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Effectiveness of Direct Instruction (DI) approach on remediating children with learning disability in the area of reading in the United Arab Emirates

Cover Page Footnote

Effectiveness of Direct Instruction (DI) approach on remediating children with learning disability in the area of reading in the United Arab Emirates Authors in order 1. Associate Professor Ousha Almheiri (first author) o.almuhairy@uaeu.ac.ae United Arab Emirates University The Department of Special Education 2. Assistant professor Najwa Alhousini najwa.alhousini@uaeu.ac.ae United Arab Emirates University Curriculum instruction 3. Assistant professor Samar Al-amawi (correspondent author) Samar.amawi@hotmail.com Alahliyya Amman University The department of Audiology and Speech pathology Jordan 4. Associate Professor Yaser Natour natour@fulbrightmail.org University of Jordan Department of Hearing and Speech Sciences Faculty of Rehabilitation Sciences

**Effectiveness of Direct Instruction (DI) Approach
in Improving Reading Proficiency
for Children with Learning Disability in United Arab Emirates**

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Abstract:

Children with learning disability face many challenges in reading comprehension and proficiency which affects their learning progress across all academic areas. The purpose of this study was to examine the effectiveness of “Direct Instruction” (DI) approach in improving reading for children with learning disability in the UAE. A total of 60 students aged seven through eight, participated in the study. All participants were classified as having mild, moderate to severe reading difficulties. An experimental design where participants randomly assigned to control (N=30) and experimental (N=30) groups was used in order to compare the effectiveness of utilizing the direct instruction. The experimental group students received training on basic morphological and phonological skills using the direct instruction approach, whereas the control group students received traditional instruction. A reading performance test was administered as pre-test and post-test to measure reading proficiency among participants. Results from the statistical analysis indicated a significant difference between the two groups in favor of the experimental group who received the direct instruction.

Keywords: Reading Disabilities, Direct Instruction, Resource Room, and Reading Remediation

فعالية منهج التوجيه المباشر في تحسين كفاءة القراءة لدى الأطفال ذوي الإعاقة التعليمية في دولة الإمارات العربية المتحدة

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الملخص:

يواجه الأطفال الذين يعانون من صعوبات في التعلم العديد من التحديات في فهم وانتقان القراءة مما يؤثر على تقدم التعلم في جميع المجالات الأكاديمية. هدفت هذه الدراسة الي التعرف على فعالية نهج "التوجيه المباشر" في تحسين القراءة للأطفال ذوي الإعاقة التعليمية في دولة الإمارات العربية المتحدة. وشارك في الدراسة 60 طالبا تتراوح أعمارهم بين 7 و8 سنوات. تم تصنيف جميع المشاركين على أنهم يعانون من صعوبات قراءة خفيفة، متوسطة إلى شديدة. تم استخدام تصميم تجريبي تم فيه تعيين المشاركين عشوائيا لمجموعة ضابطة ($N = 30$)، وتم استخدام المجموعات التجريبية ($N = 30$) لمقارنة فعالية استخدام التعليم المباشر. وتلقى طلاب المجموعة التجريبية تدريباً على المهارات الأساسية الصرفية والصوتية باستخدام منهج التعليم المباشر، في حين تلقى طلاب المجموعة الضابطة تعليماً تقليدياً. تم إجراء اختبار أداء القراءة كاختبار مسبق واختبار لاحق لقياس كفاءة القراءة بين المشاركين. بينت نتائج التحليل الإحصائي وجود فرق معنوي بين المجموعتين لصالح المجموعة التجريبية التي تلقت التعليم المباشر.

