The Effectiveness of a Multi Sensory Approach in Improving Reading CVC Words among Mild Intellectual Disabled Students in State of Kuwait

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Abstract: *This research examines the effectiveness of multi sensory approach for the purpose of reading CVC words among mild disabled students in the state of Kuwait. The discussion in this study is based on the multisensory approach that could be applied in the teaching of reading skills as well as phonemic awareness skills which could enable the students to acquire the early skills of reading. A total of 20 respondents were involved in the process of gathering data through the quantitative study method, which compromises of male and female mild intellectual disabled students. A pretest-postest method was applied in order to examine the effectiveness of the multisensory approach that could make it possible for them to read CVC words. T test for the paired sample was used to figure out the significant differences between the pretest and posttest scores achieved by the students. The findings of the study showed the effect of the multi sensory approach in the teaching process of reading CVC words, which at the same time pave a way for the students to apply the mentioned skills in their learning process to read. This study is also significant for schools, centres, and institutes that are involved in the field of special education. Finally, it is considered as a road map to enable the students to learn and acquire the early skills of reading.*
Keywords*: Multi sensory approach, CVC words, mild intellectual disability.*

I.   Introduction

Reading skills are a main cause for success in life and in society. The inability to read affects the ability of the person for having a better life and also decreases his opportunities to play a role in the society, moreover, Lonigan (2006) confirmed that lack of reading can lead to long term consequences related to difficulties in other academic areas while Al nahdi (2015) adopted that being illiterate in a society will be considered as a hindrance in getting his rights and also in having normal standard of life. Consequently Bartel (1990) clarified that reading is essential for every individual for a better life beside that he added that the inadequate reading skills can significantly affect the capacity of individuals for economic independence furthermore, printed materials are considered the most important ways of access to information. Mackay (2007) listed many reasons that show that reading is important ;these include getting a license , driving a car, going into trip , ordering a food , going to doctor , he also assured that adults who cannot read have trouble living independently and successfully. All the previous efforts focused in the importance of reading for individuals and generally this research is mainly about teaching reading English CVC words for mild intellectual disabled students in state of Kuwait, which may lead us to speak more about the general issues in the research especially that learning a foreign language for mild intellectual disabled could be a challenging skills for them and needs more efforts to find proven ways to enhance these skills.

II.   Background of the study

Mild intellectual disabled students are considered the biggest group in the community of intellectual disability. According to the information provided by the DSMIV, it was mentioned that they made up about 85% of all the intellectual disabled students. The educational goals of teaching MID students mainly focus in life skills and vocational skills meanwhile Heward (2005) claimed that the educational goals of the MID students include the need to be independent and self sufficient. English language is a dominant language in the current world. It is the language of shopping, internet, air industry and it is spoken by individuals in restaurants and hotels and there is a worldwide attitude to learn the English language as it enables the person to communicate with others in different situations. Moreover Rondale (2000) claimed that learning a second language is considered a priority in this century and not being able to speak languages other than mother language could be a form of illiteracy. Unlike normal students, students with intellectual disability encounter several difficulties in learning to read and consequently they will encounter more difficulties if they will learn a second language. Banks (2008) refers to the general difficulties that students encounter in learning a new language which include having negative attitude, low motivation and anxiety. However, there are other difficulties related to the ability to retrieve the information and organize it in the memory that why reading for

them considered to be a complicated skills which require a specific hierarchy. in addition to that scarborough (2008) mentioned the areas where they have difficulties which include phonological , syntactic and semantic problems.

While Rondale (2008) also stated that those children who raised with bilingual parents can develop a certain degree of bilingualism.

Scruggs (2008) stated that reading instruction was not considered to be as important as other skills like vocational, functional and social skills therefore, Browder et al (2006) complained that some of the educators assumed that this group of students did not have the ability to learn how to read which encouraged them to focus in lower skills. However, there are lots of studies that pay the attention for teaching literacy skills to MID students and according to Katmis (2000) most of the programs which were done in this area focused mainly in sight word approach.

