

## THE RELATIONSHIP OF VISUAL INTERFERENCE TO SELECTIVE ATTENTION AMONG SOME PREPARATORY SCHOOL FOOTBALL PLAYERS IN KARBALA GENERAL EDUCATION DIRECTORATE

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### Abstract

The purpose of this paper, in which the researchers sought to study and find the correlation and mutual influence between two important mental variables in producing the correct and rapid response and reaction of a sensitive age group of football players using computerized technologies equipped with artificial intelligence, while identifying areas of temporal, spatial and human research and clarifying Ambiguous terms, where the researchers were able to use the STROOP and LVT tests within the Vienna Test System (VTS) system to measure visual interference and selective attention with high accuracy and objectivity compared to the paper-and-pencil tests with the emergence of a significant correlation between visual interference and selective attention and the existence of a mutual effect between them, and the researchers found in their results that the dispersion experienced by football players in the preparatory school is due to the large number and multiplicity of stimuli and their overlapping around them with the high number of duties assigned to them with the weak ability to respond correctly to more than one stimulus at the same time, and that the perceptual convergence of stimuli contributes to the player's failure to choose the appropriate stimulus from among the Rapid visual stimuli, and a set of recommendations were made, the most important of which is the adoption of visual tests. The computerized mentality in selecting and training the players of the school teams participating in the national championships by the Directorate of Sports and School Activity, because of the data it provides that are difficult to extract using traditional tools, and the call for the establishment of a contemporary psychological laboratory in the Iraqi directorates of education, with documentation of Arab and foreign sources and an appendix of two models for the two tests that measured the overlap Visual and selective attention to the members of the research sample.

**Keywords:** Visual interference. Selective attention

### Introduction

Identify mental processes is influential in the manufacture of motor and skill responses, such as attention, which is the balance between other mental processes since, without it, a person cannot learn or distinguish in something, as it is an important psychological characteristic on which most mental and physical processes are based<sup>(1)</sup>. It is a type of conditioning that specifically refers to sensory or mental adaptations that contribute to or interfere with perceptual or motor responses<sup>(2)</sup>. What is disturbing about the subject under study is that the football player, especially at this age, is exposed to a torrent of divergent and often inconsistent stimuli, which cause types of external and internal pressures that negatively affect his performance as a result of the visual interference that distracts the player's attention and concentration, which it calls for exerting more mental effort to carefully select from among the surrounding stimuli and neglect the rest of the stimuli or isolate them temporarily until the appropriate time or circumstance is reached to pay attention to them and focus on them

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again. Hence, we find that this study attempts to evaluate the relationship between visual interference, selective attention and scientific inference. On the extent of the mutual influence between them, negatively or positively, and seeking the type of relationship, whether direct, inverse or integrative, through the use of the latest computerized digital devices and technologies represented by the Vienna Test System (VTS) for psychological measurement and evaluation within the contemporary psychological laboratory systems in measurement and training, in order to reach data. It is difficult to obtain it without this advanced global digital tool, which the researchers have long adopted as a means of measuring, training and developing myself in most of their scientific research, both experimental and descriptive, and it is worth noting that the researchers are experts of this computerized system and among the first working in its scientific field in Iraq and the Arab world with the certificate of the manufacturer, believing in the necessity of keeping pace with the scientific development of the advanced world countries.

### Research problem

The procedures that are at the fore in the research tasks of many scientific institutions in the developed world is taking care of psychological, mental and personal processes, measuring their capabilities, and knowing their strengths and weaknesses. And through the researchers' observation of the lack of interest in mental aspects in terms of measurement and training, with their great importance in diagnosing individual levels and differences in the field of school sport in general and among the school football players in particular, in the stages of selection, preparation and competition, the researchers personified through their experiences in teaching and training for many years that most of the school team players at this age suffer from a state of reluctance to choose the stimuli around them because of their abundance, speed and overlap, especially when they are asked to complete more than one task or skill at the same time, which led the researchers to seek the relationship between visual interference and selective attention. And to identify the extent of the mutual influence between them, which provides a rich and accurate database for teachers based on the training process, based on global digital mental tests, which are considered one of the latest computerized techniques for measuring and evaluating complex mental processes.

