The Impact of Mediated Cognitive Strategies on the Reading Comprehension Performance and Selfefficacy of Palestinian-Arab Middle School Students with LD: A Mixed-Methods Research

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## **BOSTON COLLEGE**

## Lynch School of Education

Department of Teacher Education, Special Education, and Curriculum and Instruction

Curriculum and Instruction:

Critical Pedagogy, Diversity and Social Justice

## THE IMPACT OF MEDIATED COGNITIVE STRATEGIES ON THE READING COMPREHENSION PERFORMANCE AND SELF-EFFICACY OF PALESTINIAN-ARAB MIDDLE SCHOOL STUDENTS WITH LD: A MIXED-METHODS RESEARCH

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## ABSTRACT

The Impact of Mediated Cognitive Strategies on the Reading Comprehension Performance and Self-efficacy of Palestinian-Arab Middle School Students with LD:

## A Mixed-Methods Research

The purpose of this mixed-methods research was to examine the impact of mediated cognitive strategy intervention on the reading comprehension and self-efficacy of Palestinian-Arab middle school students with learning disabilities. Eighteen seventhgrade students with LD who were placed in two self-contained special education classrooms and their two special education teachers participated in this experiment for eight weeks. A multi-cognitive strategy reading comprehension intervention (the Five Mediated Cognitive Strategies: 5MCS) based on existing cognitive strategy models was introduced. The two classrooms were divided into two conditions: a) an Extended Condition, in which students received the cognitive strategy instruction for the full length of the intervention while using culturally relevant texts at the fourth grade level, and b) the Reduced Condition where students received four weeks of traditional instruction followed by the cognitive strategy instruction combined with the same texts that were provided for the Extended Condition. All students were assessed for their vocabulary and comprehension at pre and post intervention using a standardized measure and researchermade weekly tests for their comprehension. Further, the students were assessed for their self-efficacy in reading using self-report surveys at three times and focus group interviews at pre and post intervention.

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Repeated-measures ANOVA results indicate that both groups improved their vocabulary and comprehension from pre to post intervention on both standardized and researcher-made comprehension measures. However, the Extended Condition achieved statistically significant gains in comprehension at posttest, whereas, the Reduced Condition achieved significant gains in vocabulary at posttest. No significant differences were found between the two conditions by time. Mixed results were revealed for selfefficacy in reading comprehension. Students who were identified as good decoders reported an increase in their self-efficacy from pre to post intervention, whereas students with poor decoding abilities reported a declined self-efficacy at post intervention. Thematic analysis of interviews with the participating teachers revealed that they considered themselves and their students to have benefitted from the 5MCS intervention. Implications for the study are discussed and recommendations for further investigations are provided for policy makers and educators.

## To Jihan,

Whose encouragement, patience, and love surrounded me all the way during my

# academic journey

To my beautiful children Majd, Shahd and Zayd,

You have been the light of my inspiration

And to my mother, whose prayer and continuous love was my reward (Rest in Peace).

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## CHAPTER I

## INTRODUCTION

It has been widely argued by researchers in the western countries that teachers who teach large classes of students with various abilities, including students with learning disabilities (LD), mostly fail to provide sufficient individual attention, continuous feedback, appropriate teaching strategies, and opportunities for student engagement; yet, at the same time, they are accountable to raise all students' achievement (Anderson, 2006; Jackson, Harper & Jackson, 2001; Lacey, Layton, Miller, Goldbart & Lawson, 2007; Orkwis & McLane, 1998; Pisha & Stahl, 2005; Vaughn & Linan-Thompson, 2003). It is even more challenging for teachers to teach students with LD once they have transitioned from the lower grades of the primary school stage to higher grades at the middle school level (Hidi & Harackiewicz, 2000). At the middle school level, the ability to read and comprehend abstract concepts that appear intensively in materials in the various content areas becomes overwhelming to most students with LD (Mastropieri, Scruggs & Graetz, 2003; Vaughn, Levy, Coleman & Bos, 2002). In fact, reading comprehension is one of the main challenges for students with LD (Vaughn et al., 2002).

Students' difficulties in reading comprehension can be attributed to various factors. Sometimes the difficulties are caused by a lack of fluency in word recognition (Calhoon, 2005; Williams, 2006). However, many children experience difficulties comprehending what they read in spite of their fluency in oral reading, due to cognitive processing problems, including working memory limitations, lexical processing deficits, inadequate inference making, and poor comprehension monitoring (Gersten, Fuchs,

Williams & Baker, 2001; Greenway, 2002). Other reasons may include limited vocabulary (Ouellette, 2006), difficulty attending to the meaning of the text and identifying the main ideas, and lack of connecting novice information to previously known facts (Bos & Vaughn, 1994; Mastropieri et al., 2003).

Other researchers (e.g., De Corte, Verschaffel & De Van, 2001; Gajria, Jitendra, Sood & Sacks, 2007; Williams, 2006) categorize the struggles of students in reading comprehension into two broad factors: a) student-related factors, and b) text-related factors. Student-related factors may include, but not limited to, decoding skills, prior knowledge, and affective variables, such as, motivation and self-efficacy. The text-related factors may include, but not limited to, type of text whether it is narrative or informative, the complexity of the micro- and macrostructure of the text, and the amount of information provided in the text. A consequence of reading comprehension difficulties for many low performing students with LD, is that it will affect their ability in processing, not only reading comprehension in language arts, but also comprehending abstract concepts in mathematics (Baker, Gersten, Dimino, & Griffiths, 2004), understanding science terminology (Gajria et al., 2007), and comprehending social studies' abstract vocabularies (Lederer, 2000).

Further, researchers have reported that children, including students with LD, tend to lose interest in learning school subject matters as they transition to middle school; and, thus, their motivation decreases steadily as they transition from one grade to another (Cordova & Lepper, 1993; Guthrie & Davis, 2003; Krapp, 2002, Nelson & Manset-Williamson, 2006; Wentzel & Watkins, 2002). Unfortunately, the motivational problem

is another primary explanation for unsatisfactory academic performance (Hidi & Harackiewicz, 2000). This decline in motivation as children grow older has been attributed to their deterioration of perceived value beliefs for content, tasks, and activities related to most school subject matters (Krapp, 2002). Other researchers have attributed the lack of students' motivation to engage in classroom activities to their perceived belief that their teachers care less about them (Wentzel, 1997; Wentzel & Watkins, 2002). Others associated the lack of motivation in learning to the lack of appropriate instructional texts to pique students' interest "especially when the reading materials of appropriate difficulty are viewed as being childish and not suitable for their own age" (Spadorcia, 2005, p. 33).

## Research Focus & Problem Statement

The aforementioned findings and challenges resonate with educators in other countries around the world, who share similar groups of students, including children with LD. The Palestinian-Arab children with LD who live in Israel are not an exception in this case. On the contrary, they are served far less well compared to their counterparts from industrial western countries, due to a combination of several complex factors that pose remarkable challenges to the Palestinian local education system. These factors may include, but are not limited to, overcrowded classrooms, unprepared teachers, understaffed schools, inappropriate learning material, and lack of adequate related services under an institutionalized Israeli-dominant inequities system (Coursen-Neff, 2005; Dakwar, 2005). The evidence for such unfortunate conditions can be easily observed in the latest international academic comparisons outcomes. The Palestinian-

Arab children, as part of the minority students of Israel, participated in the 'Program for International Student Assessment' (PISA) in the year 2006 and in the 'Progress in International Reading Literacy Study' (PIRLS) in the same year. In both tests these children's scores were significantly lower than their Israeli-Jewish counterparts of the same age (Ministry of Education, 2007).

