

# THE IMPACT OF TRAINING PROGRAMME BASED ON STRATEGIES OF IMPROVING MEMORY ON THE MINDFULNESS SKILLS AMONG FIRST INTERMEDIATE STAGE STUDENTS

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## ABSTRACT

*The current research paper aims at identifying the impact of training programme based on strategies of improving memory in developing the mental alertness skills among first intermediate stage students. To achieve the objectives of the current paper, the two researchers conducted training programme which is based on the Addie model and that this programme consists of nine training units. The first unit is introductory and the other eight units represent strategies of improving memory by (34) training sessions. However, the contents of training programme sessions are included in the topics which students have taught including (science, geography, national education, Islamic education, mathematics, and Arabic). To prevent including extracurricular topics which may affect negatively on the results of the experiment given that the main purpose is to focus on strategies of improving memory more than including new topics. Moreover, the two researchers conducted establishing a scale of mental alertness skills which consist of (40) items. Each item has three options which covered the mental alertness skills which include the following: (Skill of observation, skill of description, skill of behaving consciously, skill of approval) by (10) items each skill.*

*The two researchers have adopted semi-experimental design of partial control of two groups of experimental and control groups after carrying out equivalence.*

*The two researchers have trained the two groups and after finishing the training programme the scale of the mental alertness skills has been applied and it shows that the experimental group has excelled on the control group in the mental alertness skill.*

## STATEMENT OF THE PROBLEM

Many cognitive psychologists have reached an unanimous agreement on the fact that the real challenge which they face today represented in the extent of the possibility of doubling human memory in terms of its efficiency, and capacity as well as skills of mental alertness out of observation, description and systems of processes of supplying cognitive information by means of activating the role of cognitive strategies as a must to face the heavy explosion of information and the complaints of many

students out of manifestations of Amnesia (Pilcher & Miller, 2000).

The concept of memory refers to the relative continuance of effects of experience and such a continuance is an indication of occurrence of learning which inevitable condition for continuity of the process of learning and its mastery (Kruger & Dunning, 1999).

Thus, memory and learning are interrelated since without experience accumulation together with its processing, learning cannot be existed and at the same time without learning information flow stops and

memory turned into ruminative memory and if learning refers to occurring changes and modification that intervened behavior as a result of the impact of previous learned or acquired experience and memory is a process of fixing these changes and modifications and keeping it down or using it when necessary (Atkinson & Shiffrin, 1968).

Accordingly, many studies and contemporary researches deal with memory and learning like for example (Schwartz, Andersen, Hong, Howard, & McGee, 2004; Singhal, 2001; Snow, 2002) the factors which influence remembering, retention and retrieving, are the same factors that influence achievements and acquisition and the conditions that facilitate learning are the same condition that facilitate retention, the main problem is that students have problematic issues in memory and this means that they have difficulty in remembering and retrieving information that they get by their senses in general. The problem resulted from the weakness of processes and supplying information and the main problem lies in the weakness and inability of these students on using information together with its processing (Carroll & Korukina, 1999).

It is found that learning and memory are interrelated and homogenous terms, yet each of them is used to express the other and can be measured interchangeably. Thus, they are used synonymously. Take for example, if a teacher put a test to measure his students achievements in certain topics, he measured the process of remembering and retention and he should know the cognitive levels and skills of their memory alertness and the grades that they obtain in tests are not an indication on their achievements but it is an indication of their ability on improving their memory and retention of information for a long time, together with developing of their mental alertness skills by good observation and deep description and conscious perception of what they present in their explanation of the topic (Cromley, 2000).

After considering the literature of reviews, the two researchers found that there is a limitation in studies of the local and Arabic environment which are concerned with skills of mental alertness and some of the sample individuals focused on the primary stages as well as the two researchers found that there is a

contrast in results of some reviews of literature and in addition to the Abu Alia study (2003) has come to the fact that the talented students used strategies of memory more than valedictorians and De Beni and Cornoldi study has come out to the fact that by means of strategies of promoting memory, the individuals can learn how to describe his or her internal cognitive mental processes in learning, remembrance and thinking as well as problem solving since the main core which these strategies are based on, can be represented by organizing information or educational topics in order for individuals to be able to perceive information and encoding it in memory by giving it sense or meaning (De Beni & Cornoldi, 1985). However, collecting large volume of information cannot be memorized by individuals no matter how their mental abilities are, may lead to increase in the volume of information in books and curricula just to match the cognitive explosion; therefore, it is necessary to give attention to every branch of field of knowledge by providing students with cognitive information for each branch of knowledge. Besides, educationalists begin to give much attention and interest by education and they view that the most part of the process of learning can lie with learners and that the teachers have to provide students with basic skills to access to knowledge and then processing and organizing it in such a way that they can understand it and retain it and retrieve it easily.