**Research Objectives:** The two researchers aim to achieve the following:

- Identifying the level of visual interference among some preparatory school players according to the (vts) system.
- Identifying the level of selective attention of the research sample according to the (vts) system.
- Identifying the relationship between visual interference and selective attention among the research sample.

### Research hypotheses

- The existence of a correlation between visual interference and selective attention in the research sample.

### Research fields

- The human field: the players of the preparatory school teams participating in the school championship for the year (2018-2019) in the Karbala Education Directorate.
- Time field: for the period from 15/10/2018 until 1/5/2019.
- Spatial field: 1- Karbala Preparatory School for Boys. 2- Hussein Mahfouz Preparatory School for Boys.

### Research methodology and field procedures

#### Research Methodology

The researchers used the descriptive approach in the style of relationship studies and correlational studies for identical samples, as it fits the nature of the research problem.

#### Community and sample research

The community of origin is represented by the players of the school teams participating in the football championship for preparatory school students in the Karbala Education Directorate. A deliberate sample was chosen from among the participating students, as (30) students were selected from the preparatory schools of Karbala and Hussein Mahfouz, with (15) students from each middle school to apply Mental tests on them, representing (13%) of the total number of participants in the school championship for the academic

year (2018-2019), amounting to (224) students. Choosing (4) students as an exploratory sample. Because of the absence of (3) students from attending one of the tests, the number of students was (23) examined as the main sample for research.

### Means, tools and devices used

#### Information collection methods

- Arab and foreign sources and references.
- Computerized tests used.
- The exploratory experience.
- The use of experts in the contemporary psychological laboratory.
- Statistical means.
- The World Wide Web (Internet).

#### Devices and tools used

- Vienna Test System for Psychological Assessment and Measurement.
- Microsoft Office suite of programs for word processing and tables.
- An electronic calculator, Laptop type hp Chinese of origin.
- SPSS data analysis program to statistically process numbers and results.
- 1 hp laser printer, of Chinese origin.
- Chair to sit the examiner and examinee, count 2.
- Record to take notes, count 1.

#### Vienna Test 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<sup>(3,4)</sup>, as this system contains a large group of tests and diagnostic tests, including:

- Replacement tests and measures for specific tools or devices.
- Tests and measurements that require devices that operate under computer control.
- Tests and standards that use the multimedia feature.

The (Vienna) tests system consists of a basic software, the Dongle to act as a copy protection tool to ensure the security and protection of copyrights, and the set of checks and tests that we want to use, and it is possible to choose from more than 130 tests and the standards that correspond to the questions we want to apply, and in the language, we want to apply. It also contains input devices and external devices, as most of the checks and tests can be displayed and applied via the traditional keyboard and mouse, or optionally by special input tools and external devices dedicated to this purpose as desired.

The Vienna Test System has several advantages, including

- The system is a modern, high-quality product.
- It is an essential central system for any contemporary psychological centre or laboratory.
- The system can be carried in a special bag prepared for this purpose, to conduct tests outside the psychological laboratory, to become one of the portable psychological laboratory systems.
- It can be run and various tests applied in several languages. The basic program of the system is available in eight different languages, and many tests are available in more than 24 different languages, including our Arabic language.
- Receiving and sending data to and from other systems or software such as the Spss statistical program or the MS-Excel program and others.
- Automatic generation of reports (results) immediately after the completion of the application of tests, away from the examiner's bias.

#### Steps to work on the Vienna Test System

The Vienna Test System can be used as a means of psychological examination and diagnosis within the psychiatric laboratory, through the following steps:

- **Enter the complete data of the sample:** with the test date, and everything related to the sample

- **Choosing the type of test:** The VTS system contains an integrated set of modern and contemporary tests in the sports field. Thus, the required test type is selected from among a set of tests for individual and team games and other international tests. There are diagnostic tests, tests for attention and cognitive functions, stress tests, and others. It is also possible to store data and compare the results of the examinees with each other.