The target students for this study are Palestinian-Arab middle school students with LD. These children are being taught under traditional conditions, with many deficits associated with lack services provided by the country in which they live. Consequently, their achievements in all international tests are remarkably lower compared to their Israeli Jewish counterparts.

#### The Palestinian Education Context

Palestinian-Arab children with LD who live in Israel are being taught mostly in crowded classrooms, many of which have 40 children or more in primary schools (Coursen-Neff, 2005). Under such conditions, general education teachers find it difficult to attend to these students' educational needs, especially, when the current teaching methods implemented in such schools rely heavily on traditional teaching methods, where the teacher is the only authority in the classroom, and students are perceived as passive recipients of knowledge (The Follow-Up Arab Committee on Arab Education: FUCAE, 2004).

International research has shown that traditional classrooms are less responsive to students with disabilities, particularly, because conventional teaching methods mostly depend on lectures and emphasize memorization, drilling, and rote learning, while falling

short on adequately addressing the needs of students with LD (Dunn & Dunn, 2008; McMaster, Fuchs & Fuchs, 2007). Consequently, Palestinian-Arab students with LD in these classes are either being ignored by the general education teachers who lack the necessary knowledge and tools to strategically teach them, or they receive minimal special education services. Such services may include an in-class assistant where the special education teacher works closely with some students, while the regular education teacher is lecturing to the whole class. Other special education services may include pullout instruction where a small group of students with LD are being taught in mostly unequipped resource rooms for a few hours per week (FUCAE, 2004).

Palestinian-Arab children are part of the underserved minority group within their own country, due to a systematic institutionalized discrimination policy that accumulated over the past 60 years (Coursen-Neff, 2005; Human Rights Watch, 2001; Mossawa Center, 2006, Sykkuy, 2007). These children, according to Coursen-Neff (2005), are remarkably underrepresented in schools compared to their counterparts in the Israeli side, with a school dropout rate that exceeds three times the dropout rate of the Israeli Jewish students, and they are less likely to pass the national competency exam which is a necessary step for obtaining a high school diploma.

According to the Human Rights Watch (2001), the percentage of Palestinian-Arab children with disabilities make about 30% of the total population identified with disabilities within the State of Israel, despite the fact that the Palestinian minority's population is only 20% of the larger population. Yet, Palestinian special education programs receive only 12% of the overall allocated budget for special education in Israel

(Human Rights Watch, 2001). Further, the schools' structural conditions for student learning are dramatically lower compared to their Israeli counterparts. These schools, according to the Human Rights Watch (2001), are poorly built, badly maintained, or simply unavailable, and often offer fewer facilities and educational opportunities than are offered other Israeli children. Coursen-Neff (2005), who conducted a follow up study on behalf of the 'Human Rights Watch', states the following:

"According to official data released as recently as late 2004, the Israeli government continues to allocate less money per head for Palestinian Arab children than it does for Jewish children. Arab schools are still overcrowded, understaffed, and sometimes unavailable. On average, they offer far fewer facilities and educational opportunities than those offered to other Israeli children. The greatest inequalities are found in kindergartens for three- and four-year olds and in special education." (p. 750).

The following three reports, on the achievement of the Palestinian-Arab students in international studies, are only few of the manifestations on the inequity between citizens of the same country in education. Palestinian-Arab children in Israel participated in the Program for International Student Assessment (PISA) in the years 2000 and 2006 as part of the subpopulation of Israeli students. The PISA, which is administered once every three years, collects data on a representative sample of 15-year-old students from nearly one third of the world's countries, for the purpose of measuring students' performances in mathematics, science, and reading comprehension (OECD, 2007). In this test, Israel performance was ranked below average compared to all countries of the

Organization for Economic Co-operation and Development (OECD) (OECD, 2007). The analysis of within–country results indicates a significant performance gap in all subtests, specifically in comprehension, between Palestinian-Arab students and their Israeli-Jewish counterparts, in favor of the latter group (Ministry of Education, 2007).

In addition to PISA, Israel participated in the Progress in International Reading Literacy Study (PIRLS) in two languages, Hebrew for Jewish Israeli students and Arabic for Palestinian-Arab students at the fourth grade level (Mullis, Martin, Kennedy & Foy, 2007). Israel with a score of 512 was ranked in the 31<sup>st</sup> place among the 47 participating countries and authorities which places it below the international average score (Mullis et al., 2007). The results of this test, also, indicate a significant gap between the Palestinian-Arab students and their Israeli Jewish counterparts in favor of the latter group. To illustrate the picture in numbers, a closer look at the in-between variance of the same country shows that the Israeli students achieved an average of 548 points, which ranks them in the 11<sup>th</sup> place, while the Palestinian students, on the other hand, achieved only a 428 average score, which ranks them in the 40<sup>th</sup> place (Ministry of Education, 2007). Obviously, these alarming statistics, which evolved throughout the years due to the Israeli mandated educational system, illuminate the systematic inequity among Israel's own citizens.

The latter two studies were confirmed by the latest results for Palestinian -Arab children in the Trends in International Mathematics and Science Survey (TIMSS) 2007. This test is administered every four years for nearly 60 participating countries in the world, since 1995 at the fourth and eighth grade levels. The results of the Palestinian

Arab minority students demonstrate another widening gap in comparison with the Israeli Jewish students (Ministry of Education, 2008).

In addition to the aforementioned circumstances, Palestinian-Arab children with LD, like any other group of students with LD, when transitioning from primary schools to middle schools are challenged by the complex content-area and language arts subjects, where the reading comprehension component constitutes a major portion of their learning (Mastropieri et al., 2003; McMaster et al., 2007). These students reach middle and high school levels with a significant achievement gap between them and their non disabled classmates (Hempenstall, 2005; Swanson & Hoskyn, 2001). Further, these children, in many cases, lack the necessary skills to communicate their social and academic needs (Hempenstall, 2005).

Middle and high school children with LD in the USA, for example, can benefit from ample choices of textbooks developed exclusively for older readers who struggle with their class required curriculum. Such textbooks are referred to as high interest low level (Spadorcia, 2005) or high-interest easy-reading texts (Graves & Philippot, 2002). These textbooks are designed to provide appropriate levels of success and challenge while, at the same time, they contain topics of interest to the readers (Spadorcia, 2005). Moreover, it is argued that when children feel that their realities are reflected in the curriculum, and their culture and lived experiences are considered, they tend to be more engaged in learning and, thus, experience more success in school (Abu-Rabia, 1996; Hunsberger, 2007; Spadorcia, 2005).

These textbooks, however, are not accessible for Palestinian-Arab schools in Israel. This can be due to a substantial shortage in appropriate educational and pedagogical materials for all students, including those for struggling readers. When such textbooks are available, they are however, mostly culturally insensitive and unsuitable for the students' needs (Abu-Rabia, 1996). In fact, most of the educational materials used for the Palestinian-Arab students in Israel are translated word-for-word from materials made for the Israeli- Jewish educational system (Dakwar, 2005).

Given these realities for Palestinian-Arab students with LD, and based on previous international data (e.g., McMaster et al., 2007), it is highly challenging for teachers to meet their needs relying solely on traditional teaching methods, where the learning mode is a one-way teacher-centered approach. Therefore, students with LD may benefit from an educational approach that is better matched to their unique situation. Such an approach should consider their cognitive development and academic needs. It has been argued that a well designed cognitive strategy instruction that fosters students' independent and collaborative work (Palincsar, 1998; Palincsar & Brown, 1984), with an appropriate selection of educational materials (Spadorcia, 2005), can substantially increase students' reading comprehension achievement. Consequently, it will positively impact the learning engagement and self-efficacy skills of these students (Guthrie & Davis, 2003; Slater & Horstman, 2002).