Besides, those students of high proficiency or competence in memory together with the mental alertness skills are distinguished by high ability to be variant in using strategies of promoting memory and good utilization of it in the light of the important requirements and the desired purpose whereas Cramer (1981) study (cited in Hassan 2006) pointed out that the more those students are able to discriminate statements when inputting into memory, the more they have the ability to retrieve them regardless of their sense and /or meaning. Hence, the problem of the following paper can be represented by answering the following inquiry: what is the impact of the suggested training programme which based on strategies of promoting memory in developing skills of mental alertness among students of the first intermediate grades?

## THE IMPORTANCE OF THE RESEARCH PAPER

The process of promoting students' ability to remember, increase comprehension and retention is one of the substantial objectives of educational process and a dire pre –request for educationalists, teachers and learners as well as students' parents because it has a great role in raising the level of education achievement and improving their performance and this can be achieved by the ability to improve memory by means of developing the students' ability to make a kind of integration and organization among submitted information and creating ties among them and finding meaning for them in order to facilitate integrating them in the cognitive construction and previous experience(Davis, 2007).

Scholars have agreed upon the fact that knowledge does not exist in the memory in consistent way as it is in the reality , since many studies and researches proved to that classification, organizing the cognitive plans to give meaning for it differs from the outside physical facts which depend on fixed rules and laws(Riding & Sadler-Smith, 1997). Accordingly, the process of cognitive supply of information is associated with stimuli that senses perceive but this information is subject to modification to cope with previous experiments which consists of complicated network of information and relations and the information can be stored in terms of brief manifestation(Nuissl, 2001).

We cannot deny the information of memory and its great role in achieving the process of learning and this leads to superiority in educational attainment.Thus, many studies show that many students do not recognize that their failure in their study research resulted from the weakness of mental abilities or in a shortage in their intelligence (Davis, 2007).But also their failure resulted from their ignorance in strategies promoting the right memory and acquiring wrong methods of memory.Humans receive hundreds and thousands of information round the clock out of educational subjects and these pieces of information may be audio , visual or sensual , stored in memory, retrieved when necessary in case of

information retrieved during examination by using strategies promoting memory for stored information to make it useable(Snowman & Biehler, 2009).

Amnesia is regarded as one of the dangerous phenomena relating to process information which face humans who are obliged to acquire and store a large volume of information from different sources. For thisreason, it is necessary to use different methods to promote memory and organize information to make easy for it to be retrieved. Bearing in mind, studies have come to the fact that human memory starts from the weakness in the midst of 20s of the age and memory activation may be useful in slowing down the process of loss of memory(Cromley, 2000; Nuissl, 2001; Saunders, Batson, & Saunders, 2000).

The importance of using strategies of promoting memory and information retention and there is a close relation between memory and learning since each learning should include memory because if humans do not remember something from our previous experience, we cannot learn everything.Anderson (1995) holds that most psychologists believe that learning causes constructional and organizational changes in the brain and these changes can be stored in the brain or they are retained for a limited time (Baddeley, 1996).

These changes speak of themselves later, and individuals can lead to different way since they depend on good remembrance by using strategies and methods for the sake of increasing the ability to retrieve or retain necessary information(Nuissl, 2001).

## AIMS OF THE RESEARCH PAPER

The current research paper aims at identifying:

- 1.Establishing programme which is based on strategies of promoting memory for intermediate school students.
2. Identifying the impact of the training programme in the skills of mental alertness among students of first intermediate grade.

To achieve the objectives of the following paper, the two researchers put forward the following zero hypotheses:

There are no statistical significant differences between average of experimental group students who will train in the suggested training programme whereas based on strategies of promoting memory in developing the skills of mental alertness and the grades average of controlling group students who are not subject to be trained in the scale of mental alertness skills.

