The effect of visual cues accompanying written texts in Drill-and-Practice programs on educational achievement for elementary students with intellectual disability

Akram Fathy Mostafa [1], Abdullah Nasser Ibrahim Al-essa [2]

[1.] Instructional Technology Department, King Abdulaziz University (Jeddah), South valley University (Qena)
[2.] Institute of Educational Graduate Studies, King Abdulaziz University, Saudi Arabia
aali3@kau.edu.sa

Abstract: The research aims to recognize on the effect of pattern of visual cues accompaniment to written texts in drill and practicing on academic achievement for students who have intellectual disability the sample of search consists of twelve students from Imam Muslim school in province of thadek By dividing students into experimental groups. Every group has six students. According to the experimental design for search. Also It was designed educational programming followed by model "Abd latif El – Gazar". After confirming from homogeneity of both experimental groups, the programming is applied on two groups by different of pattern of hint. then the tool of search has applied in achievement test. The result of search leads to have differences which have statistical evidences for (0.05) between average of order of grads both of experimental groups. (the group which was students is in color for a pattern of hint and the group that was studied is in shadow as a pattern of hint) for the first group.
[Mostafa A, Al-essa A. **The effect of visual cues accompanying written texts in Drill-and-Practice programs on educational achievement for elementary students with intellectual disability.** *Life Sci J* 2016;13(4):75-87]. ISSN: 1097-8135 (Print) / ISSN: 2372-613X (Online). http://www.lifesciencesite.com. 8. doi:10.7537/marslsj13041608.

Keywords : visual cues - Drill-and-Practice programs - intellectual disability

1. Introduction

The Drill-and-Practice method is a teaching method that emphasizes on linking the scientific aspect to the practical scientific aspect, thereby raising the achievement level to attain learning proficiency, as the student transmits from one skill to another only through achieving proficiency in the previous skill; this is provided by the computer to the learner tirelessly; in contrast to what the learner faces in Drill-and-Practice method using paper and pencil. The pattern of computerized Drill-and-Practice method is based on providing exercises that address the learner's needs. Moreover, the Drill-and-Practice method achieves the principle of individualized learning which addresses the student individually, turning the individual differences among students to time differences. The student learns and uses the educational software according to his own pace and abilities without being restricted by his colleagues, and overcoming the problem of shyness and mockery of his colleagues that may face the student during paper and pencil training. This sort of teaching methods is appropriate for all subjects (Salama, Abu Raya, 2002) (AlFar, 2002, p 109).

The direct feedback in the computerized Drill-and-Practice method is a distinct feature of this method. The teacher may miss out enhancing the instant and continuous learning of students. In several ways, the computer offers multiple forms of enhancement, including: Audible sounds, images and videos, which motivates the student towards the self-learning process. Also, the punishment offers the question for the student in an easier and easier manner if the student kept giving wrong answer until the student gives the correct answer through trial and error (ALFar, 2002, p. 108).

One of the main advantages of the Drill-and-Practice method, that the required time to learn and the used time to learn in the computerized Drill-and-Practice method could be less than the traditional way, because the learning process occurs individually and thus the student is engaged with the attractive training, also being a new approach in education as the computer is full of potentials that can be exploited in producing the computerized lesson such as colors. For example, the computer offers several grades for each color, static and animated images, simple films that attracts the learner to learn, sounds that are used to clarify issues and concepts, sound effects, as well as using text; as the computer offers the possibility of dealing with the text in terms of color, size and font type (Ababnah and Obeiny, 2005) (Al-Ghazzawi, 2000) (Almannaie, 1995, p. 452) (Mansour, 1999).

Educators recommended the necessity of educating learning disabilities particularly the students with intellectual disabilities, as the Egyptian Society for Education Technology held a conference that emphasized the need to drive attention to this category under the title of "Education Technology for Special Needs", which emphasized the necessity of directing the concerns of research and studies towards investigation through adopting educational technology

in the field of special needs and to benefit of computer and multiple means programs to serve this category (Swaidan, AlGazzar 2007, pp. 23-24).

Many studies were conducted on students with intellectual disabilities in the field of computers and computer software in general, and concluded that adopting computer in teaching and training students with intellectual disabilities had a positive impact on the development of many variables, including; saving time and effort, reducing the level of emotional confusion, and comprehending abstract concepts (Diab.2001, p. 37), as well as improving the learning of some skills (Kashef, 2002, p 140), developing reading skills (Mechling, Gast, Barthold. 2003) (Al Rseis, 2003, p 388), and it had an impact on the educational achievement and performance (Safar, 2005) as well as on the achievement and rate of scientific performance (Ali, 2006, p. 74).

Given the effectiveness of using computers on instructing and training students with intellectual disabilities, some studies such as Rabee study (2005, p. 70) recommended the necessity to consider adopting computers in the education of students with intellectual disabilities due to its numerous positive features and to overcome the problems that hinder their academic achievement, and the study of (Abdul Majeed, Mohamed, 2008, p. 164) which recommended to conduct studies about the impact of instructional design of computer software on the development of learning and thinking skills in students with intellectual disabilities, and the study of (Haleeba, 2008, P916) proposed future studies concerning the use of educational computer software in development of functional vocabulary, listening, speaking and reading in the students with intellectual disabilities.

Some studies considered the obstacles of using computer software in the education and training of students with intellectual disabilities such as the study of (Joseph, 2001) and (Hawsawi, 2009, p. 486) which indicated to the most significant obstacles, including: The lack of educational software that matches the level of students with intellectual disabilities and that students rapidly forget what they have learned by the devices. The study recommended to overcome this problem by using some educational strategies for this category such as constant repetition method to perform the task.

With the evolution of studies and research, the role of cues have emerged, cues are stimuli to attract and raise learners' attention and to guide them towards the desired learning target using colors, fonts, motions, arrows or other visual objects and can be directed using sounds such as music, repetition and alarm (Al Shahat, 2005, p. 144).