Responding to the challenges that are facing teachers who work with middle school students struggling with reading comprehension, including Palestinian-Arab students with LD, researchers have investigated best practices in schools and proposed

various approaches that were empirically validated and yielded positive results. Among such approaches, cognitive strategy instruction has been found to be highly effective (e.g., Pressley, 2006; Slater & Horstman, 2002). Cognitive strategy instruction interventions were designed and introduced to teachers for the purpose of helping students with various abilities at the middle and high school levels to become better comprehenders of complex content area content. Some of the most promising cognitive strategy practices that were developed exclusively for struggling readers to improve their comprehension performance are discussed in the next section.

#### Cognitive Strategy Instruction

The current literature increasingly provides scientific evidence of the positive impact of mediating strategy instruction on the reading comprehension achievement of students with LD (e.g., Allen, 2003; Alfassi, 2004; Bos & Vaughn, 1994; De Corte, Verschaffel & De Van, 2001; Maheady, Harper & Mallette, 2000; Palincsar, 1986; Palincsar & Brown, 1984; Pressley, 2000, 2006, Slater & Horstman, 2002). One promising approach that has been empirically validated for students with LD is the use of class-wide peer mediated learning strategies (PALS), in which students work collaboratively to learn and support one another (Fuchs & Fuchs, 2005; Greenwood & Delquadri, 1995; Maheady, Mallette & Harper, 2006; Mastropieri, Scruggs, Mohler, Beranek, Spencer, Boon & Talbott, 2001). In such an approach, students are encouraged to reciprocally teach one another and collaboratively unpack new passages where positive social exchanges and learning engagement are continuously enhanced (Mastropieri et al., 2001; Slater & Horstman, 2002). There are several types of well documented classwide peer mediated learning strategies for reading comprehension (Liang & Dole, 2006; Maheady et al., 2006). The George Peabody College Peer-Assisted Learning Strategies (PALS) model (Fuchs, Fuchs, & Burish, 2000; Maheady et al., 2006), and Reciprocal Teaching (RT) in particular (Greenway, 2002; Hashey & Connors, 2003; Kelly, Moore, Tuck, 1994; Palincsar & Brown, 1984; Slater & Horstman, 2002; van Garderen, 2004), have yielded positive results for students with LD at all grade levels.

These two models were mainly designed for struggling students who have difficulties in reading. Particularly, PALS reading was designed to develop students' reading fluency and comprehension (Dion, Fuchs & Fuchs, 2005), while RT was originally designed for middle school students with LD who struggle with reading comprehension (Palincsar & Brown, 1984). In an RT approach, students are taught to strategically monitor their reading comprehension while they are engaged in the reading process (Slater & Horstman, 2002). Students in RT are encouraged to use multiple strategies that are used by competent readers, including generating questions, clarifying, summarizing, and predicting (Palincsar & Brown, 1984). RT allows for a positive collaboration between students and their teacher as well as students and their peers in the classroom (Palincsar, Brown & Martin, 1987). Such collaboration would eventually increase students' engagement in the learning and provide them with multiple opportunities for social interactions with their classmates (Klingner & Vaughn, 1996; Palincsar, Brown & Martin, 1987).

PALS which was partially designed based on RT concepts and the Cooperative Integrated Reading and Comprehension (CIRC) model was initially designed for

elementary students with LD (Fuchs et al., 2001), but recently it was modified and successfully implemented at the middle and high school levels (see e.g., Calhoon, 2005; Fuchs, Fuchs, Mathes & Martinez, 2002; Mastropieri et al., 2003; Mastropieri, et al., 2001). In addition to reading comprehension, PALS emphasizes the role of oral reading fluency in which all activities start by partners orally reading passages. The advanced peer always starts first by reading the text for about five minutes; then the less advanced partner in the pair is set to follow and read the same passage.

The uniqueness of PALS, in addition to the reading fluency component, is that it is a structured model, with explicit predefined roles for each student in the tutor-tutee interaction. PALS explicitly instructs tutors in each pair on how to response and provide feedback to the tutee in the interaction. Further, PALS is operated only in the form of a one-to-one peer interaction. Such framework of having one-to-one interaction between students allows for: (1) frequent opportunities for students to respond; (2) facilitates immediate partner's feedback; (3) increases academic engagement time, and (4) finally facilitates students' social engagement and support (Fuchs et al., 2002).

RT strategies, on the other hand, are more flexible and less structured in design. Their flexibility allows for various grouping methods in the form of pairs and small group interactions, especially when the possibility of constructing pairs is not available (Palincsar & Brown, 1984). Further, RT, in contrast to PALS, has no manuals that teachers or students should strictly follow when engaged in activities, which gives much more space for teachers to adjust their strategies based on the classroom's context. For example, in the recent years, researchers have modified RT and added more strategies

that can be utilized for the purposes of the class, such as 'perspective taking' in which a learner attempts to consider the perspective of a teacher in order to deeply comprehend the reading materials (Palincsar & Brown, 1984). RT is different than PALS in defining the teacher's role. The teacher in RT is fully engaged in a shared dialogical process with the students and continuously challenging them to critically think about their metacognitive reading processes (Doolittle, Hicks, Triplet, Dee Nicholas & Young, 2006). Thus, PALS is different compared to RT in that the role of reading fluency receives more emphasis and the roles of each student are predefined in the interaction.

Middle school students with LD can substantially benefit from a carefully designed instructional approach that suites their affective interest and meets their educational needs. Therefore, by using a combined modified model of RT and PALS with middle school students with LD, this model will allow for: (a) flexible student grouping and a more adult-student and student-student interactions in constructing and sharing knowledge; (b) an integration of reciprocal reading fluency between peers, which is a strength aspect for PALS; (c) an opportunity for exchanging and monitoring comprehension strategies mediated by peers, and (d) an adult mediated dialogical interaction, in the form of a whole class explicit strategy scaffolding, which is a strength of RT.

The aforementioned studies that logically support a combined modified model of RT and PALS, however, were developed and validated for English language contexts in the U.S. and the west. The instructional model of traditional reading instruction in Palestinian-Arabic classes is remarkably different than cognitive strategy instruction used

in the U.S.A. The main emphasis of the Palestinian-Arabic literacy lesson is geared toward prescribed text teaching. In these contexts, teachers are required to cover a certain number of curriculum texts each semester. Therefore, teachers have to spend most of their instruction on elaborating on vocabulary, content, and rhetorical sets of prestructured questions in each text. Further, Palestinian-Arab teachers are not well familiar with reading cognitive strategy instruction and rarely teach any cognitive strategy in class. Therefore, it would be of value to examine these approaches, especially a modified version of cognitive strategy instruction that incorporates basic elements of both RT and PALS for middle school students with LD within an Arabic language context.

## Previous Studies within the Arabic-Language Context

Current research on the impact of strategy instruction on the reading comprehension of Arabic speaking students at the middle school levels is remarkably scarce. In fact, an electronic search of 'ERIC', 'PsychINFO', and 'Education Research Complete' databases, using various descriptive terms including 'strategy instruction', 'reading comprehension', 'learning disabilities', and 'Arabic or Arabic language' yielded no results. On the other hand, by searching the same databases for topics with any of the descriptors 'Arabic language' and 'reading comprehension' combined, regardless of type of instruction and students' grade level, the results showed many published studies in the field (e.g., Abu Rabia 1995, 1997, 1998, 1999, 2001, 2002; Saiegh- Haddad, 2003, 2004, 2005).