### LIMITS OF THE RESEARCH PAPER

**The temporal limits:** the scholastic year 2017-2018

**The spatial limits:** first intermediate grade students, directorate of education /Al-Qadisiyah Governorate.

**The cognitive limits:** a training programme which is based on strategies of promoting memory.

Skills of mental alertness (Observation, description, behaving consciously, approval, without issuing judgment).

### TERMS DEFINITION

The following research paper is limited to the given terms in the title of the research paper which include the following:

#### 1. The Training Programme

Mandelbaum (2005) defines the training programme as a cluster or series of activities which should be done to come to a given aim that intends to organize relations that learners can carry out skills he or she could not do it before joining this programme (Mandelbaum et al., 2005).

Mohammed (2012) defines the training programme as all planned school activities that include lessons, school activities, sport games, theatrical arts, clubs and house programme (Mohammed, El-Rahman, & Al-Alangawy, 2012).

## 2. Strategy

Cruss, Cruss and Steinert (2008) define the strategy as a group of principles, procedures. Activities, and methods that students will perform in dealing with topics to achieve educational aims (Cruss, Cruss, & Steinert, 2008).

## 3. Strategies of Promoting Memory

- Luine and Frankfurt (2013) define it as a high cognitive perceptual process that students can access to by means of carrying out certain procedures in their study before sitting an exam or during the readiness to exam including organizing topics and subjects, retrieval, reviewing , ... etc (Luine & Frankfurt, 2013).
- (Atkinson & Shiffrin, 1968) defined it as the way in which information stored in means and this model supposed that this information has been processed and stored in these gradual series These stages include :
  - Sense memory.
  - Short - term memory.
  - Long - term memory.

These strategies include the following:

- Rehearsal or repeating information.
- Chucking or controlling information.
- Organizing information.
- Key word method.
- Organizing schemes method.
- Using prior knowledge.
- Making information meaningful.
- Local method.

The theoretical definition: the way in which this information has been stored in meaning and this model supposed that this information has been processed and stored on three stages including sensory memory, short-term memory, and long –term memory.

Operant definition: the full degree or grade that students obtain when he or she respond to

programme of strategies of promoting memory in the current study

#### 4. Skills

Corall and Korukina, 1999 defined skill as the ability to perform and learn well whenever we want “ and skillfulness is a learned activity that has been developed during practicing a certain activity supported by feedback and each skillfulness consists of sub –skillfulness and any default of sub skillfulness affects the quality of total performance(Carroll & Korukina, 1999).

#### 5. Mindfulness Skills

Dekeyser et al. (2008) defined it as a situation that includes cognitive encapsulation spontaneously, emotionally, psychologically and spiritually guided(Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008).

Baer, et al. (2004) defined it as receptivity of observation and awareness concerning current experience events and allowing it without passing a decision (Baer, Smith, & Allen, 2004).

- **The Theoretical Definition**

The ability of individuals to direct in the current moment describing or adopting an accepted situation without passing any decision.

- **The Operant Definition**

The degree or grade that the respondent obtain through his or her answers in terms of scale of skills of mental alertness.

#### 6. Intermediate – Grade Students

The researcher defined them as a group of students whose ages range from (14 to 18) and they are taught in the first, second, third intermediate grades.

## RESEARCH PAPER METHODOLOGY AND PROCEDURES

This section deals with the paper methodology starting from the experimental design, its sample, and equivalence and paper requirements, tools and procedures of applying the experiment as well as the statistical means.

### 1. Research Paper Methodology

Is the method that the researcher adopted in answering questions, that is to say, it is a plan that limits the methods or procedures collecting and analyzing data(Bowen, 2009).The current research paper has employed the methodology of experimental research of partial control which tackles the following:

#### Firstly, the Experimental Design

The experimental research is considered one of the most important procedure in solving problems by adopting practical approaches which are more valid in solving theoretical educational(Kazdin, 2011),and applied problems and developing a milieu for education and represent the selection of the experimental design as a base process for each experimental research paper to provide the researchers with mechanism suitable for accessing to the desired results and obtaining suitable answers, and paving the way to test its hypotheses(Edwards, 1950) and since the current research paper consists of one independent variable ( the training programme which is based on strategies of promoting memory) and one subsidiary variable which is ( skills of mental alertness) and thus the experimental design of partial control has been used ( experiments and control groups) of the two tests of pre-test and post -test of skills of mental alertness as shown in figure (1):

Group	Pre-test Application	Equivalence	Independent Variables	The Subsidiary Variables
Experimental	Scale of skills of Mental Alertness	Age by month	Suggested Training Programme	Skills of Mental Alertness
Control		Previous attainment	Do not be subject to any training programme	
		Parents' Attainment		

Figure (1) The experimental design (The two researchers' design )

**Research Population**

The research population consists of all intermediate grade students in Al-Qadisiyah Governorate, morning study for the scholastic year (2017-2018) since the number of students has amounted to (45276) distributed into (91) intermediate and secondary schools. The researcher has got the statistics according to letter of task facilitation.