Statement of the problem

Koritsas and Iacono (2011) conducted a survey and one of their findings stated that reading difficulties were the most common secondary condition of ID, with 67% of sample reporting the reading as a secondary problem area. Additionally, researcher defines secondary conditions as those who can be preventable(Koritsas & Iacono, 2011; Turk, 2006) subsequently , giving enough knowledge and proper strategies for those student might lead to decrease the failure rate in learning to read

According to Hill (2016) the emphasis and methods of teaching reading for students with intellectual disability have changed over the past years. The main focus was on teaching sight words to enhance daily living skills (conners, 1992; Houston and Torgensen, 2004) furthermore Browder (2006) criticized this approach by mentioning that it targeted only word identification and other isolated reading skills. English language is known with its widespread around the world as a dominenant language, it is considered to be the language of internet, commercials, industry, advertisement and the language of business. Mohammadain (2016) claimed that teaching English to intellectually disabled students is more complicated than teaching it to normal EFL. He stated that the complexity of teaching English to intellectually disabled as it requires specific techniques and methods. Students with intellectual disability experience difficulties in language classes, Katmis (2000) stated that reading was not a desirable skill in the beginning of forming and designing educational programs for MID students also he added that some of the teachers considered reading as challenging skills for the MID students and they preferred to focus on other skills like vocational and social skills. The efforts of teaching reading has witness a revolutionary progress since the start of the new century lots of research were done to teach the MID students to read but Browder (2006) claimed that most of these interventions concentrated mainly in teach sight words. The intervention in teaching reading was mainly sight words and phonics based interventions. These efforts were done in the foreign literature but in Arabic countries teaching reading still in a very early stage as it still focuses in pre reading skills like phonemic awareness skills and phonological awareness skills. In countries like Kuwait where there are schools that use English or American curriculum teaching reading skills is still a bit far from the world levels and the major focus of the teachers are on improving receptive and expressive skills and in some schools they teach only letter identification skills for the MID students. Beside that the researches in the field of teaching reading is still in an early stage. The studies of Moahmmed and Moustafa (2012) , Eissa (2013) Abdul Khalik (2014) all these studies were mainly on phonemic awareness skills and word recognition skills.

III. Theoretical framework
3.1 The Multi sensory approach:

Based on the research in the field of the multi sensory approach , According to Bradford (2008) using a multi sensory approach in teaching means simply to use more than one sense in learning the new task. In other words, multi sensory approach received its name because all the new skills that can be learnt are presented to the students via sight, sound, and Kinesethic means. Cameron (2001) explained the idea of the multi sensory approach by advising the teachers to teach students to make links from what they see (printed materials) , what they hear and what they produce in learning to read. Additionally, she recommended teachers to teach the new information to the students in different modes and senses. (Farokhbakht.Nejadansari, 2015) claimed that multi sensory approach has been regarded effective with special needs as the hearing impaired or deaf students , dyslexic children, disabled or poor readers and underachievers. Additionally, Mohler (2002) stated that phonics approach is considered a main part of the multi sensory approach. Schneider and Evers (2009) recommend to use the multi sensory approach for teaching English literacy to English language learners since they are at risk of poor learning because of their limited knowledge in English language. Some of the studies recommend the use of the multi sensory approach to teach second language like the study of Schneider and Evers (2009) who conducted a study to test the effects of multiple multi sensory approach structure language on students who were learning German, Hebrew and English as a second language. The researchers adopted that the multi sensory approach is applied to any language as long as it is supported with different variety of activities.