According to (Cues theory) of (Hartman) that learning increases with more available (Cues) or stimuli and it is called (Cue Summation theory)" (Al Shahat, 2005, p. 147).

As the use of visual material in education to attract the attention of the learner, but that such use does not guarantee us the occurrence effectiveness in learning, and when he reacts learner with complex optics, it is influenced by many impetus most of which may be complicated and not easy to understand in the case, That has tended to favor some of the variables and the neglect of others for the momentary preferences and needs. Therefore suggested Dwyer one solution to increase the effectiveness of visual which limit or reduction of the amount of information presented visually, and for effective education, at any educational position, it must be art exciting learning available, and can be clearly recognized, also based education cues (Cuesd instructio) be more effective for education, which gives the learner the opportunity to see a full visual display accurately with a large probability of occurrence in the interaction with the stimuli is related to what you should learn, while he is looking for basic educational features (Shahat 0.2005, pp. 151-152).

The current research is an attempt to identify the impact of the visual cues associated with texts written in the training programs of the pattern and practice on academic achievement among students with intellectual disabilities.

Research Problem:

The low reading level is one of the most important problems of the people with intellectual disabilities. So that not being able to read properly negatively affect the educational process as a whole and lead to the student in other subjects failure (Shu'aybi 0.2000, p. 250) (Salam, 1999) (Owaidat, yosry, 1991, p. 29) (Al-Qahtani, 2009, p. 5).

Through scores of pupils records noted that there pupils have a clear lag in the discriminatory character, distinguish the form of the letter, read simple word; and from the fact that scores of students records.

And also it noted that a teacher doesn't use computers in teaching reading to these students. Although many studies have shown that its use in the teaching of students with intellectual disabilities have a significant positive impact on improving the academic and psycho-social in their job (Jessen, Parker, 2005) (spring, 2005, p. 70) (Davis, Stoke, Michelle, Himr, 2004) (Hawsawi, 2002, p 487).

And after having considered the Arab and foreign studies emphasize the importance of computer and software and the interaction of students with disabilities intellectual with it, under modern education orientation, which tends to attract the attention of people with intellectual disabilities and

Though and the conversion ration of study to the fun through the use of computers, it has become necessary to use a computer which helps both teachers and students to be more effective and positive in the teaching-learning process. Based on the stated research problem stems from the existence of an urgent need to use training programs and practice means an educational tool to assist in teaching people with intellectual disabilities, and here show the urgent need to based on visual cues program.

This research is supported by some studies that have addressed the issue of visual cues and their role in the educational process is as follows:

Visual cues play an important role in learning educational technology concepts (Hassan Farouk, 2000), and in the teaching of Kinetic skills in educational classes (Valentini, N.2004), and also in academic achievement classes erasing illiteracy (Noha Abdel-Hakam, 2005), and in the educational process (Bollger, D, 2009), as well as in learning the English language vocabulary (2008, Kim & Gilman).

Research Requests:

This research tries to answer the following basic request: What impact of visual cues pattern associated with texts written in the training programs and practice on academic achievement among students with intellectual disabilities?

Research goals:

Select the appropriate visual cues style that can be used with training and practice programs.

Research importance:

1- Useful to the designers of training programs and practice in the selection of visual cues accompanying texts written during the design pattern.

2- Take advantage of research results in the production of training and practice to prepare the development of reading and visual discrimination of letters and words to the students with intellectual disability.

3- The search in response to the recommendations of the previous studies that recommended employing visual cues. (Ali, 2013, p. 212) (Abdul aziz, 2011)

Research hypotheses:

There are statistically significant differences at the level of significance (0.05) among the middle-grades students ranks in achievement test between the experimental group taught using color style hint in training and practice programs and scores of the experimental group that is considering using shading style hint in training and practice programs.

Search limits:

(1) Time limit: the second semester of the year 1435- 1436 e.

(2) Human limit: students with intellectual disabilities in primary education.

(3) Spatial limit: School Imam Muslim /province Thadeq.

(4) objective limit: The distinction in teaching alphabet and different forms depending on their position on the floor in addition to teaching distinguish forms of some words.

The research sample:

The research sample consisted of 12 pupils with intellectual disabilities in Imam Muslim School of the Department of Education in Riyadh province Thadeq.

Research variables:

(1) The independent variable: current research on the independent variable includes a visual cues and will be limited to research on two types of visual cues patterns:

☒ The first type: coloring crafts.

☒ The second mode: shading character.

(2) The dependent variable: includes research on the dependent variable which is academic achievement.

Research Methodology:

Due to the nature of the research will be used method of quasi-experimental study the impact of the independent variable on the dependent variable.

Research tools:

Achievement Test (Prepared by the Researchers).

Experimental design to search:

In light of the independent variable, the experimental design of this research would be as follows and Table (1) explains the experimental design:

Table 1. Experimental design

	The first group	the second group
Visual allusion styles	Color	Shading
the number	6	6
The dependent variable	Academic achievement	

Research Terms:

1- **Visual cues**: (Visual Cue):" It is excellence skills signals and focus attention on the meaning to be learned, and may be cues shading and so highlight the character or word you want to attract attention to it, may be a hint painted, or hint framework, all of which are used in order to direct the attention of a student with a disability intellectually and give full opportunity to see the visual display and the acquisition of skills to be learned and increase perceived to certain parts of the content.

2- **Training and Practice(Drill and Practice)**: a pattern of interactive computer learning styles, that the role of the computer in which only the submission of questions and exercises to practice to learn, after the completion of the process of learning, where the learner receives training on topics has previously studied; the aim of the exercise of learning, promote

and strengthen it, by giving him questions and exercises graded difficulty, and it enhances computer right answers, and help him get it, by providing ideas and tips that orientation towards the correct answer, and is the most common strategies; for ease of set up and use (Khamis, 2003, p. 206).