الكلمات الدالة: إعاقات القراءة، التعليم المباشر، غرفة الموارد، معالجة القراءة

Introduction

Reading is the core and most essential ability in the process of learning. Academic success is greatly dependent on a student's reading efficiency. The importance of reading to academic achievement is a key factor because it is a basic requirement to acquire other learning skills (Murphy, 2004). As stated by Shahtout and McLaughlin (2012), it is through reading that "children are able to complete task in multiple subjects" (p.303). Reflecting on the student's innate natural learning abilities and outside learning environments, not all learners acquire the skill of reading in the same manner or at the same level. The nature of acquiring reading is different than acquiring language because acquiring basic reading skills doesn't happen naturally (Saffran, Senghas, & Trueswel, 2001). Learning to read require students to manifest a set of phonological and cognitive skills required for successful reading comprehension, such as phonological and syntactic awareness, word identification, and verbal working memory.

Teaching reading to students with learning disabilities presents additional challenges. To be successful and efficient, it is a task that requires a comprehensive and integrated system of special services, curriculum and instruction that will enable teachers to achieve their goals of facilitating effective reading skills to their special needs students. One instructional approach that has proven to work best with students who struggle with reading is the "Direct Instruction" (DI) approach. Recent research has shown the effectiveness of the direct instruction approach with students who struggle with reading concepts, skills, and strategies (Flores & Ganz, 2007). Accordingly, a direct instruction approach is considered an essential method to use with struggling readers and students with learning disability.

Context of the Study

In the United Arab Emirates (UAE), there have been several nation-wide initiatives that enhance students' awareness of the importance of reading and its critical role in having a successful learning process. In addition, a major goal of the UAE's Ministry of Education set for students with learning disabilities is to: ensure the effectiveness of its special education program by offering needs-tailored learning integrated with a complete appropriate environment. Such environment is characterized as rich in approach and least restrictive in application. The variety of opportunities presented to public and private schools' students through the Advanced Learning Plan (ALP) will

seek to meet their needs including those learners categorized as gifted and talented.

Students with learning disabilities in the UAE are now accommodated within mainstream (regular) schools but offered extra support through programs provided at a “resource room.” This approach will incorporate target learners into the main schooling system, protecting them from alienation and abnormality. The resource room is designed to offer that extra effort on individual and/or group basis but not to exceed half the subjects in the curriculum, as sanctioned by the learner’s Individual Education Plan (IEP), or Advanced Learning Plan (ALP) which is a written record of gifted and talented programming utilized with each gifted child and considered in educational planning and decision making.

Statement of the Problem

In the UAE, the Ministry of Education has found great deterioration in students’ reading proficiency after administering the annual national tests in Arabic, English, Mathematics and Science. Results found that fifth, seventh and ninth grade students scored less than the expected minimum proficiency level of third grade students, with other seventh and ninth grade students who scored in reading at the same level of third grade students (The National, 2011). However, it seems that there are no previous studies done for the purpose of measuring UAE students’ levels of reading proficiency or the difficulties they face, nor there is any research that examines the effectiveness of modern techniques and strategies used by other western countries to develop students reading ability. This fact—beside the weakness found in UAE students’ scores in reading abilities—assured the presence of the problem and emphasized the urgency for further research to investigate causes of the problem and to find more effective teaching strategies to solve it. Thus, the purpose of this research is to acquire deeper understanding of the effects of applying the “Direct Instruction” approach, as in different previous studies done in the West that have proven its effectiveness in the remediation of reading in struggling students.

Importance of the Study:

There is a lack of research that investigates levels of reading proficiency in students with learning difficulties in the UAE and/or the techniques to enhance reading. Accordingly, the purpose of this study is to examine the effectiveness of direct instruction (DI) approach on reading for children with learning disability in the United Arab Emirates and highlight the importance of administering new and more effective teaching strategies for students who

suffer reading disabilities. Such study is crucial for identifying some urgent requirements that need to be undertaken by the Ministry of Education in the UAE in regards to providing the necessary professional development for teachers to be more efficient in teaching all students, including children with learning disabilities in inclusion settings.