IV. Literature Review

The literature of teaching reading to mental retarded students is in a different category and consists of various dimensional sides. According to the research conducted regarding the particular literature, it was clear that there are different approaches that could be used to teach students to read words. In 2000, Katmis introduced his review of reading instructions related to mental retardation starting from 1800 until 1999 and it is summarised in the following points:

i.   The reviews of reading for mental retardation proved that they are able to read but below their mental age as a result of the de-emphasising of literacy instructions and focusing more on other skills.
ii.   The literacy instructions also focused on sub-skills which cause the difficulty in mastering these isolated sub-skills, thus they failed to gain access to higher process of applying the literacy skills.
iii. Limited details on the description of academic characteristics assessment for mentally retarded students that leads to the insufficiency of these programs.
iv.   The mention on the work of Algozzine and Wood (1994) that revolves on reading intervention related to mental retardation which urges on the focus of comprehension and the use of wide variety of texts and cooperative grouping practices.
v.   Early trials were conducted to apply the multisensory approach in the teaching of reading based on the work of Kirk (1933) that applied a multisensory alphabetic method as an instructional practice to teach reading to mental retardation students.

4.1 Literature Review in Arabic Studies

The history of studies in the field of teaching English reading in the Arabic literature is not so long compared to the studies found by the researcher which are very modern and focused well in the very early skills. In their study, Mohammed and Mostafa (2012) examined the effectiveness of phonological awareness intervention to improve the word recognition ability of children with autism spectrum disorder. In their study, 47 students diagnosed with ASD were chosen as the participants. The sample was randomly divided into two groups. The findings of the intervention proved the effectiveness of phonological awareness intervention in improving the ability of ASD students in word recognition.

Eissa (2013) examined the effectiveness of phonological awareness training intervention to improve the pre-reading skills of children with mental retardation. A group of 47 students with intellectual disability were divided into two groups, namely experimental and control groups. The two groups possess similar IQ, age, and word recognition test scores. The pretest data was collected based on a pre-reading skills test. The program lasted for five weeks with 20 minutes session conducted three times a week. A variety of fun and play-based phonological activities were conducted in the class. An experimental pretest/pos-test control group design was used in the study. PA is concluded to be effective in improving the pre-reading skills.

Abdul Khalik (2014) conducted another study in the same field by examining the effectiveness of phonological awareness training intervention in order to improve the phonological working memory of children with intellectual disabilities. 30 students with intellectual disability were chosen as the participants of this study. They were divided into two groups according to their age and IQ. A pretest/post-test was used to identify the differences between the two groups, and the finding is in agreement with the findings of the previous researches which confirmed that the phonological awareness is effective in improving the phonological working memory for the experimental group

V. Research questions

a)   What is the effectiveness of the multisensory approach in teaching reading CVC words for mild intellectual disabilities students?

5.1 Research objectives
To determine the effectiveness of the multisensory approach in teaching reading CVC words

5.2 Research hypothesis:
There is no significant difference between the means of the pretest and post-test in reading CVC words.

VI. Research methodology

This study adopts a quasi experimental design as the researcher found it is the most suitable method to be applied therefore the researcher used pretest posttest design with one group

6.1 Demographic of the participants:
Data was collected from 20 students of special education summer centres in state of Kuwait. Students were assessed in the beginning of the intervention and they go through the program for the period of the program and then they were re assessed again. Each participant gets a training bag that contains the letters and the worksheets

about it. The duration of the session was about 40 to 45 minutes and there was a progress sheet for each student to record the progress that takes place in his learning skills. Table 4.1 shows the final number of the students who participated in the program.

Table 1.1 Number of Students Participated in the Program

Participants	No of participants
Students	20

6.2 Research instrument:

The researcher prepared a special test to measure the knowledge of the student in the letter sound correspondence. The test was prepared after the researcher has studied international test that measure the same skills like the DIBELS and BRIGANCE III. The test that was prepared especially for this study consists of three main parts the first part for letter identification and the second part for letter sound correspondence and the third part for reading CVC words. For the specific use of this study, the researcher used the second part which is for the letter sound correspondence.