3- **Intellectual disability**: Disability characterized by failure in their mental abilities as well as deficiencies in social skills and is diagnosed with this disability by conducting tests by the psychologist.

Theoretical framework:

Training and exercise programs:

This pattern is designed to ability and skill of the user to perform an action through exercises and drills repeated, to achieve the third element of the educational elements, and highlights the effectiveness of this type in subjects that require mastery of them a great deal of exercise and repetition such as: solving mathematical operations and basic of addition and subtraction and multiply and divide, or learn writing words and their meanings, or to save the names, dates, and take here the computer's capacity as a machine tireless never tire can give exercises and drills continuously until the trainee up to the required level (al-Hazmi, 1995, p. 134).

Training and practice pattern components:

Khamis noteworthy (2003, p. 207) training and practice style components as follows:

Introduction: includes the goal of the program, he described the content that they trained on it and sections such as: training for addition, subtraction, multiplication and division, where the menu offers to the learner the opportunity to choose the section you want to start on it appears, if he chooses a section, show him the instructions and directives of the screen shows the number of questions and kind and instructions answer.

Questions: When should you formulate questions, consider the following: (Duration of the program and several questions- the level of difficulty of the questions - speed and acceleration- cues - views the questions - choice questions procedures).

Judgment on answer: where the computer analysis of the answer and judged in the light of the correct answer stored on it.

Feedback: one of the factors influencing the effectiveness of training and practice programs, and must be feedback after answer directly.

Terminate the program: The learner may exit

Featuring training through a computer that helps direct contact between the teacher and the learner, and there are many features characteristic of this style of teaching methods are as follows (Afaneh et al., 2005, p. 36):

1- Excitement and gravity through the colors and sounds.

2- Attention in ways that feedback for the student's answers which is correct and the wrong.

3- Provide education to master the action the student cannot be transmitted from one point to the other only after making sure that he has mastered the first step fully neater.

4- Provide sophisticated methods for the analysis of student errors.

5- Increase student interaction with educational material.

6- Provide educational opportunities for students to practice good educational ideas.

7- Highly efficient in teaching students low attainment.

Standards of Training and practice programs:

The following criteria are considered basic criteria must be available in the software and cannot be described as good educational software unless these standards where available.

The most important criteria that should be available in the software as follows (elmmanaei, 1995, pp. 454-456):

1- The Target:

The goal of educational software should be formulated a clear and well-written and can be measured and that is available at the beginning of the presentation code.

2- Suitable software content level of the learner:

It should be software content fit the learner's level in terms of age, cultural background, for the lower age group (children) must fees and forms are available, and others to illustrate examples,so that fade in the end and be pruned examples of these fees, shapes and images.

3- Learn tribal skills:

It must be emphasized tribal learn basic skills before moving on learner or exposed to new skills and concepts.

4- Interaction:

The contents of the display software (scientific material, examples, exercises, questions, assist) and positive learner with this content understanding and responding to them and evaluating these responses by the software and give instant feedback, which is there is a reaction from two sides between software and the learner to have an active role in the process learning.

5- Control code for the learner:

You should leave some freedom to the learner to control the contents of the (scientific material, examples, exercises) code.

6- Attract the attention of the learner:

It improves that starts with good educational software including attracts the attention of the learner, using cartoons and animated lines sound and graphics.

7- Examples, diversity and efficiency:

It should be available in educational software a sufficient number of diverse examples and are characterized by complexity and staging from easy to difficult.

8- Away from the dull monotony:

Such as those available in the software and computational software training on specific skills such as typing on a computer keyboard should give or provide the learner is not conducive to the dull monotony (random order).

9- Adequacy of training and diversity:

Must be available to the learner is sufficient and diverse scientific material training.

10- Feedback:

One of the basic conditions that must be available in good feedback educational software (apostate) and rapidly after the learner's response, should feedback is available for the right and wrong on both to answer but differed according to the type of answer.

11- Feedback diversity:It should take into account the diversity of feedback both for phrases or pictures or cartoons.

12- Appropriate assistance: Of good educational software features to provide assistance to the learner according to his response, it notes that the availability of a large amount of aid makes Talaa learner, so it should help reduce gradually.

13- Diagnosis and appropriate treatment: In the case of a repeat of the error learner himself (or herself errors) and then provide assistance to him before the code, you must diagnose software weaknesses at the learner and provide proper treatment to him to figure out the right thing.

Employ the hints (Cues) in training programs and practice.

Concept of cues:

Cues stimuli to attract attention and raise learners and directing them toward the desired thing to learn to be able to be determined quickly. There are a lot of cues methods, including audio, which regards the sounds and music, such as visual or optical, which regards motion graphics and colors. Suad Shaheen has indicated in its study to the most prevalent methods of cues (Shahat, 2005, p. 144).

Cues importance in the educational process:

Hartman cues theory suggests that "increasingly learning the more cues (Cues) or available stimuli," said Dwyer that color when added to educational materials according to a specific plan, it increases raise the motivation of the learner, and increases the educational stimuli, and then increase learning (Aldosouky, 1989), and several studies have shown that the color tip is used to facilitate discrimination in addition to the impact of indirect played by the association as that would lead its association with ideas to a certain type of effect on memory and therefore easier to recall and the calling process (Abdel-Hakim 0.2005, S72-73).

Basic strategies for cues:

Cues strategies are divided into two types, namely (Othman, 2005, p. 145):

The first strategy:

The in providing students with additional effects related to the theme of learning, to improve their understanding and make it more complete information for what they receive. The Dwyer study is an example of this kind of cues where class own human heart optics from simplicity to complexity (line drawings, detailed graphics, shaded graphics, images of the heart model, realistic images of the heart), in order to increase the amount of stimuli.