Hypotheses:

The current study tested the following five hypotheses:

- 1- There are significant differences at (0.05) level in scores of students with learning difficulties between Pre and post measurements in effectiveness of the direct instruction approach.
- 2- There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on the gender of student attributed to post measurement.
- 3- There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on the level of reading weakness (mild, moderate, sever) attributed to post measurement.
- 4- There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on class equipment attributed to post measurement.
- 5- There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on teacher years of experience, attributed to post measurement.

Literature Review

Reading Disabilities:

According to Mash and Berkley (2006), the Individuals With Disabilities Education Act (IDEA) of 2004, defines learning disabilities as “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, write, spell, or do mathematical calculations” (p.515). This definition emphasizes the psychological hindrance factors rather than any physiological causes. Learning disabilities are also neurologically-based processing problems that can affect basic skills such as speaking, listening, reading, and writing (LDA, 2018). A subgroup of learning disabilities is referred to as language –based learning disabilities that

manifest themselves in domains of literacy, such reading, writing, spelling, and vocabulary acquisition (Grigorenko, 2012).

Research in the field of language-based learning difficulties showed that different interventions and teaching strategies would manage the problem. Direct Instruction (DI) was one of these remediating strategies that has been raised highly more recently to the extent that Broudo (2011) argued that the absence of direct instruction could cause students to fall behind as the “talents remain untapped, their potential unrealized, their futures marked by illiteracy, dead-end employment or dependency, crime and/or addiction” (para.4). Direct instruction and the reinforcement of fundamental language learning skills can affect students’ lives beyond academics. Martin and his colleagues (2008) made a correlation between a learning skill such as reading and social functioning skills, as stated in their study of prison populations and reading difficulties. Denton and Al Otaiba (2011) endorse a similar perspective making a connection between poor reading skills and delinquency and suicide. Further research makes this problem even more disturbing indicating that hindered readers do not usually manage to improve their skills over time, but rather drove them to deteriorate as they get older (Martin et al., 2008).

Direct Instruction:

Direct Instruction (DI) is a teaching approach that utilizes all active elements of the teaching learning process. DI has been studied in a variety of teaching disciplines including language (Snel, Terwel, Aarnoutse, & van Leeuwe, 2012). DI is skills-oriented and the teaching practices it implies are teacher-directed. This approach is more personalized as it works with smaller students’ groups and more emphatic as it breaks down a set of cognitive skills lesson into smaller units to be instructed in a preset and direct sequence (D. Carnine, 2000). Slavin (2009) have defined DI as: “an approach to beginning reading instruction that emphasizes a step-by-step approach to phonics, decodable texts that make use of a unique initial teaching alphabet, and structured guides for teachers” (p. 1406). DI encompasses both core elements of a learning context, the “what” to teach (content) and the “how” to teach (methodology) (Snel et al., 2012). Magliaro, Lockee and Burton (2005) incorporated another definition of DI which states that it is “an instructional model that focuses on the interaction between teachers and students” (p. 41).

The DI model enhances the opportunity of acquiring cognitively meaningful reading through the process of explicit teaching (Shippen, Houchins, Steventon, & Sartor, 2005).

DI emphasizes an instructional approach that involves fast-paced, scripted, well-sequenced, rule-based, and highly focused lessons (Swanson, Hoskyn, & Lee, 1999). Teaching reading through DI accesses a student's already acquired knowledge and experiences and builds on them. Access is achieved via meaningful teacher-student interactions and teacher guidance of student learning. DI integrates several components of effective instruction with the incorporation of "schema theory", including relating new information to past learning, explaining to students why the new skill or cognitive strategy is important and useful, eliciting students' interest while providing step-by-step explanations and modeling through engaging them in guided practice, and practicing their ability to read texts and make groupings independently (Rupley, Blair, & Nicholas, 2009). Rosenshine and Stevens (1986) identify six effective phases for DI practices:

- 1- Review: this phase aims at motivating students to quickly summarize the previous lesson, and to formulate main aims of the present lesson.
- 2- Presentation: this phase includes the demonstration of all exercises essential to learning how to read cognitively. New material is introduced, activities are presented, and students' understanding of the new material is checked by teacher.
- 3- Guided practice: students work with the new material under the guidance of the teacher.
- 4- Independent practice: a next phase where students are given the opportunity to apply what has been learned independently. The teacher's role is to provide feedback and correct students as needed.
- 5- Week base revision
- 6- Month base revision

Rosenshine, Meister and Chapman (1996) emphasized the importance of the above-mentioned teaching functions in helping learners perform independently on highly structured tasks such as computational skills. Moreover, Raudenbush (2009) affirmed that explicit DI is more effective than indirect, implicit teaching methods especially with the beginning readers and disadvantaged children populations. A variety of other models of the direct instruction approach developed through the years including those introduced by Hunter (1982) and Carnine, Silbert, Kame'nui, and Tarver (2004) have similar components.

Direct Instruction (DI) derives its character from the more generic learning theory. The learning theory establishes that children generalize from pre-acquired understanding to the understanding of new, untaught examples (Schug, Tarver, & Western, 2001). Over the past 25 years, many researchers have reviewed and summarized the extensive literature on Direct Instruction,

several of whom using meta-analysis. Swanson (1999) has reviewed instructional components for students with learning disabilities across 180 intervention studies that aimed to predict effect sizes for such students. He found that the most effective strategies were the pervasive influence of cognitive strategy and DI models in order to overcome the academic difficulties. However, he stated that the Combined Model is the instructional method that showed the largest effect size. While morphology is a basic component of spoken and written language (Windsor, Scott, & Street, 2000), it has been stressed that morphological instruction plays crucial role in helping students with reading problems because morphological skills may overlap phonological processing difficulties in their brains which characterize reading difficulties (McCutchen, Stull, Herrera, Lotas, & Evans, 2013).

Przychodzin-Havis and colleagues (2005) reviewed 28 studies and found positive results for DI. Another study conducted by Kamps, Abbott, Greenwood, Wills, Veerkamp, and Kaufman (2008) on 87 students categorized as being at risk students for reading failure introduced Reading Mastery (one of the DI programs), Early Interventions in Reading, Read Well, or Programmed Reading to participants who participated in small-group reading intervention during first and second grades in either. Over time, students in Reading Mastery had significantly stronger gains (effect size=0.51-0.66) in comparison with the other three programs.

A sample of 30,000 Florida students participated in a study implemented by Crowe, Connor, and Petscher (2009) in which growth in oral reading skills was compared using six different reading curricula: Open Court, Reading Mastery (one of the DI programs), Harcourt, Houghton Mifflin, Scott Foresman, and Success for All. The analysis of the one-year study concluded that the effect of Reading Mastery was much better than the effect of using other curricula, while the effect size for Reading Mastery versus other curricula in first grade was 0.44. In a synthesis of meta-analyses of previously investigated factors affecting students' achievement, Hattie (2009) found that the DI teaching strategy was of significant effect. Four meta-analyses that included DI were examined. He found an average effect size of 0.59 across 304 studies, 597 effects, and over 42,000 students, and found similar positive results (0.99) for both regular and special education students.

In a different demography, Stockard (2010) also examined changes in reading abilities for first to fifth grade students of a large urban school system for a high proportion of economically disadvantaged students. The reading curriculum was taught using DI, Open Court, or a mixture of other models

selected by each school independently. At the outset of the study, the first grade students in the DI schools had lower vocabulary and comprehension scores than their counterparts in either of the other two treatment groups. By fifth grade, however, the DI students scored highest on vocabulary and comprehension averages that exceeded the fifth grade national average. These impressive results by Stockard's (2010) suggested that "the [DI] curriculum has long-term impacts and, at least for students in this high-poverty school system, can help counter the well documented tendency for declining achievement over time" (p.234).