- **Test application:** After completing the data entry of the examinee and completing the process of selecting the tests to be applied, the test application is started face to face directly in front of the computer screen, by pressing the buttons of the control panel of the system according to the instructions given by the researchers to each laboratory individually.

- **Test evaluation:** After the examinee completes his answer to the test, the VTS system evaluates the test automatically.

- **Display and print test results:** Test results are clearly displayed on the computer screen, and can be printed immediately after the test is completed, which makes the Vienna Examination and Evaluation System an authentic, professional and scientific research tool, free of typographical errors, and far from examiner bias.

### Research tests

#### Stroop Interference Test

**Purpose of the test:** To measure the optical interference ability.

**Application:** Recording the degree of discrepancy or disturbance (interference) in reading the colors of words, i.e. the deficit in reading speed or color discrimination caused by the conflict of information<sup>(5)</sup>.

**Main fields of application:** neuropsychology, sports psychology, clinical and health psychology.

**Theoretical basis:** The current form of the Stroop test gives a programmed example of color conflict in words. It is based on the assumption that the reading speed is slower if the word is written in a different color than the meaning of the word represents, that is, there is a delay in reading the color of the word if the meaning of the word that refers to a specific color does not match the color of the font. This model sees that the reason for the interference is due to two experimental conditions are:

- Determine the reading speed for the color of the word itself.
- Determine the speed of the color naming.

This first performance is used as a basis linked to two conditions:

- Reading speed with experimental adjustment for color overlap or conflict, meaning that the color reading speed decreases if the line is of a different color.
- Experimental control of word interference, as naming the color is more difficult because the color represented in the meaning of the word does not match the color of the font used in writing the word itself.

The task of performing the exam or test is to press the correct input field or word button as quickly as possible. Its color appears on the screen on the response panel that contains four colored buttons: blue, red, green and yellow, where the subject presses the key, whose color appears on the screen, and after a short period of time the color words appear in brown, and then the names of the colors appear, but without their colors, for example, the word yellow appears in green. But the examinee is required to press the color regardless of the word, and after a short period the examinee is asked to press on the basis of the color of the word shown on the screen, regardless of its name.

Several forms are available for this test, and a symbol for each of these forms is determined according to the basic rule, and then the instructions are specified (name of the participant / not to call the color out loud). The researchers used the S7 test form for team games in the sports field, as it is updated according to the latest studies.

The main variables in the test include the reading disorder (i.e. the difference between the response time to the overlap condition or the reading conflict and the basis of reading with the label overlap, i.e. the difference in the response time to the overlap condition and the base naming rule). The following variables are extracted and determined for each participant and according to each part the test is:

- Average response time
- Number of wrong answers.

Correction of test results indicates each answer (correct or wrong) for each

participant along with the time taken to answer and answer evaluation. While the test time is about 15 minutes.

### Visual Pursuit Test

**The purpose of the test:** This test measures the performance of visual orientation of simple structures in a complex environment characterized by high stability and several proofs related to validity test<sup>(3)</sup> as show in figure (1).

**Application:** Assessment of the ability and skill of visual guidance to obtain an overview, to be used with adults, and for this reason, this test is suitable for assessing selective visual attention.

**Theoretical basis:** Special psychological tests that are used to assess the most complex dimensions of understanding. Most of these tests have been developed in connection with specific areas of experimental psychology or practical cases. The Current Visual Quest Test is not just a remake of an old test, but it has been developed from previous experience and observations. It evaluates the performance characteristic of visual guidance by tracing simple visual elements in a relatively complex environment in the field of sports psychology. The topic requires focused action and distractions under time pressure are neglected.

The examination proceeds from the integration of the practical application and education (training) phase. The practical application materials are made with less than three errors, then the test moves to the paragraphs of another stage where a row of lines is presented and the examinee must find the end of the specified line as quickly as possible.

There are several forms of the test, including:

- S1: long-form with 80 paragraphs.
- S2: short form with 40 paragraphs.
- S3: Test format (a form for selecting individuals).