The second strategy:

The student does not provide additional information, but is used to focus on educational stimuli what to be learned, and that must be understood by the student. The use of this strategy cues reduce the students' errors when they are primarily of new information, and also reduce the time required to acquire this information. This is a preliminary cues external stimuli and function to attract the attention and guidance to be able to identify the object to be learned quickly.

Standards of visual cues style:

The most important criteria that should be available in the code that uses visual pattern cues as follows (Ali, 2013, p. 58):

1- Clarity and focus: To lead cues visual function effectively must be focused on the most important educational content supply them with the words; pupils with intellectual disabilities need to direct their attention to the more important information than the other.

2- Good use: Visual cues must provide functionally by Educational needed, so as to facilitate the learner retrieve information associated with visual allusions.

3- Gravity and excitement: You must be using the visual cues of words appears attractive and exciting; so as to draw the attention of students to this feature of her words visually.

4- Suitable visual cues to the displayed content: Must be suitable cues of the content of the education provided, as well as the objectives and closely related to them, there are some types of visual cues suitable for study materials and is not suitable for other study materials.

Intellectual Disability

The concept of intellectual disability:

In (2007) the American Society of intellectual disability and developmental adopted definition of intellectual disability, which states that intellectual

disability: "disability characterized by failure meaningful in both intellectual functions (reasoning, learning and problem solving) and deficiencies in adaptive behavior as represented by the social and practical skills and daily shows that deficiencies before the age of eighteen. (AAIDD, 2007).

Benefit of education programs in the education of students with intellectual disabilities:

the use of educational programs in the education allows to students with intellectual disabilities many benefits asserts in its entirety on the ability to create a good learning environment for this category and can be summed up in the following points programs (al-Hazmi, 2007):

1. Visual Synergy Kinetic development.
2. Acquire the basic skills to use computers.
3. The good response of the pupil offset by the promotion and encouragement by the computer.
4. Development of The ability to focus attention and.
5. Acquire the concepts of arrangement and sequence and classification.
6. Development of self-confidence and self-esteem.
7. Use the tutorial over and over again without getting bored.
8. Ability to drawing and coloring development, through colors and animation provide making the learning process more fun.
9. Acquire some social and religious values.
10. Acquire some numerical concepts.
11. Development of children ready to read.
12. Some health and security concepts development.
13. to facilitate acquire basic skills of mathematical skills, reading, solving codes, and discrimination vocabulary.
14. Raises the difficult skills of pupils.

Systematic procedures to search

Material and Methods

First: instructional design of educational positions

After informing the Researchers on a set of design and development of educational models, was selected model (Latif elgzar, 2013) One of the instructional design models to be a guide in the design of educational situations have chosen this model for several reasons, including that:

1. Newness model for other models.
2. Consistent with the nature of the current research, where it can be used for design at the level of a lesson or unit level.
3. Characterized by flexibility and mutual influence between the elements.
4. Detailed procedures in a clear form and it help the Researchers to use it with ease.
5. This model is compatible with the logical planning and preparation and design educational programs steps. Design of the position of the educational process has gone according to this model a number of stages with some modifications of the integration, delete, or add it in line with the nature of the current research, And the following statement these stages:

The first stage: the analysis

is the first stage within the basic stages of designing training programs and practice based on the pattern of visual cues include:

Analyze the characteristics of learners and their needs, determining educational goals, analyze the content of training programs and practice based on the pattern of visual cues, and then analyze training programs and practice environment based on the pattern of visual cues.

1. Analyze the characteristics of learners and their needs:

1-1 demographic analysis:

- Age: This program is directed to students with intellectual disabilities in primary school and between the ages of 6 to 12 years old.
- Gender: male.
- Cultural background: Suitable for age stage.
- Language: Arabic.
- Special Needs: None.
- Social and economic level: Medium.

1-2 educational analysis:

- Education Level: primary school.
- Ability literacy: reading some of the letters and words.
- Previous requirements: knowledge of some of the characters and words.

1-3 educational environment analysis:

Was used in the training of students computer lab contains automated computers; the lab also has a display device data from Computer Data Show, and white blackboard for writing.

Educational resources which used by the Researchers in the educational design is the intellectual education for reading and writing in primary education curriculum.

1-4 select the desired objectives to achieve:

At this stage it is to identify the general objectives that will be presented, and in any case, these goals should be formulated so that they are clear and understandable, specific and express the desired learner and be measurable.

First, the general objectives and is hoped to achieve upon completion and the completion of the study of educational programming provided to them targets.

1. Knows letter of similar letter colored symbols.
2. Knows similar colored word of the word.
3. Distinguishes offending character colored symbols.
4. Distinguishes objectionable word for word shaded.
5. Determines the corresponding character for the character shaded.
6. knows similar word for word shaded.

Second, the educational objectives procedural

You must formulate content targets in behavioral terms so that describe the behavior of the learner, this behavior and be capable of observation and measurement, according to the formulation of behavioral objectives:

1. Determine suitable for measuring various educational outputs standards.
2. Choosing and building the appropriate measurement and evaluation tools.
3. Determine the type of performance or behavior should be done by the learner successfully after the end of the study required of him.
4. Educational content organizing.

1-5 determine the educational content:

Analysis content is the most important stages to answer the question: Why do we study? And to recognize the possibilities available in the learning environment of hardware and software, and to determine the best way to deliver content electronically, the Researchers analyzed the approach of intellectual education for reading and writing in primary education content, and it was the goal behind the curriculum analysis to reach the following capture:

1. Determine the educational activities practiced during the study curriculum to show how their performance and tools that will be exercised through it.
2. Determine the used of teaching methods.

Second stage: the design stage

Design stage based on the previous stage, which is placed special education sources and operations specifications, and include the organization of educational goals operations, organizing content strategy, content delivery strategy, the design of educational activities, and interaction design.

2.1 content organization and presentation follow:

After content analysis comes content regulation in order to put together and installed in a particular sequence, and in such a way to achieve educational goals that are predetermined in less time, effort and cost possible and are intended to also, select the content elements, and put them in an appropriate sequence in the order of goals, to achieve the educational goals during the period specific time.