In Stockard's (2011) study, he examined the development occurring in reading skills subsequent to using the Direct Instruction Reading Mastery program for 1600 students attending schools in rural Midwestern districts. The study compared students who received the DI curriculum from the beginning of kindergarten (full exposure cohorts) to students who followed this discipline in later grades. Those in the full exposure cohorts demonstrated significantly higher reading skills than students in the other cohorts. Furthermore, DI students' scores were at or above national averages. In the one district where statewide reading achievement scores were available, the percentage of students scoring at a high level went from well below the state average to above the state average in the five years of the study (effect size=.31).

Instructional Strategies Implemented in Resource Rooms:

A syntheses study done by Swanson and Hoskyns (1998) , Swanson, Hoskyn and Lee (1999), in addition to results reported by Snow, Burns and Griffin (1998) in the consensus reports, have all provided integrated evidence acknowledging the effectiveness of reading instruction through DI for students with reading difficulties/disabilities. Results showed that: (a) students benefit from explicit and systematic instruction, (b) phonemic awareness and phonics/word study are essential elements of instruction, (c) higher processing skills such as fluency, vocabulary, and comprehension were identified as crucial for the beginning of reading instruction, and (d) smaller group instruction seemed to be beneficial for students with reading difficulties. Vast literature on the educational needs of students with learning disabilities (LD) and the most effective ways to address these needs is on hand. Moreover, significant studies investigate the presence of these practices in classrooms designed for students with learning disabilities.

Swanson and Vaughn (2010) stated that "teachers in resource rooms are charged with designing and delivering individualized instruction to meet student need, often in the area of reading." (p. 481). Students' academic progress aided by the resource room facilitation has been frequently

investigated within different contexts. While some studies produce positive results, others show results on the negative side. Swanson (2008) conducted a study for the purpose of reviewing and synthesizing findings from 21 observation studies published in peer-refereed journals between 1985 and 2008 regarding the effectiveness of resource rooms. All studies analyzed used pre-set observation tools focusing on instruction provided to students with learning disabilities, and included students in Grades K–12.

The studies reported several findings. For instance, time spent in the resource-room varied from 11 to 180 minutes per week. Instructional approaches differed reporting that on average, teachers spent only 44% of the allocated reading instruction time conducting reading activities (Haynes & Jenkins, 1986) and twice as much time on non-reading activities (Gelzheiser & Meyers, 1991). From a different perspective, other reports showed that students spent 26% of their allocated resource-room time engaging in off-task behavior (Leinhardt, Zigmond, & Cooley, 1981). Swanson's (2008) synthesis of the research, nevertheless, does assert that resource-room reading instruction was still beneficial for at least 50% of students identified with learning disabilities because they manage to achieve within that context the academic gains in reading that they have failed to accomplish in the regular, mainstream classroom.

Denton and Al Otaiba (2011) reviewed the U.S. Department of Education's What Works Clearinghouse that recommended "students with serious reading difficulties who have not responded adequately to regular classroom reading instruction and lower intensity interventions should receive *daily, intensive small-group reading intervention* in addition to daily classroom reading instruction" (p. 5). According to the benefits of reading programs provided in resource rooms for students with learning disabilities, Denton and Al Otaiba's review of evidence-based practices identified key elements of a successful reading program for students with learning disabilities, affirming that it should be: (a) appropriate for students age group, reading levels and instructional needs, (b) designed for the explicit instruction (directly teaching and modeling content and skills, providing guided and independent practice) approach, and (c) attentive to the factor of correlating with texts of increasing difficulty where students can apply what they did learn.

On the other hand, another team of researchers have highly insisted that the effect of the placement of students with reading disabilities in the resource-room was minimal on their reading achievement. For example,

Bentum and Aaron (2003) conducted a single-group, longitudinal study of students who were taught in resource-room over a 6-year period. The study reported poor or no growth in word recognition and reading comprehension, in addition to decline in verbal IQ scores. These findings assure previous longitudinal studies' findings that included a non-learning disabilities comparison group. In addition, McKinney and Feagans (1984) reported declining scores on word recognition and reading comprehension despite students spending more time in the resource-room setting. However, such studies are non-generalizable due to the nature of the studies and the small sample size.