The topics that have been researched thus far, with varying degrees of connectivity with LD, covered the following areas: (a) oral reading fluency of Arabic

speakers (Abu-Rabia, 1998); (b) the effect of phonological and decoding skills on reading (Saiegh- Haddad, 2003) and the effect of vowels on reading comprehension of native Arabic speakers (Abu-Rabia, 1997, 1999); (c) the relevance of oral reading to reading comprehension (Saiegh- Haddad, 2003); (d) the effect of orthography on reading within Arabic language contexts (Abu-Rabia & Siegel, 1995); (e) the effect of word recognition and basic cognitive processes on reading among reading-disabled and 'non disabled' readers (Abu-Rabia, Share & Mansour, 2003); (f) the role of morphological structures in visual word recognition in Arabic language contexts (Abu-Rabia & Awwad, 2004) and reading in a root-based morphology language within Arabic and Hebrew contexts (Abu-Rabia, 2001, 2002); and (g) the effect of morphological and diglossic factors on reading skills in Arabic (Saiegh- Haddad, 2005). Obviously, none of these studies address the impact of strategy instruction on the reading comprehension of students with LD at any grade level. Nor do these studies emphasize the social dimensions that are related to learning.

Therefore, this study was designed to add a richer dimension to the emerging literature on strategy instruction, by providing new evidence on how mediated strategy instruction impacts the reading comprehension and self-efficacy of Palestinian Arabicspeaking students with LD at the middle school grade levels. Further, the intent for this study was to inform teachers, educators, and policy makers who work and provide services to Arabic-speaking students with LD on the various approaches to enhance reading comprehension and maximized learning outcomes.

#### The Current Study

The purpose of this study was to investigate the impact of mediated cognitive strategy instruction on the reading comprehension performance and self-efficacy of Palestinian-Arab middle school students with LD. For the purpose of this study, a modified cognitive strategy instruction package, based on RT and PALS models and sociocultural principles, was developed. This modified strategy package, the 'Five Mediated Cognitive Strategies' (5MCS) was centered on the use of the following strategies: predicting, questioning, investigating, schemata visualizing, and summarizing the main ideas. Following Pearson and Gallagher's (1983) 'Gradual Release of Responsibility Model of Instruction' the 5MCS was first introduced, modeled, and mediated by the teacher. Then, gradually students reciprocally worked together, in small groups of threes, and claimed responsibility in applying all strategies.

## **Research Questions**

This study was informed by the following questions:

- Does instruction in the mediated cognitive strategy (5MCS) when using culturally relevant high-interest/low-level texts improve the reading comprehension of Palestinian-Arab middle school students with LD:
  - a. when assessed by a standardized measure?
  - b. when assessed by a researcher made measure?
- Does instruction in the mediated cognitive strategy (5MCS) when using culturally relevant high-interest/low-level texts result in improved student's self-efficacy for Palestinian-Arab middle school students with LD?

- 3. How does reading using culturally relevant high-interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?
- 4. How do the teachers and students value the 5MCS practices that differ from traditional culture-based instructional procedures?

### Methodology and Design

The current tendency in social sciences research encourages the use of multiple methods to capture humans' phenomena from different perspectives (Creswell, 2003; Klassen & Lynch, 2007). Because this study was heavily dependent on the use of socially constructed collaboration work among peers, a mixed-methods approach was employed. Mixed methods are defined as single studies that include both quantitative and qualitative phases (Johnson & Onwuegbuzie, 2004). A mixed methods approach offers an insider perspective on how children who are involved in the study interact under certain conditions (Klassen & Lynch, 2007).

Vygotsky (1978) advocated that psychological processes emerge in contextualized, wholistic activities. Human behaviors such as learning engagement and self efficacy occur in social contexts (Klassen & Lynch, 2007; Palincsar & Klenk, 1992). Such behaviors can be qualitatively observed. Qualitative methods are characterized by the ability to study behaviors within their natural settings, attempting to interpret phenomena in terms of the meanings people bring to them, and based on emergence of data, rather than being prefigured (Denzin & Lincoln, 2000). Thus, by applying a mixed methods approach in this study, qualitative and quantitative sources of data would
provide an in-depth understanding to the cognitive and social aspects of learning for Palestinian-Arab middle school students with LD.

This quasi-experiment research design, which includes a group of 18 seventhgrader students who were engaged in an eight-week intervention, included qualitative and quantitative measures and data collection procedures, as well as data analysis procedures. The intervention was centered on the application of the "Five Mediated Cognitive Strategy" (5MCS) explained in chapter three. The data collection included the following measures:

- 1. Students' performance in reading comprehension was pretested to establish a baseline measure, midpoint-tested after one month, and post-tested to measure improvement in the comprehension performance. At one month later, upon the completion of the study, a delayed test was scheduled for the purpose of measuring strategy maintenance. The delayed test was not performed due to unexpected delay in initiating the intervention which resulted in a very limited time available between the posttest and the end of the school year. The standardized test was Arabic language test that was validated for Jordanian Arab school children who share common background to the population of this study.
- 2. Students' performance in reading comprehension using researcher-made weekly tests were administered seven times during the intervention, starting at the end of week one and ending at the end of week seven. The ten item test assessed vocabulary learning and comprehension in the form of recall.

- All students who were engaged in the 5MCS activities were observed periodically to obtain data on their application of the 5MCS. The collected data included direct observations by the researcher and samples of students' daily work.
- 4. A self-efficacy self-reporting Likert survey, which measures components of students' self-efficacy, was administered three times during the intervention:

  a) at the beginning of the intervention, b) at the mid-point phase (after four weeks), and c) at the end of the intervention. In addition to the self-reporting survey, two focus-group interviews were conducted for the purpose of validating data derived from the self-reporting survey. The first interview was conducted at the first week of the intervention, while the second interview took place in the last week of the intervention.
- 5. To ensure that all participants, teachers and students, involved in the study followed the same procedures, both conditions were observed every morning during the intervention time. One Condition was observed in the first period (8:00- 8:45 a.m.), while the other condition was observed in the second period (8:50- 9:35). A checklist that consists of the main components of the 5MCS activities and procedures was employed by the researcher during the observations.
- A semi-structure interview was conduct each of the two teachers individually at the end of the intervention. The interviews focused on teachers' value of the 5MCS and its impact on students' performance during the intervention.

# Assumptions

The following assumptions were made for this study:

- The teachers who were involved in this study had no prior training on strategy instruction for reading comprehension in special education. Specifically, the teachers had no previous training in using predicting, summarization, question generating, clarifying, and schema visualization strategies, and thus never used such strategies as a whole approach with their middle school students with LD.
- 2. Students who were involved in the study would show improvement in their reading comprehension performance upon completing the 5MCS package.
- Students would demonstrate improved self-efficacy behaviors/attitude in their school learning upon engaging in the 5MCS activities.

#### Summary

Acquiring reading comprehension skills is important for all students, especially for middle school students with LD, due to the increasing demands of the curriculum and complexity of texts. Most students with LD are challenged by the difficult texts and increasing demands of the educational system, especially, upon their transition from primary to middle school grades. Students with LD are considered passive learners, they have difficulties regulate their learning, monitor their reading, and face difficulties applying appropriate reading comprehension strategies. Their lack of strategic learning skills impacts their school related performance, and thus creates additional issues, such as, motivational and engagement problems. Researchers have investigated how successful readers become competent comprehenders. Competent readers are good strategically; they apply not only one strategy while they read, but rather multiple cognitive strategies and constantly keep monitoring their reading. Cognitive strategy instruction has been found to be effective. Multiple strategies can be more effective than one single strategy because reading comprehension calls upon a variety of cognitive skills. Thus, students with LD can benefit from mediated cognitive strategy instruction, appropriate material selection, and social learning. In the past three decades, several approaches were developed and implemented in the area of reading comprehension for students with LD and found to be effective, such as, peer-assisted learning strategies (PALS) and reciprocal teaching (RT). Such frameworks, however, were developed and validated mostly for native and none native English language speakers in the USA and the west.