It was determined educational content elements, organized and arranged in a specific sequence to achieve their educational objectives set, which aims to gain students with intellectual disabilities OCR characters and words skills in four sections:

1. Similar character for color character or shaded.
2. Objectionable character for colored symbols or shaded.
3. Similar word for word shaded or colored.
4. Objectionable word for word shaded or colored.

2-2 Identify ways to provide content:

The Researchers identifying ways to provide content to the learner based on achieving the desired objectives, which is:

1. Division of pupils:

Students were divided into two experimental groups considering color style and a cue shade style.

2. Provide the program through your Computer:

The research used the training and practice programs to achieve the desired aims of knowledge of the student's development and installation of information and knowledge that makes it easy for a student to train them, the Researchers used the pattern cues visual style as well as color shade style in learning skills.

3. Create the completion record for each student individually.

2-3 tests design and assessment tools:

In light of the general and procedural objectives, content and educational software, the Researchers has designed and built an achievement test of objective type of measures the ability of students with intellectual disabilities to visual discrimination of the shape of the letter and word.

2-4 educational program design based on the pattern of visual cues:

The educational program is designed into sections; with design software has been used where visual cues pattern (color style) as well as the design software utilizing visual cues pattern (shade style).

Third stage Construction and production stage

Research select start date and the completion of the study, starting from the 10. 20/6/1436 AH, the Researchers draw a table showing the dates of the beginning and end of each section and scheduling of activities and tasks, as shown in the Table 2. Table 2 shows the dates of the beginning and end of each section (by 8 ration per week for the two groups on two days where he was two rations per day doubleheader for each group):

Table 2. The dates of the beginning and end of each section (by 8 ration per week for the two groups on two days where he was two rations per day doubleheader for each group)

start date	Title	the requirements of the lesson	activities
Monday 10/6/01436 e	similar letter	- Determines The same letter which character "colored - shaded." Determines The same letter which character "colored - shaded" on word in front of him.	Practical training in a computer lab.
Wednesday 12/6/1436 e	Dissenting letter	Determines letter Contrary to the letter "colored - shaded"	Practical training in a computer lab.
Monday 17/6/1436 e	Similar word	Determines word similar to the word "colored - shaded"	Practical training in a computer lab.
Wednesday 19/6/1436 e	Dissenting word	Determines word Contrary to the word "colored - shaded"	Practical training in a computer lab.
Thursday 20/6/1436 e	The post test		

Fourth stage: the correction stage

After the completion of the work of the amendments recommended by judgments and adjustments that result from the experiment, software is ready for a workout on a large sum of learners.

Second: preparation and design research tools

Achievement test

The Researchers built achievement test to measure the ability of students with intellectual disabilities in the primary stage visual discrimination of the shape of the letter and the word, it has passed the test the following phases:

Select the test target:

This test is designed to measure a sample of students with intellectual disabilities in the primary stage of cognitive side associated with the visual highlight of the shape of the letter and word collection. Where the Researchers prepared a group of objective questions, which were applied to each of the two experimental groups.

The formulation of the test items:

The Researchers formulation vocabulary test in 35 single was the formulation of the questions in the pattern of multiple choices:

Test Instructions:

The students with intellectual disabilities may not be able to read full instructions requested and understanding, as well as on the disparity between them, which could be wasted time reading the instructions, and then depended on oral instructions given by the teacher.

Answer key design achievement test model:

The Researchers has designed a form answer to a student so that is clear and easy to use for both the student and the debugger on the basis of the calculated one degree for each correct answer and zero to answer wrong, and thus degree majority to the test grades (35 degrees), the number of vocabulary, as the Researchers prepared to answer key in a similar model pupil answer was so select the correct options for each individual.

Preparing test and printing it in its first picture:

After preparing test in view of vocabulary target to theoretical side, Researchers developed vocabulary in one table with the level that measures it. And then he shows it to a group of special arbitrators in the field of special education and psychology and the Arabic language for the purpose of first setting for the test (Face Validity)

And that for:

1. Suitable scientific wording and linguistic for vocabulary test.
2. Questions over the link behavioral goals.
3. Suitable alternatives.
4. Suitable questions to pupils level skills.

In view of arbitrator's opinions, Researchers makes some adjustment which is: Correct some linguistic mistakes, delete some test vocabulary because of its fitness, the instruction for every question oral because of the failure of understanding the pupil to the question can't answer it in right way.

Experience exploratory for grades test:

After display the test to arbitrators, and makes necessary adjustments. The Researchers applying the test on a group of students with intellectual disabilities in the primary stage (not the study sample),their number reached 10 pupils as scoping experience aim to:

1. Determine the appropriate time for the test.
2. Expense of easy and difficulty of the vocabulary test labs.
3. Calculate the stability of the test plants.

The time of exam enforcement:

The Researchers has logged time taken in the first student to answer all the questions and then the test of time it took the last student to answer all questions and become the average test time = 45 minutes.

(C) Account the stability of test:

The test firming expense on a sample exploratory experience, who numbered (10) pupils, after they applied the achievement test, and monitored their findings in it, has been used as a Researchers retail midterm way.

It turned out that the reliability coefficient for Spearman-Brown equal to (0.777), Guttmann equal to (0.767).

Estimate the degree and method of correction:

Estimated by one degree for each individual answered by the student correct answer, and zero for each singular leaves or answered by the answer wrong, to be the total score for the test is equal to the number of test items and after these procedures has become a test consisting of 30 single and became finalized valid application.

Experimental design to research:

It was determined the research community, which includes all students with disabilities intellectual in the primary school of Imam Muslim, of the Department of Education in Riyadh in Thadig for the academic year 1435-1436h has been selected sample of the research in a scientific way and formed the sample (12) pupil has been deployed to the two sets of search as follows:

The first experimental group: studying the pattern of visual allusions color style and the number of members of the group (6) pupils.