Methodology

Participants:

Participant students were collected from different schools in Al Ain regional area of the UAE. A total of 60 participants, 30 males and 30 females aged between seven and eight years old from grades 2, and 3 were included in this study. Participant students were chosen from 4 different schools after being identified as students with reading difficulties according to their performance in an Arabic reading test. Participant students' reading weakness ranged between mild, moderate to severe reading difficulties. Most teachers who participated in the study were bachelor degree holders; few were holding higher educational degree. Teachers' teaching experience ranged between less than ten years to twenty years, however most participant teachers had less than fifteen years of teaching experience.

Intervention:

Students who participated in the study had received Direct Instruction throughout the different periods of times they spent in recourse rooms that ranged between moderate to high equipped and prepared. The periods of time in which each student spent in the recourse room were different based on students' individual weaknesses, strengths, abilities, and skills. All participant students who were chosen to participate in the study were recognized as having reading difficulties based on their weak results shown in their Arabic language reading and writing tests. A questionnaire was also distributed to participant teachers in which 60 completed questionnaires were collected, analyzed and used in this study.

Data Analysis:

Data were analyzed using the SPSS in order to obtain means; standard deviations, and percentages. In addition, a t-test was obtained to compare between pre-test and post -test of participant students' performance in reading. Also, the One Way ANOVA and Scheffe post hoc test were also

obtained. Results will be discussed in more details throughout the following parts of this paper.

Results

Hypothesis 1:

There are significant differences at (0.05) level in scores of students with learning difficulties between Pre and post measurements in effectiveness of the direct method in the treatment of reading weakness attributed to post measurement.

Paired sample T-test was used to examine this hypothesis. Results presented in table (1) indicate that there are significant differences in scores of students with learning difficulties between pre and post measurements in effectiveness of the direct method in the treatment of weakness of reading attributed to post measurement. It has been found that direct method is more effective than traditional method in treatment of reading weakness among students with learning difficulties.

Table (1):

Paired sample T-test for

Pre Test		Post Test		T	Df	Sig.
Mean (N=60)	Std. Deviation	Mean (N=60)	Std. Deviation			
51.90	16.37	33.41	11.15	-9.891	59	0.000*

* Alpha = (0.05)

Hypothesis 2:

There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on the gender of student attributed to post measurement.

Paired sample T-test was used to examine this hypothesis. Results in table (2) indicate that there are significant differences in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on the gender of student attributed to post measurement. It has been found that direct method is more effective in female students than males with learning difficulties in treatment of reading weakness.

Table (2):*Independent sample T-test for*

	Gender	N	Means (pre- post)	Std. Deviation	t	df	Sig.
Pre-Post test	Female	30	19.23	17.21	0.398	58	0.048*
	Male	30	17.73	11.34			

* Alpha = (0.05)

Hypothesis 3:

There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on the level of reading weakness (mild, moderate, sever) attributed to post measurement.

One Way ANOVA test was used to examine this hypothesis. Results in tables (3,4) indicate that there are significant differences in means between pretest and posttests measurements. Scheffe post hoc test shows that there are significant differences in effectiveness of Direct Method in treatment of reading weakness between students with sever reading weakness on the one hand and students with moderate and mild reading weakness in the other hand in favor of students with sever reading weakness. Also, there are significant differences between students with moderate reading weakness and students with mild reading weakness in favor of students with moderate reading weakness.

Table (3):*Means and standard deviations*

according to level of reading weakness			
	Level of reading weakness	Mean (pre-post)	Std. deviation
Pre-Post test	Mild	-3.33	6.80
	Moderate	15.56	10.68
	Sever	28.44	16.05
	Total	18.48	14.47

Table (4):*One Way ANOVA according to level of reading weakness*

Source of variance	Sum of squares	df	Mean square	F	Sig.
Between groups	3546.28	2	1773.14		
Within groups	8814.70	57	154.64	11.46	0.000*
Total	12360.98	59			

Alpha = (0.05)

Hypothesis 4:

There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on class equipment attributed to post measurement. Paired sample T-test was used to examine this hypothesis. Results in table (5) indicate that there are significant differences in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on class equipment. It has been found that direct method is more effective when used in high equipped classes than medium equipped classes in treatment of reading weakness.