6.2.1 The reliability and validity of the research instrument:

Firstly the researcher did an internal consistency for the test to ensure its reliability to the application of the study and the results are shown below

Table 1.2 *:* Correlation Coefficient by the Test Dimension

Item No.	Dimension of the test	Coefficient of the correlation
1	Part one Letter Identification	**0.826****
2	Part two Letter sound correspondence	0.941**
3	Part three Reading CVC words	0.671**

** Significant level a==0.01

Secondly, the researcher used the test retest reliability to ensure the validity of test and the cronbach's alpha was (.835) which indicated to a high reliability for test

Table 1.3 Reliability Statistics

Cronbach's Alpha	No of Items
.835	8

The alpha coefficient for the 8items is .873, suggesting that the items have relatively high internal consistency. (Note that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations.)

Thirdly, the test was sent to five experts in the field of the special education to show their opinions and review it to be used in the study and the researchers considered their suggestions (A list of the experts is attached in the appendixes of the study)

VII.   Procedure

After the students were chosen, the teacher conducted the pre test to measure the current knowledge of the students in the area of knowing letter sound correspondence. After that, the researcher started the intervention for two month with 45 minutes session three days per week

VIII.   Materials

Every student got a file with worksheets and flashcards about the letters with lowercase and uppercase shape of letters. Besides that, the researcher prepared a list of multi sensory approach activities for each letter and its sounds to be done by the student.

IX. The Intervention

The process of teaching student to identify and recognize the sounds of the letter was done through a multi sensory approach activities which consists of visual, tactile, kinaesthetic and auditory drills which aim to help the student to link all these activities with the skills of identifying the sounds. Every sound was presented to the students through these activities in the coming points the researcher will give examples in how to introduce the new sounds.

9.1 Visual activities:
In this part, the teacher will show the card with the letter to the student and will say the sound to the student for example : the sound of this letter is /aaaaaaa/ teacher will ask the student to repeat the sound when he shows to him the card of letter A After that the teacher will give to the student a worksheet that has lots of letters and will ask the student to circle the sound of letter A the teacher then will ask the student to look for sound A in a plastic letters and asks the student to say the sound when he found the letter.

9.2 Auditory activities
In that part, the teacher will ask the student to say the sound of the letter when the teacher show a flashcard to him then when the student says the sound correctly the teacher will examine the ability of the student to recognize the sound and discriminate it by putting some of the letters in front of the student and he will ask him to pick up a letter when he listens to its sound.

9.3 Kinaesthetic activities:
In that part students will be asked to draw the sound of the letter in the air when the teacher says the sound for them also the teacher will ask them to use their finger to paint the letter and while they are painting the letter they must say the sound

9.4 Tactile activities:
In this part , the teacher will prepare a sand tray to the students and they will be asked to draw the letter and says its sounds when the teacher show them a model of the letter. Furthermore , another activity for the tactile part is asking the student to draw the letter and says its sound on their hands or their arms which activate the student to remind the shape of the letter

10. Findings of the study:
To examine the differences between the pre test and post test, paired sample T test was conducted. Table (1.4) shows the results.

Table 1.4: Results of Paired Samples T -Test for significance of differences between the means of the pretest and post-test in reading CVC words.

Test	No	Mean	Std. Deviation	T	DF	Sig.
pre	20	0.40	0.883	-27.543	19	0.000
post	20	15.80	2.913			