Group II: the first group that is studying the pattern visual allusions shade style and number of members of the group (6) pupils.

Research method:

The Researchers using a quasi-experimental method to measure the impact of the independent variable (pattern visual cues) on the dependent variable (academic achievement), the sample was divided into two experimental unequal, where the application of research on them tribal and Uday tools. The Table (3) the general shape of the experimental design used in this research:

Table (3) the overall shape of the experimental design research

Two sets of study	Tribal application	Experimental Treatment	Dimensional application
The first experimental group	Achievement test	color pattern cue	Achievement test
The second experimental group		Shadow style cue	

Fourth Topic: Experimental study to research

The Researchers has implementation of the Experimental study research during the period from 10.06.1436e to 20/6/1436 e. And this according to a number of sequential steps and procedures as follows:

Get the administrative approvals for the implementation of the Experimental study research:

btained the approval of the graduate education program at King Abdulaziz University to apply the search experience through the program in a speech 22/05/1436 AH, containing the address of HE the Director of the Department of Education in Riyadh in order to facilitate the task of the Researchers and enable him to implement his experience. The Researchers Intellectual Education Institute chose to carry out the exploratory experience was selected as the School of Imam Muslim province Thadeq to be the implementation of the basic experiment research at the primary school students.

The initial settings for the implementation of the Experimental study research:

After that, the Researchers at the Institute for the implementation of the exploratory intellectual education experience to legalize and adjust search tool, the Researchers then study the implementation of the basic similarities in the experimental school Imam Muslim primary school.

Tribal application for the search tool:

The tribal application of the test sample grades on basic research (the first experimental group, the second experimental group) on the date of 10/06/1436 e.

Ensure the homogeneity of the two groups: The Researchers then tested using the "Mann Whitney" for the significance of differences between the two groups through the SPSS program.

Table 4 summarizes the test results Mann Whitney for the significance of differences between the two groups in the tribal application to test grades.

Table 4. The test results Mann Whitney for the significance of differences between the two groups in the tribal application to test grades

the group	Number	grade Average	Total ranks	"U" Values	The level of significance
The first experimental color pattern	6	6.75	40.5	16.500	0.818
The second pilot shade style	6	6.25	37.5		

It is seen from the above table that there were no statistically significant differences at the level (0.05) between the mean scores arranged two experimental groups in the tribal achievement test, which shows the homogeneity and equality of the two sets of research prior to the experiment.

Extrapolation of the results in a table (4) it is clear that the number of members of each group (6) students, the average grade set color style hint = 6.75 total ranks = 40.50 and the average grade shadow set style tip through the menu reached = 6.25 total ranks = 37.50, and it is clear that the value of U f = 16.500 and

the level of significance of 0.818 which is greater than 0.05 and this means that it is not statistically significant at the significance level (0.05) that is homogeneous groups.

Execution of the study procedures

After that make sure Researchers of equal and homogeneity of the two experimental groups, the implementation of the basic experiment began research where he was teaching the two sets of search as follows:

1. Teaching students the first experimental group painted style.

2. Teaching students the second experimental group shade style.

Dimensional application of research tools:

Having been the search experience has been teaching two groups according to the pattern of the proposed method, the Researchers applying search tool application Uday on the two sets of search in he applied achievement test dimensional on the two group 20/06/1436 e, where results were recorded and processed appropriate statistical methods.

Research results

First, test the validity of hypotheses:

After viewing the study procedures, and the completion of the basic experiment, and monitoring the grades of the two groups (first and second) on the achievement test experimental groups (tribal - dimensional), which measures cognitive achievement of the visual to distinguish the shape of the letter and the word among students with intellectual disabilities in primary education.

Achievement test results:

Achievement test results of the application of the two sets of search (color style as optical Tip – shade style as visual hint) dimensional:

To validate the hypothesis this states:

"The presence of statistically significant differences at the significance level (0.05) between the average grade scores of students in achievement test between the experimental group taught using color style cue in training and practice programs and scores of the experimental group that is considering using shading style cue in training and practice programs."

Significance of differences was calculated using the Mann-Whitney test through the SPSS program was reached results shown in the following table (5), Mann-Whitney test and the level of significance of the difference between the mean scores arranged first and second experimental group in the post-test grades:

Table 5. Mann-Whitney test and the level of significance of the difference between the mean scores arranged first and second experimental group in the post-test grades

the group	NO.	grade Average	Total ranks	"U" Values	The level of significance
The first experimental color style	6	8.67	52.00	5.000	0.041
The second experimental shade style	6	4.33	26.00		

Extrapolation of the results in Table 5 shows that the value of (U) 5.000, and the value (Sig = 0.041) which is smaller than (0.05), which indicates the presence of a statistically significant difference at the significance level (0.05) in the tested grades posttest between average ranks degrees sample taught painted style hint of individuals and (8.67), and the average grade sample grades taught shade style hint of individuals (4.33).

Accordingly it has been accepted hypothesis, which provided that:

There are statistically significant differences at the significance level (0.05) between the average grade scores of students in achievement test between the experimental group taught using color style visual cues in training and practice programs and scores of the experimental group that is considering using shading style visual cues in training and practice programs. "

Second, interpretation of the results and discuss:

Search results indicate that there are significant differences in the significance level (0.05) between the average grade scores of students in achievement test between the experimental group taught using color style cues in training and practice programs and scores of the experimental group that is considering using shading style cues in training and practice programs and so in favor of the first experimental group.

With this result, the results of this study are consistent with previous studies, Abdel-Hakm (2005), Ali (2013), Hassan (2000), where he reached the presence of statistically significant differences in favor of the color style optical.

