The Effect of Courses of the Preparation and Training Department to Developing Imagined Fluency According to (VTS) for Some Teachers and Female Teachers of Physical Education in the Karbala Education Directorate

Muntadhar Saheb Mahdi[1], Ali Hussein Ali[2], Mazin Jalil Abdulrasool[1], Wissam Salah Abdul Hussein[3]

[1]Lect. Dr., [2]Assist. Prof. Dr., [3]Prof. Dr., Faculty of Physical Education and Sports Sciences / University of Karbala, Iraq

Abstract

The research problem and its importance were dealt with while mentioning the imposition of the research and its objectives in which the researchers sought to measure imagined fluency with the latest technological technologies, some physical education teachers and teachers have knowledge of the effect of courses of the preparation and training department to developing this important mental variable. The researchers also dealt with the concept and types of fluency, the executive functions of the brain, cognitive flexibility, and other topics related to the research problem. Then the researchers mentioned the research methodology, its field procedures, the most important tools, devices and tests used, along with a detailed explanation of the Vienna Test System (VTS) abbreviated to (Vienna Test System). To conclude with the research results that were presented, analyzed and discussed. To come up with conclusions, the most important of which is the positive impact of the training courses held by the Preparation and Training Department, recommendations and scientific and practical proposals, most notably the call to establish a contemporary psychological laboratory in the Iraqi education directorates to measure and develop complex psychological, mental and personal capabilities. With documentation of Arab and foreign sources and an appendix to a sample for the result of the (5 point) test, which measures the imagined fluency and cognitive flexibility of the research sample

Key Words: *Imagined fluency , Vienna Test System (VTS).*

Introduction

Keeping up with technological progress in the fields and fields of life requires researchers to seek methods, means and tools that simulate this tremendous development in digital technologies in the field of education, especially with regard to the nature of the programs and curricula of the Preparation and Training Department [1], which provides its courses to teachers throughout the year in order to raise their scientific, knowledge and educational level, so that the participant can develop his psychological capabilities (mental and creative) to be reflected in his personal and professional abilities. Researchers believe that it is necessary to move from a strategy of imparting [2] knowledge to a strategy for producing knowledge to bring about a qualitative leap in psychological measurement and evaluation at the Preparation and Training Department in the Karbala Education Directorate. The importance of the research lies in the investment of modern computerized technologies in measuring mental capabilities and creative energies, such as imagined fluency, which cannot be measured with traditional methods, and harnessing technology to provide [3] an accurate database for the preparation and training department that enables it to rely on the same method and curricula for the courses or to make an amendment or addition to the content and method of the courses. Those interested in psychological sciences may notice the magnitude of the unprecedented trend towards acquiring and learning electronic and computer technologies, especially applied scientific innovations that have imposed their existence as an alternative [4]

to electrical and manual devices and tools in various fields and fields of scientific and practical life, which prompted researchers to experiment with these digital technologies on a research sample that represents part of Physical education teachers and teachers in the Karbala Education Directorate.

Research problem:

Researchers wonder about the nature of their work in the teaching profession for nearly (13) years about the effectiveness of the courses that the Preparation and Training Department annually holds for teachers and physical education teachers and the extent of its impact on developing their creative abilities, among which the most important is the visual fluency that shows the ability of (the teacher / school) to produce new ideas and expresses the extent of their ability to find quick solutions to the situation that they pass through being (conceptual fluency) is an indicator of the mental flexibility and visual perception that the teacher needs in all stages of preparing and implementing his theoretical and practical lessons, and before and during his participation in school tournaments periodically. The research problem can be summarized through the researchers' attempt to answer the following question:

Do the courses of the preparation and training department for physical education teachers have a positive impact on developing imagined fluency as an indicator of some of the mental and psychological abilities of the participants?

Research objectives:

- Identifying the level of imagined fluency and creative thinking of some physical education teachers according to the (VTS) system.

- Identify the effect of the preparation and training department courses on developing the conceptual fluency of the research sample.

Research hypothesis: The presence of statistically significant differences between the results of the pre and post-test in the conceptual fluency of the research sample..

Research fields:

The human field: Physical education teachers participating in the preparation and training department for the academic year 2017-2018 in the Karbala Education Directorate..

Time field: For the period from 14/10/2020 to 1/2/2021.