Table (5):*Independent sample T-test for*

	Class equipment	N	Means (pre-post)	Std. Deviation	t	df	Sig.
Pre-Post test	Medium	48	17.22	11.86	-1.352	58	0.001*
	high	12	23.50	22.08			

* Alpha = (0.05)

Hypothesis 5:

There are significant differences at (0.05) level in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on teacher years of experience, attributed to post measurement.

One Way ANOVA test was used to examine this hypothesis. Results in tables (6, 7) indicate that there are no significant differences between pre and post tests according to the years of experience.

Table (6):*Independent sample T-test for teacher educational level*

	Teacher educational level	N	Means (pre-post)	Std. Deviation	t	df	Sig.
Pre-Post test	Bachelor degree	51	18.58	15.57	0.133	58	0.030*
	Master degree	9	17.88	5.27			

* Alpha = (0.05)

Table (7):*Means and standard deviations according to years of experience*

	Years of experience	Means (pre-post)	Std. deviation
Pre-Post test	Less than 10 years	15.36	12.81
	Less than 15 years	21.09	16.95
	20 years	26.50	10.05
	Total	18.48	14.47

Discussion

This study aims to investigate the effectiveness of Direct Instruction (DI) approach on remediating students with reading difficulties in Cycle one in the UAE schools. Results from his study indicated that direct method is more effective than traditional methods in the treatment of reading weaknesses among students with learning difficulties. The findings from this study are in agreement with results of other studies done by Przychodzin-Havis and his colleagues (2005), Kamps and his colleagues (2008), Hattie (2009), Crowe and his colleagues (2009), and Stockard (2011).

The study results have also indicated that there are significant differences in effectiveness of direct method in the treatment of reading weakness among students with learning difficulties depending on the gender of the student attributed to post measurement. It has been found that direct method is more effective on female students than males with learning difficulties in treatment of reading weakness.

Another result of this study is that there are significant differences in effectiveness of direct method in treatment of reading weakness between students with severe reading weaknesses on the one hand and students with moderate and mild reading weaknesses on the other hand in favor of students

with severe reading weakness. Also, there are significant differences between students with moderate reading weakness and students with mild reading weakness in favor of students with moderate reading weakness.

Furthermore, this study showed that there are significant differences in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on class equipment. It has been found that direct method is more effective when used in high equipped classes than medium equipped classes in treatment of reading weakness. This result correlated with results from several previous studies done by Swanson & Hoskyn (1998), Swanson & Hoskyn & Lee (1999), Snow, Burns, & Griffin (1998) and Swanson (2008).

However, throughout this study, it has been found that there is no significant difference in effectiveness of direct method in treatment of reading weakness among students with learning difficulties depending on teachers' experience. It has been found that the effectiveness of using direct method in treatment of reading weakness is the same when provided by teachers with more or less years of experience.

Recommendations

The current study aimed to examine more appropriate ways to bring effective interventions into our students in Cycle one who are at risk of developing serious reading disabilities that might affect their lives negatively. For future research, further studies are needed to investigate the effectiveness of using DI with Cycle two and three students, in addition to studying the effectiveness of using DI in regular classes. Findings from this study should encourage stakeholders to espouse the DI teaching methods to be used with students who are at risk of developing reading disabilities that would lead to more learning disabilities and struggles in different future life aspects. Based upon the results of the current study, the UAE's Ministry of Education is encouraged to offer more professional development training for our teachers to increase their knowledge about better teaching strategies and deepen their understanding of how to teach reading effectively to all students, especially those who are struggling readers.

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