While the results of this research will vary with the results of Shireen Abdul Aziz study (2011), which proved that the superiority of visual cues using (shading) for visual cues using (color) in the development of Discrimination optical alphabet character and words for kindergarten skills, may be due Researchers to sample and age differences schedule.

This can be explained search results for the following reasons:

1. visual hints of the texts had a major role in attracting the attention of students and increase their awareness of the important parts in the visual content

and this is consistent with the single coding theory that inside the human mind and the unit responsible for encoding all the mind of the information, whether verbal language or the language of non-verbal communication comes, if given learner verbal content on a particular topic and give encoding accompanied as colors is assumed that both the verbal content and non-verbal communication will be encoded in the brain as if it were only one kind and gets their link leads to increased learning, and recommended (Abdel-Hakim, 2005) using the color hint as it leads to attractive students Grammar educational content provided to them.

2. Shadow meeting behind the text was a exciting optical excessive led to increased distractions and lack of focus among students during the learning process, which resulted in a decline in academic achievement among students limited capacity in information processing theory has been confirmed that the means provided by a number of channels can be that represents a plus cognitive load on the treatment by directing attention to the coding on the storage and memorization account and thus lead to a larger system know and remember less and that the findings of the (Hassan, 2000) in his study.

3. visual allusions to the neglect of aspects or unnecessary parts contributed resulting in increased achievement of knowledge and performance of scientific skills ones and this is reached (Dwyer) to unnecessary details can increase learning time without increase of achievement (Shahat, 2005 p S151-152).

4. That the color cues is used to facilitate discrimination in addition to the indirect impact, which is doing the link, where it relates to ideas leads to a certain type of effect in memory and therefore easier to recall and the calling process (Abdel-Hakim, 2005, p. S72-73).

Recommendations:

Based on the findings of the current research can make the following recommendations: -

1. the current results showed that visual cues (color style) was of an active impact on pupil achievement, so the Researchers recommends that follow this pattern when teaching these students.

2. Employing visual cues in the electronic educational programs in the education of students with intellectual disabilities because of their effective impact on their learning.

Suggestions and other research studies:

1. Further studies and research, dealing with visual allusions in training programs and practice different decisions to reach the best visual patterns hint at the performance of various cognitive skills development.

2. Conducting similar studies of the present study, dealt with different styles of visual allusions patterns and its impact on the development of skills.

3. Examine the impact of visual allusions pattern in other educational stage.

References

1. Ababneh, Ziad and Walid Mohammed and Obeina and only Muhammad Ali (2005): "*the old educational games in the age of Computer*" Irbid.
2. Abdel-Hakam, Noha (2005): "The impact of the different methods of display readable text, audio and hints on the television screen in literacy programs on academic achievement," *Master*, Helwan University.
3. Abdul Majid, Mamdouh Mohamed, Mohamed Zidan Abdul Hamid (2008):" effective training program for computer-aided based on the proposed activities in the evelopment of some life skills for mentally handicapped children, "*studies in the curriculum and teaching methods*, Egypt, GS 136, pp. 122 -169.
4. Afaneh, Izzo and Naila, Khaznadar and Nasr, El Kahlout (2005): "*teaching computer Methods*" 1, Gaza, Palestine.
5. Ali, Mohamed El-Sayed (2007): "decision proposed in the computer for mentally retarded pupils who are able to training," *Master*, College of Education, Al-Azhar University.
6. Al-Qahtani, Ali Salem al (2009): *Effectiveness of the proposed program for the evelopment of oral reading skills of students with mental retardation simple*" Master, King Saud University.
7. American Association on Intellectual and disabilities Developmental (AAIDD). (2007*)." Definition of Intellectual Disability*", Retrieved December 17, 2014, http://www.aamr.org/content_104.cfm.
8. Bassiouni, Hisham El-Shahat Hassanein (2008): "*The effect of the interaction variables between the design of the graphics display and alarm signal in the computer educational programs on the development of achievement and adjustment of weak students' attitudes toward learning mathematics*," Master, Faculty of Education, Helwan University.
9. Bollinger, Doris U (2009): "*Use Patterns of Visuals Cues in Computer – Mediated Communication*" Quarterly Review of Distance Education, vol.10,No2.
10. Davies, Daniel K., Stock, steven E. & Wehmeyer, Michael L. (2004). "Computer-mediated self-directed computer training and skill assessment for individuals with mental retardation. *Journal of evelopmental & Physical Disabilities*", Vo1.16, Issue 1, p95-105.