Palestinian- Arab middle school students with LD can benefit from a combined multiple cognitive strategy instruction with an appropriate selection of socially and culturally relevant materials. The Five Mediated Cognitive Strategy (5MCS), a modified strategy package which combines elements of PALS and RT, can be an appropriate framework for Palestinian-Arab middle school students with LD. The proposed 5MCS package requires an active teacher and students' role exchange, as opposed to traditional teaching methods. Further, it allows for ample opportunities for social interaction among peers. In addition, the 5MCS package provides relevant materials that are contextually and culturally responsive to students' lived experiences. Finally, it helps students to

monitor their own reading, and thus it improves their comprehension performance and self-efficacy.

# CHAPTER II

# LITERATURE REVIEW

The ability to read is critically important for the academic success of students and for obtaining the necessary skills to succeed in life (National Reading Panel, 2000; RAND Reading Study Group, 2002). Reading does not involve only phonological awareness, decoding skills, and visual word recognition; the end goal for reading is intact comprehension (Antoniou & Souvignier, 2007; Gajria et al., 2007; Palincsar & Brown, 1984, 1988; Ouellette, 2006; Sweet & Snow, 2003). For many children, especially for students with learning disabilities (LD), problems associated with reading comprehension are highly alarming (Fuchs, Fuchs, Thompson, Svenson, Yen, Al Otayba et al., 2001; Swanson, 1999). These problems may affect their performance in other school subject areas. Failure in associated academic subjects may directly affect students' self-efficacy, which in turn has an impact on student's engagement and performance in learning.

Since the influential research of Durkin (1979) where he reported on nearly a complete absence of comprehension strategy instruction in literacy classrooms, an ample body of research has introduced many cognitive strategy-based interventions for the purpose of overcoming this issue. Many of these strategies targeted struggling readers, and can be found for all grade levels. Students with LD at the middle school level, in particular, were among those targeted.

The purpose of this chapter is threefold. First, it is to provide a description of conceptual and empirical studies in the area of reading comprehension strategies available for students with LD. Second, is to outline the values, implications, and

outcomes of influential studies conducted on cognitive strategy instruction about middle school students with LD. Third, the aim of this chapter is to introduce a new pedagogical model, the 'Five Mediated Cognitive Strategies' (5MCS), which is situated within a sociocultural model and self-efficacy theory, and based on leading current practices within the field, namely Peer-assisted learning strategies (PALS) and reciprocal teaching (RT).

This literature review is divided into six parts. The first section begins with a description of the reading comprehension process from a socio-cultural perspective. The second section will discuss some of the key issues associated with the challenges that students with LD encounter in reading comprehension. Further, the effect of the transition from elementary to middle school level on the self-efficacy of students with LD will be discussed. Section three will provide an overview of the major synthesis that examined empirical research on cognitive strategy instruction in reading comprehension within the past four decades. Section four highlights the role of mediation as a bridging tool between the knowledge and the learner in the area of reading comprehension. Section five discusses some of the landmark strategy instruction models that have been implemented with struggling readers, namely PALS and RT, will be examined from a sociocultural perspective. Finally, in section six, a new model, the 'Five Mediated Cognitive Strategies' (5MCS), is introduced and linked to current best practices as a cognitive strategy instruction model to support the reading comprehension and selfefficacy for Palestinian-Arab middle school students with learning disabilities.

Reading Comprehension and Competent Readers

The following section describes the reading comprehension process from a sociocultural perspective. It includes a brief review of what reading comprehension is as defined by the National Reading Panel (2000) and the RAND Study Group (2002) reports, and the landmark study conducted by Palincsar and Brown (1984). Further, it highlights some of the major findings on how competent readers process and apply reading strategies.

## Reading Comprehension

Reading is viewed as a purposeful strategic process (Spires, Gallini & Riggsbee, 1992) that requires a full range of cognitive and meta-cognitive activities including summarizing, predicting, questioning, clarifying, visualizing, and self monitoring and checking for understanding while reading (Palincsar & Brown, 1984). The National Reading Panel (2000) defines reading comprehension as a reciprocal process of constructing and extracting meaning between the reader and the written texts, based on a complex coordination of a number of interrelated sources of information (executive summary, 4-5). Thus, according to this definition, reading comprehension is a purposeful activity that requires the active interaction between the reader and the information conveyed explicitly or implicitly in the text. The reader, then, uses this knowledge to make a new meaning of the text and to communicate his or her new understanding with others within a given context (NRP, 2000).

This understanding of reading as defined by NPR (2000) is shared by other researchers (e.g., Jennings, Caldwell & Lerner, 2006; Manset-Williamson & Nelson, 2005; Neufeld, 2005; RAND Reading Study Group, 2002). Jennings et al. (2006) contend

"comprehension is the essence of reading (p. 15)." Manset-Williamson and Nelson (2005) state that "comprehension is reading (p. 60)." Neufeld (2005) argues that comprehension involves two important features: a) being actively involved with the text, and b) using appropriate background knowledge to interpret the text.

The RAND Reading Study Group (2002), in its report, expands the understanding of reading and conceives learning and literacy as cultural and historical activities. The authors of the report reason this view on the nature of learning to read, not just because it is being acquired through social interactions, but also because such an activity represents "how a specific cultural group or discourse community interprets the world and transmits information" (executive summary, p. xvi). Thus, according to this understanding, the RAND Reading Study Group (2002) contends that the reading comprehension occurs within a sociocultural context and that it consists of three elements: the reader, the text, and the activity. These elements interrelate in reading comprehension "within a larger sociocultural context that shapes and is shaped by the reader and that interacts with each of the elements iteratively throughout the process of reading" (RAND Reading Study Group executive summary, p. xiii).

The RAND Reading Study Group (2002) in their 'heuristic model for thinking about reading comprehension' conclude that the reader brings to the reading activity his or her cognitive experiences (e.g., memory, inferential ability), motivation (e.g., interest in the content being read and self-efficacy), knowledge (e.g., vocabulary and content knowledge), and lived experiences affected by cultural and social norms. While reading, the reader constructs different representations of the written material. Those

representations help the reader understand the text at various levels. The type of reading activity involves a number of purposes for the particular task, previous knowledge about the content that is being performed, and the outcomes of conducting the activities; all of which occur and interact within a given context that might change throughout the reading process (RAND Reading Study Group, 2002). For example, the reader, while reading, may change his or her purpose for the reading due to emerging information that raise new question about the initial purpose which was preset for this particular activity. Thus, processing any given text, as described by the RAND Reading Study Group (2002), requires decoding ability, higher level linguistic and semantic processing, and self monitoring for comprehension.

Palincsar and Brown (1984) unpack the process of comprehension monitoring and describe six main functions that are important for reading comprehension to take place: "(1) understanding the purposes of reading, both explicit and implicit; (2) activating relevant background knowledge; (3) allocating attention so that concentration can be focused on the major content at the expense of trivia; (4) critical evaluation of content for internal consistency, and compatibility with prior knowledge and common sense; (5) monitoring ongoing activities to see if comprehension is occurring, by engaging in such activities as periodic review and self interrogation; and (6) drawing and testing inferences of many kinds including interpretations, predictions, and conclusions" (Palincsar & Brown, 1984, p. 120).