**Research Sample**

Given that the studied population in this paper widespread since it constitute a difficulty in grasping Table (1) Research Sample

all its items as well as it costs a lot of money and ample effort which led the researcher in selecting (Krejcie & Morgan, 1970) the sample and Abu Al-Fadal Al-Abbas.

Intermediate school / a first grade has been selected and the sample has been selected randomly.

Section (a) has been selected to represent the experimental group and section (b) represents the cultural group and the failing students have been excluded as shown in table (1):

Group	Section	Number	Number of Excluded Students	Final Number
Experimental	A	40	4	36
Control	B	42	3	39

**Equivalence of the Two Groups of Research Paper**

One of the most important conditions that should be addressed for the purpose of achieving the aims of the current research paper before conducting the experiment is checking the equivalence of the two groups of the research paper (experimental and control groups) because it leads to show the impact of the independent variable upon the subsidiary variable by means of fixing many variables which can affect in contamination results (Campbell & Stanley, 2015).

The two researchers conducted the statistical equivalence of the two groups in some variables that

can affect the results of the experiment by using T-Test for two independent samples and comparing calculated T-values with tabulated T-values at the level of significance of about (0.05) and degree of freedom (df.) of about (73) amounting to (2.00). Chief of the variables in which equivalence has been made are: age by months, intelligence by using Raven test, previous educational attainment. It is found that all calculated T-values are lesser than Tabulated T-values. For this reason, the two groups have been equivalent. Table (2) shows results of t-test of two independent samples of the two groups of research paper in variables: age by months, intelligence and previous educational attainment.

Table (2) t-test of two independent samples of the two groups in (age, intelligence and previous education attainment)

Variable	Group	No. of Students	Arithmetic Mean	Standard Deviation	t-value		Statistical Significance
					Calculated	Tabulated	
Age by months	Experimental	36	154.72	8.79	1.17	2	Nun significant
	Control	39	157.51	11.61			
Intelligence	Experimental	36	25.4	3.93	0.15	2	Nun significant
	Control	39	25.23	4.92			
Previous Educational Attainment	Experimental	36	36.2	14.56	0.055	2	Nun significant
	Control	39	63.39	14.15			

### Adjusting Conditions of the Experiment and Prevention of Accompanying Accidents:

Means all events, incidents or circumstances that could happen and affect the two groups of research paper during conducting the experiment (Campbell & Stanley, 2015).

### Establishing Training Programme

Programme definition: is a group of lectures that aim to develop the students' ability for promoting their educational levels in all educational curricula by using strategies of promoting memory and difficult activities so that they can associate them in their practical and realistic life and they happen to retrieve them when necessary. Establishing training programme constitutes a basic step in the process of training including a group of complicated elements which try to achieve aims and objectives so the researcher seeks to establish training programme.

According to cognitive theory in perceiving and processing and providing information which is based on the following steps:

### REVIEWING LITERATURE PERTAINING TO ESTABLISH TRAINING PROGRAMMES.

Selecting the design or training programme. The design is a process of systematic planning carrying out the experiment solving problems (Nadler & Nadler, 2012), the two researcher have been aware on several designs for the training programme. Yet, he did not find any suitable programme that can be in harmony with the desired objectives, therefore they establish their training programme depending on the ADDIE model which is one of the used traditional educational model and they named it out of the traditional design which include (Analysis, design, development, implementing, evolution) (Kruse, 2002; Mohammed et al., 2012; Molenda, 2003); figure (2)

Figure (1) shows the design of model ADDIE of five stages:

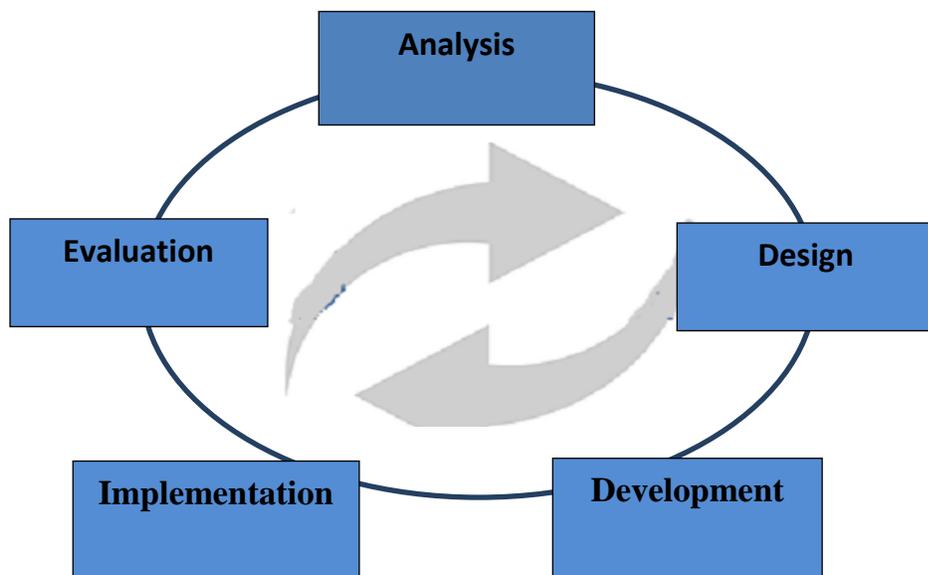


Figure (2) This model consists of the following phases:

**Phase(1) Analysis phase:**

This phase aims to limit problems by showing the necessary needs and transfer them into useful information to develop the process of learning and training and analyzing these needs can be carried out through estimating needs. Some inquiries are subsumed under the analysis phase , these enquiries include the following :

-Is there any problem?

To put it another way, does learning and training follow correct answer to solve the problem or satisfy needs?

-Who are beneficiary parties? What are their features? what are their academic backgrounds,ages, culture, levels,needs, problems, experience, ...etc.

-What are the general goals and private instructional objectives that must be achieved?

-Which type of difficulties of remembrance could you find in your students?

-What are the resources and possibilities available to achieve these goals?

-What are the methods through which we can apply new skills?

(Branch, 2009)

For the purpose of answering these inquiries we will touch on the elements of the analysis phase:

**1. Defining the General Educational Goals:**

The educational goals are considered the basis of educational process since in the light of these goals , educational progeammes can be prepared and strategies and educational activitieshave been selected to meet the contents of the subject , so any training programme should aim at achieving a number of educational goals , for this reason , the two researchers define and limit the general goals of the training programme

(previously prepared in the onset of the training programme) and performance goals for each training unit (previously prepared in the onset of the each training unit).

## 2. Selection of Contents

The two researchers have selected the contents of the training programmes from all scientific and humanities topics and subjects that the first intermediate students are taught. These educational subjects or curricula including the following (science with its first part – chemistry – physics-national education- history – mathematics –Arabic).

This programme consists of (nine training units) the first unit consists of introductory opening lecture for students to let them know of the nature of the programme and strategies promoting memory, and eight units cover strategies of promoting memory which match with the cognitive theory by one unit per strategy. The one unit consists of four training sessions each week.

## 3. Analysis of Trainees Characteristics

The common general characteristics, the logical step which allowed organizing the educational contents is defining skills which trainees should process before initiating the process of training. There should be a high degree of harmony and consistency between the material (subjects) and learners in order for the teachers to be very active, the trainer or teachers analyzed the needs of training individuals by measuring the performance of students' ability and defining skills knowledge and orientation which are needed to perform his or her future functions (Jones, 2014). Thus, the trainers needs have been achieved through directing open question to a sample of students about the training needs of programme strategies of promoting memory.

It is found that students have not had any knowledge of strategies of promoting memory and there is a general need for training.

- **The qualitative characteristic** (defining input behavior). It is necessary to define the qualitative characteristic which

targeted individuals have possess, thus the two researchers seek as an input conduct before carrying out training programme which is scale of skills of mental alertness appendix (2) and the researchers have followed steps of establishing psychological scales.

## 4. Organizational Needs (Analysis of Educational Environment)

These needs affect decision –making such as: which students will obtain training? what are the works that will be subject to development? How many required workers should enroll to achieve the developed works? What are the memory sources?..etc.