11. Dessouky, Anscherah Abdul Aziz Ibrahim (1989): "*The impact of some of the animation educational variables in the efficiency of the performance skills*," PhD thesis, Faculty of Education, Helwan University.
12. Diab, Fethiye (2001): "*Teaching skills of addition, subtraction for mentally handicapped students using the computer*", Master Thesis, University of Jordan.
13. Elkashef, Iman Fouad (2002): "the effectiveness of computer programs to improve learning some skills for mentally retarded children" *Egyptian Journal of Psychological Studies*, (35).
14. Far, Ibrahim Abdal wakel (2002): "*The use of computers in education"* Oman, Dar ehfekr.
15. Gelapinh, Omar Najib Hamid (2004): "*The impact of the use of computerized educational software based on problem-solving style and training method and practice to acquire a basic third-grade basic skills in mathematics students*," Master, Yarmouk University, Irbid, Jordan.
16. Ghazzawi, Mohammed Zeban (2000): "*the psychological foundations of education technology,"*, Amman, Jordan.
17. Haliba, Massad Ibrahim (2008): "a software program for the development of vocabulary careers among students with mental disabilities who are able to learn in first grade create schools of intellectual education," twenty scientific conference, education and cultural identity curricula, Egypt, Folder 3 p.874 to 925.
18. Harsh, Ayed, and Mohammed Ghazzawi, and Jamin, Hatem (2003): "The production of educational software and educational applications design," i 1, Dar elmasera publishing, distribution and printing, Amman, Jordan.
19. Hassan, Hassan Farouk Mahmoud (2000): "Following some variables in graphics written books and printing configurations offer a collection of high school students to the concepts of industrial printing technology ", Master Thesis, College of Education, Al-Azhar University.
20. Hazmi, Adnan al-Nasser (2007)"mental disability guide teachers and parents," 1, Oman, Dar elfekr for publication and distribution.
21. Hazmi, Divorced (1995): "A study on the evaluation of mathematical software used on the computer," the magazine of the Gulf 55 (16).131 to 159.
22. Hosan, Bandar Abdulaziz (2009) "effective educational program by using computers in the development of subtraction skills among students with disabilities intellectually sample degree," Master, King Saud University.
23. Hosawi, Ali Mohammed Bakr al (2009): "Obstacles the use of educational technology in teaching students mentally retarded as perceived's teachers Intellectual Education in Riyad," the College of Education, King Saud University.
24. Hosawi, Ali Mohammed.(2002)." Teachers perceptions of computer technology, competencies working for students with mild cognitive delay". Unpublished dissertation, University of Idaho. ID.U.S.A
25. Joseph, Amani Abu Bakr (2001): "training needs on a computer for teachers of special education software in the city of Riyadh", Master Thesis, Department of messages and Technology Education, Faculty of Education, King Saud University.
26. Khamis, Mohammed Attia (2003): "Education technology products," i 1.
27. Mahmoud, Hanan Ahmed Abdullah (2010): "The relationship between the visual presentation of examples and hints in educational computer software and the correct misconceptions about the concepts in science for students in basic education", Master Thesis, Faculty of Education, Helwan University.
28. Mahmoud, Shireen Abdul Aziz Saad (2011): "the effectiveness of visual cues styles in educational computer to recognize alphabet letters and words with the kindergarten children development program," Unpublished MA Thesis, Faculty of Education, Helwan University.
29. Mannai, Abdullah Salem (1995): "Education with the help of a computer and software educational" Journal of the Faculty of Education, GS (12) 433-473.
30. Mansoor Ahmed (1999): "Educational Technology", and the system of multimedia, educational technology series 0.8.
31. Mechling, Linda; Gast, David; Barthold, Stefane(2003):" Multimedia computer-based instruction to teach students with moderate intellectual disabilities to use a debit card to make purchases" Exceptionality, 11 (4), pp 239-254.
32. Minute" ERIC, ED 443
33. Mohammed Salah and Ajlouni, Khalid (2000): "The impact of the use of computers as a way to learn in the collection of ten grade students in the Study of biology and attitudes towards computer" Mutah Journal, Volume 18, Issue 6, Amman, Jordan.
34. Owaidat, Abdullah, and Morshed Yosry (1992): "disadvantages of reading aloud and the level of absorption of material printed at the third grade students and fourth magistrates in Jordan",

Journal of Studies, the eighteenth folder, First Issue, January, Oman, Jordan University Press.
35. Qaryouti, Joseph and cortawy, Abdul Aziz & Samadi, Gamil (1995): "Introduction to Special Education", Dubai, Dar pen for publication and distribution.
36. Rabea, Somaia Mahmoud (2005): "" computer program effectiveness of multimedia in the collection of students with mental disabilities (who are able to learn) some science and health education concepts in the Kingdom of Saudi Arabia ", reading and knowledge magazine, No. (49), Ain Shams University, pp. 48 - 73.
37. Rossais, RIM Fahd (2003): "the effectiveness of an educational program to help in the education of computer skill combining for pupils with mental retardation simple," Master, Bahrain, College of Education Arabian Gulf University.
38. Sadiq, Alaa Mahmoud (1997): "Setting up computer programs for educational purposes for the study of functions and algebraic equations," Dar scientific books for publication and distribution.
39. Safer, Aohod Adnan (2005): "The Effectiveness of a computer program to modify the behavior of hyperactivity and lower the time of edited by using the individual sample design for a class Statistics disability", Master Thesis, Faculty of Education, King Saud University, Riyad.
40. Salam, Mohammad Abdul Majeed (1999): "the diagnosis of reading problems among a sample of mentally retarded students with a study of the effectiveness of a proposed program," Master, Faculty of Education, Tanta University.
41. Salama, Abdul Hafiz and Abu Raya, Mohammed (2002): "Computers in Education", Oman, Elahlyia.
42. Saleh, Iman (2013): "The effect of the interaction between visual cues and cognitive method in the e-book on the collection of knowledge and skill performance and ease of use to the students of the second phase of the basic learning" the Egyptian Society for Technology in Education, vol 23, p 1.
43. Saleh, Magda Mahmoud (2002): "computer in the children's education," Oman, Dar elfeker.
44. Shahat, Saad Mohamed Osman (2005): "Educational Media and Technology Education", Part I, Damietta, Nancy Library.
45. Shuaibi, Mohammad Aladdin Helmy (2000): "plan remedial activities proposed to the problems of reading among third graders," Journal of research in Education and Psychology, Volume XIII, the fourth issue.
46. Swaidan, Amal Abdel-Fattah, Mona Mohammed Elgzar (2007): "Education technology for people with special needs," Dar elfekr, Jordan.
47. Tabboz,H.k.,Hans and Wachs,Harry (2004):" Effect modeling and visual cues in multimedia programs inside the classroom, Educational Technology" &Society,Vol.22,No3.
48. Torgesen, Joseph, K, Barker, Theodore, A. (2005). "Computers aids in the prevention and reanimation of reading disabilities". Learning Disabilities Quarterly 84 -, Vo1. 18, No.76.
49. Valentini, Nadia (2004):"Visual cues, verbal cues and child Development" Strategies: A journal for physical and sport Educators, Vol. 17, No 3.
50. Williams, Lynda Patterson.(2000)."The Effect of Drill and Practice Software on Multiplication Skills: Multiplication Puzzles Versus the Mad.

4/6/2016