The S3 test was used as it fits the requirements of the research sample, according to experts

**Scoring (Correction of the examined responses):** The scores of the following variables are calculated: the score achieved, and the average time for correct answers (calculated per second).

**Test time:** between 5 to 25 minutes (including instructions and training phase) depending on the test format applied.

**Stability:** The internal consistency of this test was  $R = 0.96$  for the long-form,  $R = 0.92$  for the short form and  $R = 0.92$  for the examination form.

**Validity:** There are currently studies conducted by (Cale, 1992), (Neuwirth & Karner 2000) and (Sommer, 2002), which indicate who is subject to the test and whose performance is below average (level) in the test is more Prone to accidents from their driving ability. Sommer was also able to show that the test battery that includes the visual striving test correctly tracked 74.4% of the global ratings for driving behavior as well as comparing them to groups that contrasted with the sample of drivers who had alcohol-related offences (Karner, 2000) and with psychopaths and neurotics (Neuwirth & Dorver, 2000) These studies provide clear evidence of the validity of the visual quest test.

The validity of the synthesis is equipped with very important correlations between the characteristic values of the visual quest test based on a similar synthesis, the ART90 (Karner, 2000), and between the visual quest test and other tests that measure attention and concentration.

**Standards:** Standards samples of size  $n = 221$  to  $n = 785$  are included in three forms of the visual endeavor test (LVT). Some criteria are separate for age and educational level (Figure 1).

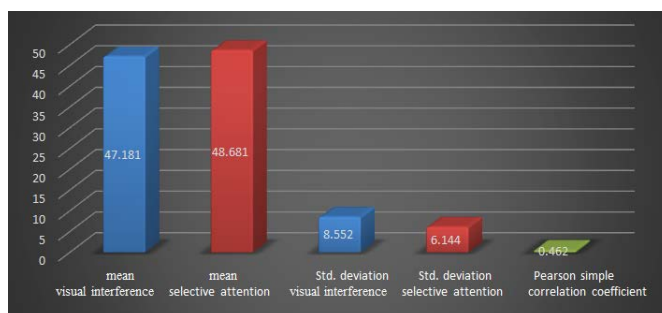


Figure 1: Shows the visual pursuit test.

### Field search procedures

The researchers conducted two computerized tests using the Vienna Test System (VTS) for psychological and mental assessment and evaluation to examine the visual interference and selective attention in order to identify the level of participants in these two precise variables and the nature of the relationship and the mutual influence between them, using the Statistical Package for the Social Sciences (spss) to treat the data statistically to prove the research hypothesis that there is Correlational relationship between selective attention and visual interference or its absence in the research sample.

**Exploratory experiment:** It is the detection of mysterious episodes, and it is considered one of the very important and necessary means in carrying out research<sup>(6)</sup>, which is the reconnaissance of the circumstances surrounding the phenomenon that the researchers want to study, so the two researchers conducted an exploratory experiment on (4) examinees. The researchers conducted tests on the exploratory sample in order to identify the most important requirements in the main experiment, and that the purpose of the exploratory experiment:

- Estimate an approximate time to complete the tests.
- Identifying the efficiency of the devices used in the research.
- Identifying the obstacles and difficulties that the researchers may face.
- Recognizing the suitability of the tests to the research sample

The objective of conducting the pilot experiment and the desired benefit from it were achieved.

### Main experience

After completing the diagnosis of the problem and selecting a sample of the exploratory experiment and the rest of the preparatory procedures to perform the tests by means of the Vienna Testing System (VTS), the researchers coordinated the research procedures by explaining the nature of the test in detail with an indication of the importance of the 5 variables: which the test measures and the extent to which they relate to mental abilities and their reflection on Technical and tactical performance during training periods and competition in school tournaments. It was also explained how to apply the test, which is the stage that precedes the implementation of the test, as the researchers explained adequately how to perform the two tests so that the examinee does not make mistakes that may affect his final result, to extract the results and seek the relationship between the two variables under study to reach the test of the correlation between them through the use of statistical means occasion.