Much of the recent research on reading comprehension was conducted on the various strategies used by competent readers (Duke & Pearson, 2002; Pressley, 2000;

Sencibaugh, 2007; Williams, 2006). These strategies were developed and implemented in the field for the purpose of assisting struggling readers to cope with their difficulties in comprehending instructional texts in the various content areas. Therefore, understanding the nature of competency in reading and characteristics of competent readers allows for a deeper insight about what should be considered for reading instruction.

#### How Competent Readers Read

Competent readers, also referred to as good readers, proficient readers, and expert readers, are described by researchers as strategic, purposeful, thoughtful, motivated, and self-monitored readers (Guthrie, Wigfield, Barbosa, Perencevich, Taboada, Davis, et al., 2004; Sencibaugh, 2007; Williams, 2006). Sencibaugh (2007) noted that competent readers, unlike poor readers, acquire and master comprehension strategies gradually through practice and exposure to print in multiple opportunities in their early childhood. Williams (2006) added that competent readers continue to develop reading comprehension skills, often an aware of their strategies, as they learn more complex tasks meaningfully and purposefully.

In addition to recognizing words rapidly and accurately while reading, competent readers are required to monitor and regulate their comprehension according to the reading goals (Ouellette, 2006; Kolic-Vehovec & Bajsanski, 2007). The regulation is evident in the way that readers attempt to plan, monitor, evaluate and use information available or embedded in the text, in order to make sense of what they read. Kolic-Vehovec and Bajsanski (2007) conceive that comprehension monitoring is a process in which the reader periodically examines her or his comprehension during reading. It is also

considered an important aspect of reading competency, which "directs the reader's cognitive processing as he/she strives to make sense of incoming information" (Kolic-Vehovec & Bajsanski, 2007, p. 198).

Competent readers do not rely on one single strategy only; rather, they perform multiple strategies, and they are able to revise their strategies and modify them simultaneously while reading (Allen, 2003; Duke & Pearson, 2002; Pressley, 2000; Williams, 2006). While reading, for example, competent readers connect the new information with previously stored knowledge to make sense out of the text (Williams, 2006). Further, they keep asking themselves questions and clarify about the content of the text and create visual images of the events in their mind, which facilitates their recall and improves their understanding (Allen, 2003). Allen (2003) adds that competent readers grasp the essence of the text and understand the main ideas through their proficient use of multiple other metacognitive strategies, such as sorting, shifting, reviewing and reorganizing the new information to make a new synthesis.

Further, competent readers are thoughtful readers (Duke & Pearson, 2002). They infer from concrete data and new clues embedded in the text to make useful judgments and speculation about the content (Allen, 2003; Pressley, 2000). In contrast to poor readers, when encountering a new challenging informative text, competent readers derive meaning from text, rely on both text-driven and prior knowledge-driven processes, constructing meaning through existing and previously mastered information, apply flexible use of strategies to monitor, regulate, and maintain comprehension (Alfassi, 2004; Bos & Vaughn, 1994; Pressley, 2000). Pressley (2002) adds that competent

comprehenders depend on inferences at all levels of text's comprehension, ranging from connecting text to background knowledge, different parts of the texts to one another, and known elements to unknowns. In summary, although competent readers often are unaware of their reading strategies, they are, however, strategic, thoughtful, purposeful, and efficacious readers.

Challenges Students with LD Encounter at the Middle School

Students with LD encounter substantial difficulties as they transition to middle school stage. Specifically, they have difficulties in reading comprehension related to understanding text structure, applying appropriate strategies, such as, monitoring, questioning, and grasping the main ideas while reading. In addition, many students with LD have problems associated with self-efficacy and engagement in learning. It is important to situate this discussion around the concepts of self-efficacy and engagement due to their emergence as a result of continuous failure in reading comprehension. *Difficulties in Reading Comprehension* 

The vast majority of students with LD demonstrate significant difficulties learning to read (Sencibaugh, 2007). In fact, some researchers argue that between 80 to 90% of students with LD encounter various challenges that are associated with reading (e.g., Palincsar & Perry, 1995; Vaughn, Levy, Coleman & Bos, 2002). Those difficulties often start with basic decoding processing and reading fluency during the early school years (Calhoon, 2005; Williams, 2006). Later, such tasks become more complex when the reading skills are not merely working on word recognition. Constructing deeper meaning embedded in the text, especially when comprehension becomes the center for learning at all subject matters (Fuchs, Fuchs, Mathes, & Lipsey, 2000). The most challenging task for students with LD, according to Mastropieri, Scruggs and Graetz (2003), lies in their difficulties comprehending what they read compared to their counterparts at their grade level. Specifically, many students with LD have difficulty attending to the meaning of the text, using prior knowledge, making inferences, identifying the main idea, monitoring their comprehension, and remembering facts (Bos & Vaughn, 1994; Mastropieri et al., 2003).

For many children with LD, their poor comprehension skills not only affect their performance in literacy subtasks, but also affect their entire school work, which may potentially extend to their college and work experiences (Mastropieri et al., 2003). Due to their low performance in reading comprehension, most students with LD encounter additional problems in processing mathematic concepts (Baker, Gersten, Dimino, & Griffiths, 2004), understanding science terminology (Gajria, Jetendra, Sood and Sacks, 2007), and comprehending social studies' abstract vocabularies (Lederer, 2000).

Greenway (2002) lists four main components that are associated with struggling comprehenders who have average decoding skills: (a) working memory, (b) inference making, (c) knowledge, and (d) comprehension monitoring. Greenway (2002) reports that, when compared with good comprehenders, even when given the opportunity to look back at the passage, poor comprehenders exhibited limited abilities to infer main ideas from a text. Thus, poor comprehenders, according to Greenway (2002), demonstrate difficulties in inference making. Further, poor comprehenders lack sufficent domain knowledge, which means they struggle with connecting the background knowledge that

make up or lead to the new concepts of a given text. Greenway (2002) argues that those students do not recognize when their comprehension is broken down and tend to not connect new knowledge to previously known information. Further, Greenway (2002) and Wilson and Michaels (2006) attributed these difficulties to the fact that poor comprehenders tend to pay attention to details in the text and not be able to see the main idea.

De Corte et al. (2001) and Williams (2006) add that reading comprehension, in addition to the aforementioned student related factors is affected by text factors. These factors may include the type of the text, whether it is narrative or expository, the complexity of the micro- and macrostructure of the text, and the amount of information provided in the text. Hall (2004) and McCormick (2007) argue that expository texts, also known as informational texts (e.g. textbooks, journal articles, and lab procedures), are more difficult to comprehend when compared to familiar narrative texts (e.g. historical fiction, myths, and fairy tales). Thus, students' failure to comprehend expository texts may lead to negative consequences, such as not learning the required content, low selfefficacy and motivational problems (Hall, 2004).

Upon transition from early elementary grades to middle school grades, students with LD encounter remarkable difficulties associated with understanding the structure of texts, especially, informative texts (Gajria et al., 2007). Gajria and colleagues (2007) list the following five major challenges that students with LD encounter with informative texts: 1) identifying main ideas and supporting details, 2) looking for extraneous

information, 3) drawing inferences, 4) relating novice information to previously existing knowledge, and 5) actively monitoring their reading strategies while reading a passage.