Spatial field: Course hall in the preparation and training indoor gymnasium.

Methodology:

The researchers used the experimental approach to design the one experimental group with pre and post-test, as it fits into the nature of the research problem.

Community and sample research:

The community of origin is represented by teachers of physical education in the Karbala Education Directorate, who participate in the annual training courses of the Directorate of Preparation and Training, a random sample was chosen from among the participants in the training courses to apply the mental test to them. The number of male and female teachers within the experimental group reached (20) teachers and female teachers representing (40%) of the total number of participants in the training course for the academic year (2017-2018) and of (50) teachers from among the participants in the training course, as (4) were selected Examined by two (2) teachers and two (2) female teachers as a survey sample, so the number (16) was examined as a main sample for the research.

Devices, tools and means used in the research:

Means of data collection:

- Arab and foreign sources and references.

- User test.

- The global information network (the Internet).

- The assistance of the experts of the Austrian company Schofried, the manufacturer of psychological systems.

Tools and devices used:

- The Vienna Test System for Psychometric Assessment and Evaluation.
- 1 laptop HP electronic calculator, origin tray.
- Desktop Discovery Calculator, number 1, Chinese origin.
- Microsoft Office suite of programs for word processing and tables.
- SPSS data analysis program to statistically process numbers and results.
- 1 x HP laser printer, origin tray.
- Sony digital camera, number 1, of Chinese origin.
- Chair for sitting the subject and examiner, number 2.
- Record for taking notes, number 1.

Vienna Tests System VTS:

The Vienna Test System for Psychological Screening and Assessment is one of the systems produced by the Austrian company Schuhfried, which is prepared on the computer, one of the most important systems of the contemporary psychological laboratory, and the portable (mobile) laboratory, which is called in short the VTS system, as this system contains a large group of tests And diagnostic tests, including:

- Alternative tests and standards for specific tools or devices.
- Tests and benchmarks that require computer-controlled devices.
- Tests and benchmarks using the Multimedia feature.

Steps to work on the VTS:

- **Enter the full information of the subject:** With the test date, and everything related to the subject.
- **Choose the type of test:** As the VTS system contains an integrated set of modern and contemporary tests in the field of sports, and thus the type of examination required is chosen from among a group of tests for individual and team games and other international tests, and there are diagnostic tests, tests for attention and perception functions, stress tests, etc. It is also possible to store data and compare the results of the subjects with each other.
- **Test application:** After completing the entry of the subject's data and completing the process of selecting the tests to be applied, the test shall be applied face-to-face in front of the computer screen directly, by pressing the buttons on the system's control panel according to the instructions given by the researchers to each laboratory individually.
- **Test evaluation:** After the subject completes his answer to the test, the VTS system evaluates the test automatically.
- **View and print the test results:** The results of the tests are clearly displayed on the computer screen, and can be printed immediately after the completion of the test, which makes the Vienna tests system for examination and evaluation an original and professional scientific research tool, free from typographical errors, and far from the examiner's bias, see appendix (1).

Tests used:

The five point test (5point): [1]

The purpose of the test: It is a test that measures conceptual fluency in dealing with figures and images, divergent thinking, and executive functions.

Theoretical framework: The paper-based version of the Five Point Test, or FPT, is a common test of brain function. The test places requirements on various neuropsychological functions such as planning, cognitive flexibility and divergent thinking. The FPT is important as a clinical test that has been validated for both neurological and mental disorders. The effect of various demographic variables was also discussed in the description of this test, especially with regard to age

and academic achievement, as they appeared to affect performance on the FPT test.

Note that the current test is based on an experimental proven model to measure divergent thinking as an aspect of executive functions. This test can be used to assess neuropsychological deficits and prepare for a therapeutic intervention.

Test application: The test consists of squares, each of which contains five points or spots (similar to the number 5 on a die). And the test takers must produce as many shapes as possible within just two minutes, subject to certain rules. Shapes involve connecting two or more points (spots) with straight lines.

Registration and calculate the scores: The main variables describe the total number of shapes produced, the number of valid shapes, and errors occurring in different situations. The number of strategies used, the error rate and the percentage of correctly formed paragraphs are also recorded.