In the table above (1.4) shows the sample of the study in both pre test and post test in the pre test the means of the scores of the student is (0.40) while the standard deviation is (0.883) on the other hand, the means of the scores of same students in the post test is (15.80) and the standard deviation is (2.913) the t-test value was (-27.543) and the degree of freedom was 19. The significance value is less than (0.05) and that can be a proof to reject the null hypothesis one and which also can be explained by observing the effectiveness of the multisensory approach in teaching the mild intellectual students to learn reading CVC words.
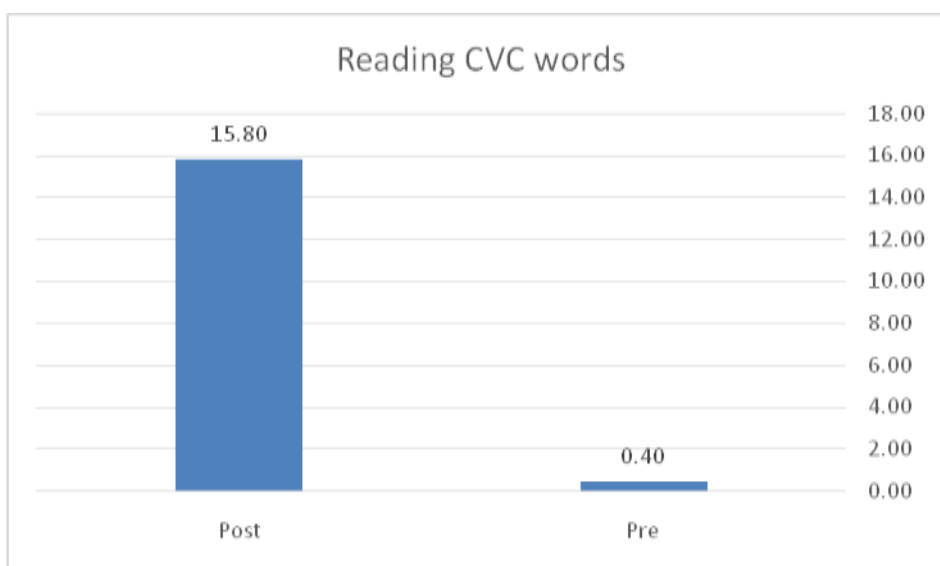

Figure 1.1 Reading CVC words

X. Discussion

There are lots of studies that discussed the use of the multi sensory approach in teaching literacy skills for different types of students but according to the literature review which indicated to the widespread of the use of the multi sensory approach among the students which suffers from dyslexia and other types of learning disability. Furthermore, it was also used with special needs students like the study of Davis (2011) who examined the effectiveness of the multi sensory approach in teaching students with emotional and behavioural disorders to learn reading skills the findings of his study refers to the effectiveness of the multi sensory approach in teaching and it also indicate to the benefits of Orton and Gillingham approach in teaching students with emotional and behavioural disorders. The use of the multi sensory approach to teach Arabic learners some reading skills in the field of the Arabic language was used in the study of Hazoury , Oweini and Bahous (2009) in their study to teach some dyslexic students decoding skills in the Arabic language , the results of the study revealed that the use of the multi sensory approach was useful and effective to teach the students the decoding skills in the Arabic language.

Al Elaimat (2009) investigated a proposed program to teach reading skills to dyslexic students in Jordan and his study used a combined method of Orton and Gillingham method and Vygotsky theory to test the effectiveness of proposed program in improving the basic reading skills and he claimed that the proposed method was more effective in teaching letter sound and letter identification and reading skills than the traditional method.

Jubran (2012) also examined the effectiveness of the multi sensory approach for teaching English language skills for grade ten in Jordanian public schools. The findings of the study proved that the multi sensory approach was more effective than the tradition way in teaching the English language skills.

After the abovementioned part, the results of this study coincide with these studies in terms of the effectiveness use of multi sensory approach in teaching students to identify and recognize literacy skills starting from letters to letter sound correspondence to the reading of different types of words.

XI. Conclusions

This study sought to examine the effectiveness of the multi sensory approach in teaching the mild intellectual disabled student to identify and name the sounds of the English alphabets. After analyzing the data it was noted that there significant differences between the means of the pre test and the post test scores of the students which can be explained as the multi sensory approach activities helped the students to learn the letter sound correspondence.

13. Implications and suggestion for future research:

This study adds the literature review of teaching reading and pre reading skills to the mild intellectual disabled students in general and in the Arabic literature specifically as it is considered to be first in this area. Special education teachers has to find out more activities and creative ways to help students with identifying the letters and its sounds in order to help them to step forward to learn literacy skills.

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