Gajria et al. (2007), Sencibbaugh (2007), and Williams (2006) believe that students with LD lack the necessary skills for understanding both narrative and informative texts, which can be due to various reasons, including limited skills in connecting prior knowledge with different reading texts, difficulties in applying appropriate reading strategies and lack of awareness to what is the appropriate strategy for each text, limited vocabulary, difficulties in reading fluency, limited ability in understanding text structures, and difficulties in comprehending and extracting main ideas from texts.

## Difficulties Associated with Self-efficacy and Engagement

In addition to low achievement in learning, adolescent students with LD, who have struggled with reading throughout their elementary grades, exhibit a different set of emotional needs than younger students learning to read (Guthrie & Davis, 2003). By middle school, most students with LD have made several failed attempts at better reading and often are reluctant to engage in the same process once again (Guthrie, Alao, & Rinehart, 1997). Consequently, these students become disengaged from literacy content (Guthrie & Davis, 2003).

Klassen and Lynch (2007) add that students with LD transition from elementary school to middle school with a history of persistent failures and low performance in various content areas, especially reading. Low performance and continuous failures, according to Klassen and Lynch (2007), lead to doubt about their intellectual abilities.

Consequently, this leads to reduced effort in performing school related tasks, more failure, and low academic outcomes. These behaviors and outcomes are directly associated with motivational and self-efficacy. Many researchers agree that student's motivation and self-efficacy are major components in their academic success (e.g., Bandura, 1986; Bempechat, 2008; Henk & Melnick, 1995; Klassen & Lynch, 2007; Linnenbrink, & Pintrich, 2003; Willson & Michaels, 2006).

Willson and Michaels (2006) and Linnenbrink and Pintrich, (2003) contend that there is a strong correlation between self-efficacy and motivation. A strong self-efficacy strengthens motivation and a low self-efficacy weakens learning motivation. Consequently, low motivation and low self-efficacy affect student's academic abilities. In fact, according to Linnenbrink and Pintrich (2003), all the aspects of engagement, learning, and thus, achievement are reciprocally related. Consequently, high self-efficacy can lead to more engagement and, subsequently, to more learning and better achievement.

Bandura (1986) defines self-efficacy beliefs as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391). Thus self-efficacy beliefs are not global trait, but rather domain-linked trait and can change from one content area to another (Bandura, 1997). These self-beliefs, according to Bandura (1977, 1997), are shaped by four resources: a) mastery experience, (e.g., performance on previous similar tasks); b) vicarious experience, such as, observing others performing the tasks; c) verbal persuasion, such as, receiving feedback from a significant other; and d) experience of

physiological and emotional states, such as, reaction to a specific task within a given context. These four sources of information about self belief continue to reciprocally interact and affect individual's performance in certain areas (Linnenbrink, & Pintrich, 2003).

Self-efficacy is connected to the term 'engagement' in learning. Guthrie and colleagues (2004) report on a range of assigned meanings proposed by researchers to the term engagement (Guthrie et al., 2004). One meaning is time on task which involves paying close attention to text, concentrating on the concepts, and maintaining cognitive effort. A second meaning is affect in which the individual is goal oriented, active, constructive, persistent, and focused attention to the physical and social environment. A third meaning to engagement is cognitive which indicates the depth of processing during learning. Cognitive learners are strategic and keep monitoring their learning while engaging in the task. Finally, engagement described by others as related to the activity referring to the amount and diversity of the readers involved in the reading process (Guthrie, et al., 2004).

Linnenbrink and Pintrich (2003) describe the connection between self-efficacy and engagement in learning. They, first, distinguish between two forms of engagement, behavioral engagement and cognitive engagement. In behavioral engagement, students show interest in learning by demonstrating overt behavior, such as, listening to each other while talking, maintaining working on a given task, and participating in discussion. Although, many teachers consider such behaviors as prerequisites that may satisfy for engagement, these behaviors, however, do not necessarily demonstrate learning.

Therefore, these behaviors do not qualify for deeper understanding of the content area. In contrast to behavioral engagement, cognitive engagement provides more convincing evidence that the learning is taking place at a deeper level. In cognitive engagement, for example, the student may show deeper learning behaviors including thinking aloud about the content, generating questions, looking for clues in the text, and summarizing the main ideas (Linnenbrink & Pintrich, 2003). Consequently, cognitive engagement flows back to self-efficacy which motivates students to invest more effort in learning.

Pintrich and DeGroot (1990), in their previous work, confirmed the relationship between self-efficacy and learning. Consequently, they provided empirical evidence that students who believed in their own ability demonstrated higher levels of learning engagement, strategy used, and self monitoring of performance when engaged in reading. Henk and Melnik (1995) explain that self-efficacy thought to impact the learner's performance in reading by affecting the child's choice of activities, task avoidance, effort put forward in task, and goal persistence.

The National Institute for Literacy (2007) contends that individual's goals, values, and beliefs regarding the topics, processes, and outcomes of reading affect their motivations for reading, which involves self-efficacy. The National Institute for Literacy (2007) concludes that motivation for reading, along with background knowledge, appropriate reading strategies, and interaction with others are associated with a number of positive outcomes including reading achievement. Klassen and Lynch (2007) provide a connection between self-efficacy and reading outcomes, similar to the National Institute for Literacy's view. They argue that while low self-efficacy hinders individual's

performance, high self-efficacy, on the other hand, facilitates their task engagement, task choice, invested effort, and performance.

Students who posses a strong sense of self-efficacy, according to Wilson and Michaels (2006), will put more effort and work harder when encounter with challenging task. In contrast, struggling readers, when faced with challenging tasks they perceive as difficult to attain, will easily give in and quit any attempt. Struggling readers, mostly, attribute their success to luck or easy tasks. Therefore, if they believe that they will fail in upcoming tasks, they will not put any further effort to succeed (Wilson & Michaels, 2006).

Wilson and Michaels (2006), in agreement with Bandura's argument, believe that self-efficacy is not a static permanent belief about failure. It is rather a task-specific set of beliefs from frequent failing experiences in the past. Thus, it can be treated by: a) providing psychologically safe learning environments, b) making informed curriculum decisions, and c) applying instructional methods that foster success. Wilson and Michaels (2006) suggest that by providing safer learning environments, in which students with LD feel that their work is being appreciated and their effort is being respected, their selfefficacy will be strengthened. Further, by providing effective instructional strategies, carefully designed curriculum and materials, and ample opportunities for academic success, Wilson and Michaels (2006) contend that students' self-efficacy will grow stronger. Consequently, their engagement in learning and reading competence will increase. The next section discusses what the research says about the implemented of

cognitive strategy instruction in reading comprehension with struggling readers and students with LD.

# Cognitive Strategy Instruction in Reading Comprehension

Cognitive strategies are defined as "cognitive processes that the learner intentionally performs to influence learning and cognition" (Gajria et al., 2007, p. 216). The goal of cognitive strategy instruction is to teach children how to learn. Cognitive strategy instruction initially emerged from research on how competent readers successfully read and comprehend written texts (Block & Pressley, 2002; Pressley, 2000, 2006). Some researchers applied single strategy interventions, mostly, for a short period of time (e.g., Bempechat, 2008; Spires, Gallini & Riggsbee, 1992; Swanson, Kozleski & Stegink, 1987). Other researchers applied multiple cognitive and metacognitive strategybased interventions and reported on substantial gains in reading comprehension for struggling readers (e.g., Antoniou & Souvignier, 2007; Dion, Fuchs & Fuchs, 2005; Klinger & Vaughn, 1996; Mastropieri et al., 2003; Mastropieri et al., 2001; Palincsar & Brown, 1984).