Reliability of test : The test reliability was estimated by calculating the alpha-Cronbach equation and other measures of stability using standard sample data. The alpha-Cronbach fluency coefficient was estimated using figures around 0.861. Therefore, the test reliability could be classified as high stability.

Validity of test: There are significant field indications of the validity of the task model used in the five-point test. As the test correlation coefficient itself with the paper version of it provides evidence of the availability of construct validity for this test. The validity of the construction was also verified by calculating the correlation coefficient between the five-point test and other neuropsychological tests.

Standards: The standard sample for the Langensteinback (Five Point Test) included 331 participants representing all age groups of the adult population.

Field research procedures:

The researchers conducted a computerized test using the Vienna Test System (VTS) for mental measurement and evaluation to measure visual fluency as an indicator of creative and divergent thinking and cognitive flexibility in order to identify the level of participants in this subtle variable. After completing the course established in the Preparation and Training Department, the researchers re-tested the research sample in order to compare the pre- and post-results, and use the statistical bag (spss) to statistically process the data to identify the differences between the pre and post results to know the effect of the course, its approach, and its effectiveness on the research sample.

Pre-test:

The researchers conducted pre-tests on the research sample on 10/15/2020 from (9:00) in the morning until (2:00) in the afternoon in the lecture hall in the Directorate of Preparation and Training. The researchers recorded and installed all the conditions related to the tests in terms of time, place, devices, and the method of carrying out the tests in order to create the same or similar conditions when performing the post-tests.

Main experience:

After completing the pre-tests using the Vienna Test System (VTS), the researchers waited for the participants (including the research sample) to finish receiving the vocabulary of the training course held by the Preparation and Training Directorate of lectures, theoretical lessons, practical applications and workshops, which took (5) days until the conclusion The session is on 19/10/2020. The researchers, in cooperation with the respected Director of Preparation and Training, coordinated the research procedures as follows:

The first section: Explanation of the test: With an indication of the importance of the abilities measured by the test and the extent of their relevance to the personality and mentality of the teacher and their reflection on his job performance with students in the physical education lesson and school tournaments.

The second section: Explaining how to apply the test: It is the stage that precedes the implementation of the test, as the researchers have a full explanation of how to perform the test so that the subject does not make

errors that may affect his final result.

Post-test:

After the research sample completed the period allocated for the curriculum training course, the post tests were conducted on 29/1/2021 in the closed gymnasium, and the researchers were keen to conduct the post tests in conditions similar to the pre-tests.

Statistical methods used: Statistical methods were used in the Statistical Data Processing Program (Spss).

Presentation, analysis and discussion of results:

The researchers presented, analyzed and discussed the results of the pre and post-tests of the research sample, as the results were presented in the form of tables and figures, because they are an explanatory tool for the research as it reduces the possibility of error in the following stages of the research and strengthens the scientific evidence and gives it strength [(2)], on the conceptual fluency and to achieve the first objective of the research, which states: (Identifying the level of conceptual fluency and creative thinking of some physical education teachers according to the (VTS) system).

In order to know the extent of the impact of the training course (in developing the conceptual fluency of the research sample) established by the Preparation and Training Department, and to achieve the second research objective, which states: (Identify the effect of the courses of the Preparation and Training Department in developing the conceptual fluency of the research sample). The researchers presented the results of the pre and dimensional research sample in the research variable, analyzed and discussed them.

Presentation and analysis of variable results (imagined fluency):

Table (1) it shows the arithmetic mean, standard deviation, and (t) value between pre and post-test in the variable (imagined fluency)

Variable	Pre test		Post test		T value Tabular	T value Calculated	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation				
Imagined fluency	42.750	19.264	74.000	21.639	2.042	4.314	.000	Sig

Significant ≤ 0.05 at degree of freedom (30).

