at the expense of the members of the control group in the post-tests to the time of using the McCarthy model that she prepared, which had a great impact in making the learning process more effective and positive through the model that provided the opportunity for the student to be an active element in the educational process. This is what was indicated by (Al-Heila. 1999) <sup>[6]</sup> “When the curricula are implemented according to the allotted time effectively, the student’s general performance improves a lot, and then he provides a better level of performance” displaying them using educational means on the skill and providing learners with feedback constantly increases learners’ motivation and leads them to accurate skill performance and this is what was applied in the third stage of the model (active experimentation), what is in line with the last stage of the McCarthy model (physical tangible experiences) in which the steps of purification and performance are applied, and in this regard (Al-Heila. 2001) <sup>[7]</sup> states, “The educational means work to achieve communication and transfer educational goals from the teacher to the learner, and it increases the effectiveness of the process Learning and improving it, and motivating learners to more participation in educational situations and stimulating it to participate in more and continuing learning, and it also facilitates the process of remembering by recalling information” This helps to gain a kind of fixation for the motor programs in the minds of the learners as a result of the time that the program took, which led to the first beginnings of gaining a kind of experience, and this is another and important factor in developing the level of learners. Both (Liba.1971) <sup>[8]</sup> and (mohr. 1960) <sup>[9]</sup> mention that “training for a specific period leads to an improvement in accuracy, and that experience is directly proportional to accuracy.”

The researcher was also keen when applying the McCarthy model that an important aspect of the application of the model goes to support the meditators’ style by asking various questions regarding skill performance and giving the students enough space to think and answer them, and then choose the optimal answer, as the meditators are distinguished by their awareness of information Through direct experience, relying on the senses and perception, the student spends most of his time thinking and searching for direct meaning, clarity, and the tendency to merge experience with the self, and this is what (Jawad. 2011) <sup>[10]</sup> pointed out: This is shown by answering the following two questions (Why do I learn?, What do I learn?), and in order for the learning to be meaningful, it is necessary to link the new educational experience with the learner’s previous knowledge related to it, in order to stimulate motivation and make the new experience valuable for the learner., and confirms this (Wissam Salah Abdul-Hussein and et al. 2018) <sup>[3]</sup> “The learning of the meditators should be through dialogue, listening and exchanging ideas, and they have a wide imagination and insight, and work to achieve harmony and deal with problems.” by thinking and then deliberating and consulting with others.”

This model also contributed to making the difference for the (crystallization of the concept) in the theoretical dimension took into account the owners of the pragmatic style through what was shown of the pictures and videos that illustrate the stages of technical performance of the skills under study, and this is what contributed Effectively in making teams, through a full perception of the stages of technical performance of skills and the gradation in acquiring the concept from easy to difficult, and thus making learning the concept meaningful for the students, as the stages of technical performance were linked and made in an integrated manner close to the reality of the actual matches.

Those with the instrumentalist style are distinguished in their learning to present facts and information by focusing on the content of what they learn through observation and classification in order to satisfy their desires to know what they do not know about the new educational concept or experience. This is evident by answering the question (what?, or What do others know about experience (Amal Najati Ayyash and Abdel Hakim Mahmoud Al-Safi. 2007) <sup>[11]</sup>.

## Conclusions and recommendations

### Conclusions

- There is a positive development for the experimental and control research groups for the technical performance of the basic skills on the floor movement apparatus in the gymnastics for female students.
- The exercises that were prepared according to the steps of the problem-solving strategy greatly helped in developing the skill of the front rolling, the back rolling, handstand and the human wheel (cartwheel) among the experimental group students.
- The exercises that were prepared according to the steps of the McCarthy model greatly helped in developing the members of the experimental group at the expense of the members of the control group in the basic skills on the floor movement apparatus in the gymnastics in question.

### Recommendations

- Working on organizing the content of the subject with an educational design according to the steps of the McCarthy model and in a manner that is appropriate and achieves the educational goals set.
- Conducting research and studies to find out the effect of using the McCarthy model in developing cognitive, kinetic, and skill aspects in other sports.
- Conducting various research and studies to compare McCarthy's model with other models or with various teaching methods to find out their impact on learning basic skills with the effectiveness of gymnastics.

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