The organizational needs have been achieved in cooperation with the general directorate of AL-Qadisiyah education – the answers of these inquiries are as follows:

They are first intermediate students: AL-Qadisiyah schools –they are selected randomly from Abu Al-Fadh al-Abbas intermediate school. Three sections have been chosen (A), (B), and (C) – section (A) has been chosen to represent the experimental group. The number of students has been amounted to (30) students. Section (B) has been chosen to represent control group –students are about (39). Section (C) has been left without processing because they are females and it has been excluded.

The main works that will be subject to be developed are strategies of promoting memory among intermediate students which consist of strategies of promoting memory

The number of elapsed training sessions are (34) sessions by four sessions for each training unit plus introductory session.

Venue of training: Abu Al-Fadh al-Abbas intermediate school subsidiary to the general directorate of AL- Qadisiyah education.

**Phase (2):Design phase**

This phase is the second step after analyzing the training needs, in the light of the results of defining training needs, the procedures of designing programme have been carried down and the training needs and goals have been met precisely to address the needs(Wang & Hsu, 2008).Thus, the design defines putting formal plans and drafts and preparing the educated subjects, selecting educational instruments and means, and defining suitable method by defining the basic components(Mohammed et al., 2012).

The researches have achieved the main aims of subjects in the training programme.The subjects include the following: (National education, Geography, History, Physics, Biology,Chemistry, Islamic education and Arabic) and the researchers rewarded in the formula of scientific activities that are constant with strategies of promoting memory with the average of four activities in each class.Subjects have been selected such as: map, picture, cubes, etc.

The training programme has been applied onAbu Al-FadhAl Abbas intermediate school, the research has lasted two days.The subject of artistic and sportive education has been selected. The researcher has met with students to let them know the importance of these subjects and the success of work is based on the extent of their cooperation. The researcher has used the scale of mental skills and a scale of levels of cognitive provision as pre-test application. Wednesday and Thursday have been limited to take two successive classes to carry out each lesson of training programme. This progemmme starts on (22 /9/2017), each lesson lasts 45 minutes – the progmmme ends on (14/1/2018).The post test was applied on (18/1/2018).

**Secondly, instrument of the Study (A scale of Mindfulness Skills)**

There are a number of basic steps which should go step by step with the process of establishing and preparing psychological and educational scales. They are as follows:

- Designing of scale (defining the concept and fields according to a given theory).
- Wording questions or items for each field of the scale.
- Putting forward a scale with its primary formula (items) on a group of referees of specialization to judge the validity of items in measuring the face validity of the scale.
- Application the primary phase of questionnaire on a sample of origin population to identify the extent of clarity of instructions, items and the given period of time to answer it.
- Application of the scale on research sample.
- Conducting the statistical analysis of items.

(Creswell, 1996)

The procedure the researchers have followed in preparing a scale of skills of mental alertness are as follows :

**A: Defining the theoretical element to establish a scale of Mindfulness Skills:**

The elements of the theory have been defined by relying on the theory of the skills of mental alertness of (Ruth Bayer et al 2003) University of Kentucky which consists of four fields or skill including observation, description, behaving consciously, approval and permission.

**B: Wording Items of Scale:**

Wording items of scale have been formulated by translating the scale of theorist Ruth Bayer 2003)University of Kentucky and these items have been reviewed by experts and referees and they are formulated and modified in their final draft and the validity of legal translation have been obtained.

### C. Answer Options and Scale Correction

The options of answers on items of scale of skills of mental alertness have been matched and referred to the high mental alertness or they have been matched with middle mental alertness or they have been matched with lower mental alertness.

The researcher have given options to correct the scale ranging from (1-3) and distributed on answer options.

### D. Validity of Items

The scale of skills of mental alertness has been reviewed by a group of experts and

referees in psychology and education as well as carrying out the analysis means of testing individual responses of each item and the aim of this analysis is to retain the good items of the scale. The two researchers have calculated the face validity by two ways. The first way is Chi – square and the second is Kolmogorov-Smirnov by applying these ways to judge the validity of items. Thus, the calculated value has been compared to tabulated value at the level of (0.05) and with freedom degree of (1) amounting (3.84) and they calculated value of KS with the tabulated value (0.309) in df. (18) (Mohammed, 2017); which is (43) and thus the researchers have modified some of the items and the scale is available and consisting of 40 items. Table (3) illustrates that fact :