Through Table (1), we find that in the variable (Imagined fluency) the arithmetic mean was in the pre-test with a value of (42,750) and a standard deviation of (19,264) .As for the post test, the arithmetic mean was of (74,000) and a standard deviation of (21,639) when calculating the value of (V) The calculated value appeared with a value of (4,314) and with a real meaning of (.000) which is (smaller) than (0.05). This indicates that the difference is (significant) and in favor of the (post) test. Figure (1) shows the values of the arithmetic mean for the pre and post-test in the variable fluency conceptual

Discussion the Results of Variable (Imagined Fluency):

By displaying and analyzing the results of the pre and post- tests of the research sample that was presented in table (1), the results showed us the presence of significant differences between the two tests and in favor of the post- test in (Imagined fluency), as the researcher attributes the reason for this development to the effect of the training course whose contents were

received by the members of the research sample. With the theoretical and practical materials included in the course curriculum at the hands of specialized professors, which reflected positively on the speed and accuracy of thinking and the creation of many new and creative forms within the influence of the time pressure factor, which expresses superior and rapid mental capabilities in the process of divergent and creative thinking, as the intensive theoretical lectures in the preparation and training department produced an integrated effect on the mental abilities of the participants and increased from their mental cognitive flexibility, which reflected positively on their performance and improving their abilities to create diverse and creative perceptions and shapes in the shortest possible time, this indicates the development of the velocity of the inherent reaction, which is generated from the speed of branched thinking associated with the development of conceptual fluency in the research sample participating in the training course of the preparation and training department.

The researcher also attributes the reason for this development to the effect of practical applications in the games hall, which reflected positively on the method of manufacturing and producing out-of-the-ordinary solutions to perform the required training and competitive duties, because the tests focused on measuring and evaluating the participants' unfamiliar mental dimensions, so the participants were forced to use new methods to meet the test challenge. Which makes the tester able to get out of difficult situations with high efficiency as he has developed the ability to find the appropriate alternative at any critical moment and as soon as possible. The aforementioned meaning is consistent with the concept of (cognitive flexibility), which refers to the brain's ability to use alternative pathways and rely on new brain activity and patterns to meet its needs. (The main message that can be obtained from this cognitive flexibility is that if you work to preserve cognitive ability, and engage yourself in learning new things and difficult mental activities, the likelihood that cognitive flexibility will work to your benefit increases by delaying any impending disturbances in your mental ability compared to individuals. They did not participate in such activities [(3)].

The researcher also attributes the development in this variable to the presence of individuals from the subjects who have completed their higher education or are still in the study, and this factor supports the subject's cognitive side and strengthens his ability to think creative and divergent, as (one of the factors that contribute to innovative thinking is flexibility factor) (72:24), which helps him to carry out synthesized procedures and advanced coordination efficiency between the surrounding variables and the ability to quickly adapt to the emergency event due to the cognitive stockpile revealing a significant increase and development in his cognitive flexibility. This is called adaptive flexibility (and it refers to the ability that helps an individual solve problems that require an unusual solution[(4)].

Conclusions and Recommendations

Conclusions:

- The computerized 5 point test within the (VTS) system enables the measurement of conceptual fluency and divergent thinking with high accuracy compared to other tests.

- The training courses held by the Preparation and Training Department for physical education teachers have a great positive impact on developing conceptual fluency and creative and divergent thinking.

- The results showed statistically significant differences for the research sample in the variable of conceptual fluency, which reflects the development of the research sample in this variable and the maximum benefit from the theoretical and applied information included in the training course.

Recommendations:

- Researchers should use the computerized mental test (5point) and other tests within the Vienna Test System (VTS) in psychology studies and research.

- Those in charge of the training course curricula should pay attention to the curricula including theoretical and practical materials for developing the psychological aspect of the participants (by measurement and training) as much as they are interested in developing other

aspects. To keep pace with the scientific development in the developed world.

- The Preparation and Training Department of the Holy Karbala Education Directorate and the rest of the governorates adopted the establishment of an integrated contemporary psychological laboratory equipped with the latest digital devices and equipment, due to the data it provides that are difficult to find elsewhere.

- Adopting some mental and personality tests as part of the differentiation and acceptance tests for new teachers applying for appointment in all education directorates as part of the personal and intellectual requirements.

- The directorates of the Ministry of Education in general and the Karbala Directorate of Education in particular have adopted the Vienna test system for measurement, psychological and mental diagnosis, to assist in the process of selecting students in schools of excellence, challenge schools and applicants to accelerate, to determine the level of their mental abilities and personal characteristics as an objective alternative to paper-based intelligence tests.

- Conducting a comparative study between the results of male and female teachers participating in the training courses held by the Preparation and Training Department.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved and all experiments were carried out in accordance with approved guidelines.

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