### Statistical means

The necessary statistical methods were used to process the results and test the research hypothesis. The statistical methods help the researchers describe the data and draw conclusions for large amounts of data. The researchers used the appropriate statistical methods to extract many values: such as the arithmetic mean - standard deviation - the value of the correlation coefficient through the use of a test Pearson to test the correlation of quantitative results (scores) within the Statistical Package for the Social Sciences (SPSS).

### Presentation, analysis and discussion of results

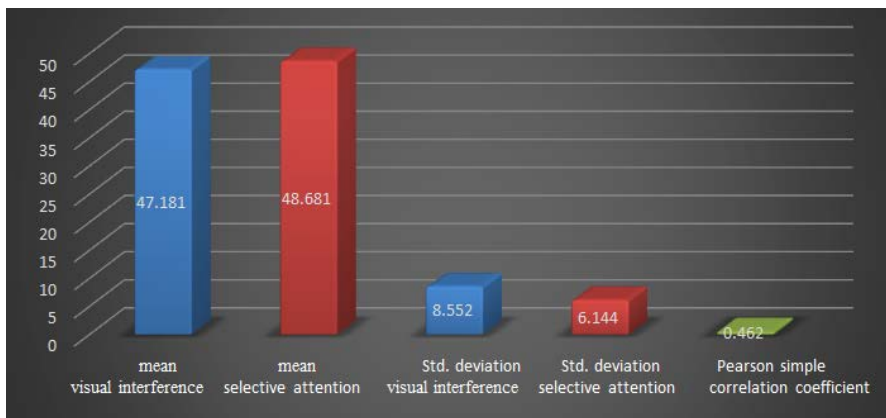
The two researchers presented, analyzed and discussed the results of the tests for the research sample and verified the nature of the relationship between the variables of visual interference and selective attention. The researchers presented the arithmetic means and the standard deviation of the research variables and their analysis, as well as the presentation, analysis and discussion of the value of the Pearson simple correlation coefficient. Scientific evidence and give it strength<sup>(7)</sup> (Table 1).

### Presentation and analysis of the results of the two research variables (visual interference and selective attention)

In order to identify the visual interference and to achieve the first goal of the research, which states: (recognizing the level of visual interference among some preparatory school players according to the (vts) system), and in order to identify selective attention and to achieve the goal of the second research, which states: (recognizing the level of attention The selectivity of the research sample according to the (vts) system). The researchers presented the results of the variables of visual interference and selective attention and analyzed them as follows: It is clear from the above table and figure that the arithmetic mean of the variable of visual interference reached (47,181) in the research sample, while the standard deviation in this variable was (8.552), and the arithmetic mean of the variable (selective attention) was It reached (48.681), while its standard deviation was (6.144). As shown in (Figure 2).

**Table1:** Show the mean, standard deviation, and Pearson simple correlation coefficient value are shown between visual interference and selective attention.

Variables	Arithmetic mean	Standard deviation	Pearson simple correlation coefficient	Sig level	Sig type
visual interference	47.181	8.552	0.462	0.000	sig
selective attention	48.681	6.144			



**Figure 2:** Shows the means, standard deviation, and the value of the Pearson simple correlation coefficient for the variables of visual interference and selective attention.

**Presentation and analysis of the value of the Pearson simple correlation coefficient for the two variables (visual interference and selective attention)**

In order to find out the extent of a correlation and a reciprocal effect between visual interference and selective attention, and to achieve the third goal, which states: (to identify the relationship between visual interference and selective attention in the research sample), and from In order to verify the hypothesis of the research, which states: (there is a correlation between visual interference and selective attention in the research sample), the researchers presented and analyzed the value of the Pearson simple correlation coefficient as follows:

Through the above table and figure, it is clear that the simple Pearson correlation coefficient reached (0.462), and this indicates the significance of the correlation between the two research variables at a degree of freedom (20) and below the level of significance (0.05).