Table (3) Value of Chi-square (KS) of the viewpoints of experts in the validity of items of scale of skills of mental alertness

Fields (skills)	Items	No.of Acceptance	No.of Refuters	Calculation Chi-Square	Value of Calculator (KS)	Design
Skill of observation	1,3,4,5,6,7,9,10	18	0	18	0.5	Approved as it is
	8	17	1	14.22	0.44	Approved after modification
Skill of description	1,2,3,4,5,7,8,9,10	18	0	18	0.5	Approved as it is
	6	17	1	14.22	0.44	Approved after modification
Skill of behaving consciously	1,2,3,4,6,7,8,9,10	18	0	18	0.44	Approved as it is
	5	17	1	14.22	0.5	Approved after modification
Skill of approval	1,2,4,5,6,7,8,9,10	18	0	18	0.5	Approved as it is
	3	17	1	14.22	0.44	Approved after modification

### E. Pilot Study

For the purpose of identifying the extent of clarity of scale items and items exploration and ambiguous words as well as identifying the clarity of answer options and identifying the time

of answering on scale, the researchers have applied scale of skills of mental alertness appendix (5) on (35) students of intermediate school students, Hamuraby intermediate school and the average of answers has amounted to (23-19)minutes.

## F. The Statistical Analysis of Items

The statistical analysis of items have been carried out to identify the extent of difficulty or easiness each item and the extent of activity or ability to distinguish the individual differences for the feature intended to measure where it is an achievement (Mohammed, 2017), or mental ability or personal trait and carrying out the analysis means testing individual responses of each item and the aim of this analysis is to retain the good items of the scale (Rokeach, 1968).

## G. The Sample of Statistical Analysis

The sample of establishing scale has been selected from skills of mental alertness according to the theory of (Ruth Bayer et al. 2003) University of Kentucky.

Nunnally points out that the volume of the sample of item discrimination is associated with a number of scale items which must be from (5-10) times of the items to get rid of the coincidence of the statistical analysis (Nunnally & Bottomley, 1981).

Given that the number of scale items was 40 items, and the number of volume of the sample of establishing items was 315 students who have been selected randomly from 10 schools from Al-Qadisiyah Governorate school by 30 students from each school and the statistical analysis has carried out on 300 students.

After applying the scale of skill of mental alertness on a sample of the statistical analysis starting from 22/9/2017 up to 23/9/2017 and the correcting the students responses and thus the two researchers have adopted the following procedures.

### 1. Item Discrimination

One of the most important characteristics for scale is the ability of items to discriminate among

examine since the scale is able to expose the individual differences among testes on the measured feature (Anastasi, 1976) so the good item is that item which discriminated the differences among respondents of high ability and those of low ability. As a result, it is necessary to recourse to the two extreme groups????.

## 2. Method of Internal Consistency

Skills represent a group of behaviors which occur as a result of their interrelatedness and these behaviors should be shown on the form of items and each item should be consistent with other items in achieving the general goal and measuring the wanted feature and if it is not consistent with achieving this purpose. This means that it should be omitted or replaced (Al-Zamely 2009:249).

There are several methods of verifying the internal consistency. They are as follows:

### a. Method of correlation of item degree of the full degree of the scale.

This method is one of the used methods to calculate the internal consistency because this method means that each item has met the inquiry: Do items move exactly in the direction of the scale or not? The researcher has used Pearson correlation coefficient to achieve this purpose and he calculated each item by using Pearson correlation coefficient with the full degree of the scale to measure the mental alertness and then comparing the calculated value of Pearson correlation coefficient with the tabulated value at the level of (0.05) and freedom degree of (298) amounting to (0.113) and accordingly all items are statistically significant (Edwards, 1950).

### Reliability

Brown (1983) points out that there is a correlation between item validity and reliability since the valid scale is reliable while on the

contrary the reliable scale may not be valid, however, reliability is regarded as one of the most important psychometric features of the scale .Moreover, it turned out that it was not possible to obtain full validity in psychometric scales and reliability is another indication on the accuracy of the scale in measuring things (Brown 1983: 27). Accordingly, reliability is considered one of the indicators of verifying the accuracy of the scale

and consistency of its items in measuring the feature intended to be measured(Beran & Rokosh, 2009). Therefore, reliability has been calculated by using Cronbachs' Alpha of internal consistency. The researchers have probated all the forms of the sample of the statistical analysis amounting to 300 forms and after usingCronbachs' Alpha formula the coefficient of reliability for each skill has been clarified.

