**Tanta University**
**Faculty of Art**
**Department of Psychology**

Abstract Of a Dissertation Submitted For the Submitted For the Degree of Doctor of Philosophy in Experimental Psychology **Entitled** :

# Efficacy of Perceptual Motor Learning and Visual and Auditory Working Memory among High and Low in Imagination among Females College Students .

**The current Study aimed** to Investigate the Correlational Relationships among the Variables of the Study , namely the Efficacy of Perceptual Motor Learning , the Components of Working Memory , and Imagination , Each Considered Separately . It Also Sought to Predict Imagination through Efficacy of Perceptual Motor Learning and both Visual and Auditory Working Memory , In Addition to Examining the Differences among Females College Students with High and Low Levels of Imagination in Efficacy of Perceptual Motor Learning and in Visual and Auditory Working Memory .

**This study Sample** Consisted of (200) Females College Students Whose Ages Ranged From ( 18 – 24 ) years . The Experimental Procedure was Conducted on (100) Participants Who Were Divided into two groups : the High Imagination group ( n =50 : Mean Age = 20,74 years : SD = 1,21 ) and the Low in Imagination group ( n =50 : Mean Age = 19, 96 years : SD = 0,75 ) .

**The Following Tools Were Used** : the Imagination Test , the Continuous Addition Test to Measure Auditory Working Memory , the Shape Locations Test to Measure Visual Working Memory , and Electronically Designed Perceptual Motor Learning Efficacy Program .

**the Study Results Indicated :** the Existence of Numerous Correlational Relationships among the Variables of the Study . the Results of the Simple Liner Regression Analysis Showed that the Visual Processing Model was able to

Explain the Variance Occurring in Manifestations of Imagination among Participants with High Imagination Scores , While the Number of Maze Errors Model was able to Explain the Variance Occurring in Manifestations of Imagination among Participants with Low Imagination Scores . the Result also Revealed Statistically Significant Difference between the two Study Groups in some Variables , Such as the Auditory Recall Component , the total Score of Auditory Working Memory , the Visual Processing Component , the Number of Errors in the Maze task , and the time rate in the hollow pegboard task .

However , there were no Statistically Significant Difference between Participants with high and Low Imagination Scores in the auditory Processing Component , the total score of visual Working Memory , the total time for the maze , or the number of pegs dropped by Participants during the hollow pegboard task .

**Keywords :**

**Perceptual Motor Learning Efficacy , visual Working Memory , Auditory Working Memory , Imagination , Females College Students .**

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# Efficacy of Perceptual Motor Learning and Visual and Auditory Working Memory among High and Low in Imagination among Females College Students

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## Study Objectives

**The current Study aimed** to Investigate the Correlational Relationships among the Variables of the Study : the Efficacy of Perceptual Motor Learning , the two Components of Working Memory ( Visual and Auditory ) , and Imagination , Each Considered Separately . It Also Sought to determine whether Perceptual Motor Learning efficacy and Visual and Auditory Working Memory could predict with imagination **,** and to identify the differences among Females College Students with high versus low imagination in Perceptual Motor Learning efficacy and both type of Working Memory ( Visual and Auditory ) . the Study falls within the scope of Experimental cognitive neuropsychology .

## Research Problem

the Study addressed the following main question :

1. Is there a Correlational Relationship between Perceptual Motor Learning Efficacy , Working Memory ( Visual − Auditory ) , and Imagination among Females College Students ?
2. Can imagination be predict from Efficacy of Perceptual Motor Learning and Working Memory ( Visual − Auditory ) ?
3. Are there Statistically Significant Difference between female with high versus Low Imagination in Efficacy of Perceptual Motor Learning , and Visual Working Memory and Auditory Working Memory ?

## Methodology

the Study employed **a quasi – experimental design ,** as the research variables are cognitive in nature . this design was used to examine the Correlational Relationships between Perceptual Motor Learning Efficacy , the two components of Working Memory , and Imagination , to predict Imagination from Efficacy of Perceptual Motor Learning and ( Visual – Auditory ) Working Memory , and to test differences between high and low imagination groups in these cognitive abilities among Females College Students .

## Participants

the Study sample consisted of ( 200 ) Females College Students from both scientific ( e . g . , faculty of science ) and theoretical faculties ( e . g . , faculty of commerce , education , Arts ) , excluding psychology – major . Participants were recruited through direct invitation or general classroom announcements. iheir ages ranged from ( 18 – 24 ) years . An Experimental subsample of (100) students was selected and divided into goups : the High Imagination group ( n =50 : Mean Age = 20,74 years : SD = 1,21 ) and the Low in Imagination group ( n = 50 : Mean Age = 19, 96 years : SD = 0,75 ) .

## Instruments

1. Imagination test , Prepared by researcger , reviewed and modified by Prof . Dr . Mohamed Najeeb Ahmed El sabwa .

2. Continuous Addition Test for Measuring Auditory Working Memory , and Shapes Location Test for Measuring Visual Working Memory , both developed by Mahmud Alaa – El din under the supervision of by Prof . Dr . Mohamed Najeeb Ahmed El sabwa .

3. Computerized Program for Designed Perceptual Motor Learning Efficacy . Measuring Perceptual Motor Learning Efficacy , designed by researcher and eaviewed by Prof . Dr . Mohamed Najeeb Ahmed El sabwa .

4. Preliminary interview , Prepared and revised by Prof . Dr . Mohamed Najeeb Ahmed El sabwa .

## Statical Methods

- Pearson's correlation coefficient was used to determine correlation among study variables .

- Stepwise Regression Analaysis was conducted to assess the predictive power of Perceptual Motor Learning Efficacy and Working Memory on Imagination .

- T – test was employed to examine significant difference between high and low imagination groups in these cognitive abilities among Females College Students .

**Study Results :**

The first hypothesis was partially confirmed , as result showed the presence of Numerous Correlational Relationships among the Study Variables . these included negative Correlations between the Auditory Recall Component (Auditory Working Memory Efficacy) and the visual Working Memory Recall Component (Visual Working Memory Efficacy ) , as well as between the total time for the maze , and the number of holes missed by Participants in the hollow pegboard task , and between the number of Maze Errors and Imagination . there were also pasiative Correlations between Auditory processing , and each of the following : Auditory Recall Component (Auditory Working Memory Efficacy) .

Results of the Simple Liner Regression Analysis Showed that the Visual Processing Model was able to Explain the Variance Occurring in Manifestations of Imagination among Participants with High Imagination Scores , While the Number of Maze Errors Model was able to Explain the Variance Occurring in Manifestations of Imagination among Participants with Low Imagination Scores

the Result also Revealed Statistically Significant Difference between the two Study Groups in some Variables , Such as the Auditory Recall Component , the total Score of Auditory Working Memory , the Visual Processing Component , the Number of Errors in the Maze task , and the time rate in the hollow pegboard task .

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