**Discussing the results of the relationship between the two variables (visual interference and selective attention)**

Based on the results of the advanced research and according to the above data, it was found that there is a correlation between visual interference and selective attention, and this confirms the existence of the mutual effect between them, and since the value of the correlation is positive, this indicates that the relationship is direct between the interference variable Visual and selective attention, meaning that the strength of one leads to the strength of the other and the weakness of one leads to the weakness of the other. On the other hand, the researchers attribute this relationship to the presence of convergence in the components and nature of each variable, as the visual interference includes a form of divided and distributed attention, to enable The football player can direct his awareness towards more than one exciting at the same time without falling into error and suspicion, and this matter creates individual differences between the players, as the ability to focus on more than one trait or requirement between them is a form of similarity that requires a high ability to distinguish and not Suspicion, as the two researchers agree that visual interference is a joint process between attention and perception as a result of the entry of two or more stimuli that may bear similarity in shape, color or character. This similarity needs a special kind of purification and selection from among the convergent stimuli, as this meaning confirms (Saleh Hassan, 2008) by defining attention as: (a filter to filter information at different points in the perception process) <sup>(8)</sup>.

The above meaning is not far from the concept of selective attention, which is considered one of the most important types of attention according to the division based on the type of stimuli, as defined (Sami Mohsen et al., 2010) as the individual's attention to something he cares about and tends to, and for example, the individual's attention For the football match as an interesting game for him <sup>(9)</sup>, as it is an important psychological characteristic on which most of the important mental and physical processes are based <sup>(1)</sup>. The two researchers agree with (Marwan Abu Hawij and Samir Abu Moghli, 2004) that it is a type of conditioning that refers specifically to sensory or mental adaptations that contribute to or interfere with perceptual or motor responses <sup>(1)</sup>, and this concept is close to the concept of Visual interference that includes

the advanced sense of selective attention. And selective attention, or what is meant by the selection of attention, which is the player's ability to choose the type of stimulus to be paid attention to and neglecting other influences according to the importance and need for them (10). The researchers believe that the stimuli around us are many and varied, and from here the ordinary or athletic individual must choose What is important from it is due to its immediate state and gives the most important over the important, according to a certain priority and order to choose what is most appropriate based on logical considerations in the light of which the stimulus has been selected and responded to without others. This type of attention is usually evident in sports competitions, as the player is not able to respond to all the stimuli surrounding him, because this is difficult for him, rather it is impossible and sometimes impossible, so he will neglect, for example, the less important stimuli such as the voice of the audience or the call of one of his friends outside the stadium, and focus his attention towards The opponent's movement and the course of play, which is the most important stimulus at that moment, and it may come up in many cases to neglecting the coach's directions and not listening to them at all, because the player is busy responding to what is more important than the coach's voice and directions at that moment.

**Conclusions**

Through their findings, the researchers reached the following conclusions:

- The computerized Stroop and LVT tests within the (VTS) system were able to measure optical interference and selective attention with high accuracy and objectivity compared to the paper-and-pencil tests.
- The results showed a significant correlation between visual interference and selective attention.
- The results showed a reciprocal effect between the two research variables, as the relationship between them is a positive direct relationship.
- The researchers concluded that the dispersion experienced by football players in the preparatory stage is due to the large number and multiplicity of stimuli and their overlap around them with the high number of duties assigned to them and the weak ability to respond correctly to more than one stimulus at the same time.
- The researchers concluded that the perceptual affinity for stimuli contributes to the player's failure to choose the appropriate stimulus from among the rapid visual stimuli.

**Recommendations**

In light of the research results that were reached and the conclusions reached by the researchers, they recommend a set of recommendations, which are as follows:

- The need for researchers to use the two computerized tests (Stroop & LVT) and the rest of the tests within the Vienna Test System (VTS) in sports psychology studies and research.
- The physical education teachers who are in charge of the training process

should include in their training units many forms of complex mental exercises to increase the mental abilities of their students.

- The General Directorate of Sports and School Activities in the Holy Karbala Education Directorate and the rest of the provinces adopts computerized mental tests in selecting and training the players of the school teams participating in the national championships, because of the data they provide that are difficult to extract using traditional tools.
- Conducting similar studies for younger age groups than the research sample in this study.

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