Table (4) shows the value of reliability coefficient by using Cronbachs' Alpha of the scale of mental alertness.

Serial No.	Skillfulness	Number of Items	Coefficient of reliability
1	Observation	10	0.78
2	Description	10	0.77
3	Behaving consciously	10	0.79
4	Approval	10	0.685
5	Scale as a whole	40	0.92

The statistical indices of the scale of skills of mental alertness and sub-skills .Table (5) shows the statistical indices of the scale of the mental alertness.

The statistical indices	Value of indices
The arithmetic mean	82.46
Standard deviation	15.36
Number of scale items	15.36
Hypothetical high degree that the respondent can obtain	40
Hypothetical low degree that the respondent can obtain	120
The hypothetical mean	40
Smaller degree has been obtained virtually	80
Higher degree has been obtained virtually	43
Latitude	119
Skewness	0.35
kurtosis	0.39

## RESULTS AND DISCUSSION

This section is concerned with viewing results and findings that the researchers have come to and discussing them as well as showing the conclusion, recommendation and suggestions for further reading as follows:

The first aim: is establishing a training programme based on strategies of promoting memory for intermediate school students. This aim has been achieved in section 3 where the researchers have established training programmewith its finalformula consisting of 34 training sessions according to the stated steps in section 3.

The Second aim: Identifying the impact of training programme in developing skills of the mental alertness among intermediate students. To verify the validity of the hypothesis arising from

the above mentioned aim, the two researchers have calculated the arithmetic mean, standard deviation and t-value for the experimental and control groups as shown in table (6).

Table (6) shows the arithmetic mean, standard deviation and the t-value for the two groups of the research paper in scale of skills of mental alertness.

Group	Number	Arithmetic mean	Standard deviation	Calculated t-Value	Tabulated t-value	Significance
Experimental	36	92.22	14.37	2.88	2	significant
Control	39	82.9	13.8			

Table (6) shows that the arithmetic mean of the degrees of experimental groups students equals (92.22) whereas the arithmetic mean of the degrees of control group students equals 82.9 and the calculated T-value has amounted to (2.88 ) and it is greater than tabulated t-value which has amounted to (2) at freedom degree of (75) and at the level of significance of about (0.05) this means that there is statistical significant difference in favour of the experimental group which has been trained by using the suggested training programme which is based on strategies of promoting memory in a scale of skills of mental alertness. As a result, the zero hypothesis has been rejected. Thus, the sources of the differences of experimental and control group students in skills of the mental alertness were significant in favour of the experimental group. These skills include the ability of students concerning attention, surveying of different stimuli which include internal incentives (perception, physical feeling and impulses and external stimuli (teacher's voice, colours and educational means) as well as skills of description. The study pointed out that intermediate school students enjoyed a high level of observation and the ability to discriminate information.

## CONCLUSION

In the light of the above results, the two researchers have come to the following findings:

- The success of the training programme which is based on strategies of promoting memory in raising skills of the mental alertness of the intermediate school students.
- It is possible to improve the performance of memory by using the training programme which led to the fact that students are able to develop and promote their remembrance, confidence and retrieval.
- The impact of the training programme that has been used by the two researchers goes with the basic hypothesis of promoting the performance of memory.
- Supremacy and superiority of experimental group students in some tests of skills of the mental alertness after they have been subject to the training programme which has been prepared for the purpose of promoting memory among intermediate school students.

## RECOMMENDATIONS

- Adopting a suggested training programme in intermediate school students when they developed their vocational capabilities.
- It is advisable for teachers to make sure that they direct student's attention by

drawing their interest and they should use elements of motivation.

- Providing educational consultants with tools and tests for measuring the mental alertness to expose its level among students.
- Urging and encouraging teachers to activate students through using strategies of promoting memory in teaching students.
- It is recommended to include curricula for preparing teachers and providing them with suitable training programmes that enable them to use strategies of promoting memory.
- Introducing this programme within visual and read satellite channel to

broadcast for all segments of the society.

### SUGGESTIONS FOR FURTHER READING

- Conducting identical study for other school stages and other field of specialization.
- Conducting a study to identify the impact of the training programme and other school stages.
- Establishing training programme according to the skills of the mental alertness of some relevant variables.
- Conducting successive study to survey the extent of change and development in the level of the performance of memory among different age groups.

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