The influence of these studies, on the reading comprehension of struggling readers have been periodically synthesized and examined by researchers in the field (e.g., Gajria et al., 2007; Gersten et al., 2001; Liang & Dole 2006; Maheady, Mallete & Harper, 2006; Marzano, Pickering & Pollock; National Reading Panel 2000; O'Brien, 2007; Rosenshine & Meister, 1994; Sencibaugh, 2007; Swanson, 1999; Trabasso & Bouchard, 2002). Implications for students with reading comprehension disabilities have been found based on whether single or multiple strategy instruction is used.

#### Research on Single Strategy Instruction

Single strategy instruction in reading comprehension has been implemented for various cognitive domain strategies with struggling readers (e.g., self-questioning, summary skills training, graphic organizers, mapping strategies, and schema-based cues). Most of these studies were designed to help struggling readers to deal with poorly organized expository texts (Gersten et al., 2001). Typically, these studies were designed to teach students a particular single strategy and included a control group of students for whom the designated strategy was not implemented. Among such single strategy interventions are the use of graphic organizers, self monitoring, self regulating, and summarizing main ideas. The study of Armbruster, Anderson, and Ostertag (1987), for example, compared a summarizing strategy of fifth grade students (treatment group) who were taught specifically how to summarize social studies passages, to students (control group) who received conventional instruction. Students of the treatment group who received the strategy instruction significantly outperformed students of the control group on a short essay post-test and on written recalls. The researchers concluded that the treatment was more beneficial for high-comprehending students compared to lowcomprehending readers.

Kim, Vaughn, Wanzek, and Wei (2004) reviewed 21 group-design intervention studies that were published between 1963 and 2001 in which graphic organizers was the approach for improving the understanding of texts for students with LD. The duration of the intervention for these studies was short for the most part, ranging between one to three weeks with a range of 2 to 12 intervention sessions. Most of the studies used either

semantic or cognitive maps; some of the cognitive maps were examined with mnemonic strategies others without mnemonic strategies. Kim et al. (2004) report that studies using semantic organizers, where students with LD create mental images based on information provided in the text, yield large effect sizes (0.81-1.69) compared to comparison conditions. Kim et al., (2004) conclude that the use of graphic organizers, such as semantic organizers, framed outlines, and cognitive maps, were found to be effective for the reading comprehension for students with LD.

Trabasso and Bouchard (2002), in agreement with the finding of Kim and colleagues (2004), reviewed 11 empirically designed studies that used graphic organizers with students in different content areas and found that graphic organizers are beneficial for struggling students. Trabasso and Bouchard (2002) found that "teaching readers to use systematic, visual graphs in order to organize ideas benefited readers in remembering what they read and improved reading comprehension and achievement in social studies and science" (p. 179).

Dole, Brown, and Trathen (1996) examined the effect of an interactive teaching strategy on students' performance in an independent learning situation. The researchers designed a study to focus on the comprehension performance of struggling readers as they read and recall text in teaching sessions and independent learning sessions. The researchers also contrasted strategy instruction with teacher-directed instruction and instruction provided following a basal text series. In the strategy instruction condition, upper elementary fifth and sixth graders were taught different strategies that would assist their comprehension. As part of the strategy instruction, students were taught how to self-

regulate their learning as the strategies incorporated declarative, procedural, and conditional knowledge. The content instruction, on the other hand, offered students with information to better understand a text that they were about to read, and the instruction was teacher-directed and focused primarily on declarative knowledge. The traditional basal instruction stemmed from the teacher's manual for a district adopted basal series.

Dole et al. (1996) found that conducting cognitive strategies has the most remarkable influence with at-risk students on comprehension tests compared to traditional practices, such as, teaching story content and direct teaching. Further, the researchers found scientific evidence that strategy instruction has enduring effects on students compared to traditional teaching practices. They report that seven weeks after strategy instruction ended, students who learned to use strategies outperformed those who were instructed through the other methods. In addition, the strategy instruction group performed better on the independent comprehension tests than the other two traditional groups. The researchers attributed the significant performance of the strategy instruction to the modeling, "coaching, and fading... which provided at-risk readers with the necessary to incorporate the procedural and conditional knowledge they were learning into their own repertoire of reading strategies" (Dole et al., 1996, p. 73).

Although, the above studies showed positive results each within its targeted area, these studies, however, were limited in their intervention duration and scope, when examined in other subject areas. Gersten et al. (2001) explain that although single studies conducted on narrative-text intervention research, for example, have been found to be effective on measures that were aligned to the particular intervention provided; they were

less strong on transfer measures. Gersten et al. (2001) attribute this to the fact that generalization on measures that are least related to the independent variables are difficult to attain, especially with students with LD. Further, Gersten et al. (2001) argue that these studies do not "persuasively demonstrate the capacity to achieve maintenance or transfer effects" (p. 303). For more reviews on the use of single cognitive strategy approaches see the intensive synthesis reported by Gersten et al. (2001).

In general, a variety of single-based strategies were found to be effective in fostering reading comprehension, often assessed by students answering questions about a text just read (e.g., Pressley, 2000; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). The complexity and nature of learning and reading, however, cannot be encompasses in one single strategy approach (Palincsar & Brown, 1984). Therefore, other researchers have approached reading comprehension by introducing multiple strategybased models. The impact of these multiple strategy interventions on the reading comprehension performance of students with LD are discussed next.

## Research on Multiple Cognitive Strategy Instruction

The emerging findings on the impact of multiple strategy instruction on the reading comprehension performance of struggling readers and students with LD present ample evidence on its positive values (e.g., Gajria et al., 2007; Gersten et al., 2001; Guthrie et al., 2004; Liang & Dole 2006; Maheady, Mallete & Harper, 2006; Marzano, Pickering & Pollock; National Reading Panel 2000; Rosenshine & Meister, 1994; Sencibaugh, 2007; Swanson, 1999; Trabasso & Bouchard, 2002). This section focuses on pivotal meta-analyses, covering several decades, which examine empirical studies for the

effects of multiple strategy instruction on students' performance in reading comprehension.

Rosenshine and Meister (1994), in their meta-analysis study, examine the effect of multiple strategy instruction on the reading comprehension of students with various reading abilities. The researchers reviewed 16 empirically designed studies including doctoral dissertations that exclusively used the reciprocal teaching (RT) model as a base to teach reading comprehension strategies for struggling readers. The RT model, which was developed by Palincsar and Brown (1984), aims to foster the reading comprehension strategies used by low achieving students in a dialogical environment where the teacher and students work together to unpack the main ideas embedded in the text. The RT model uses four cognitive strategies, prediction, clarifying, questioning, and summarizing as a basis for teaching students to comprehend informative texts. Rosenshine and Meister (1994), state that 12 out of the 16 reviewed studies utilized all four strategies. In the other four studies, 2, 3, or 10 cognitive strategies were implemented. All reviewed studies combined the cognitive strategies with teacher-student dialogue as they attempt to gain meaning from texts. Although, these studies were implemented in different ways, in which some of them utilized only parts of the strategies, with different age populations, experimental setting, and number of sessions used, all studies report positive gains in reading comprehension achievement for both competent and less competent readers. In fact, Rosenshine and Meister (1994) found that the effects were even larger for poor readers in some of the studies.

Rosenshine and Meister (1994) conclude that there were no significant relationships between the results and a) the size of instructional group, b) the person who provides the instruction (i.e., whether it was the teacher or the experimenter), c) number of cognitive strategies that were taught, d) number of sessions used to implement the strategies, and e) grade level. When reading comprehension was assessed using researcher-developed tests, however, students achieved a higher median effect size of .88, in favor of RT, compared to moderate effect size of .32 only when standardized tests were utilized. These findings suggest that when the outcomes were measured by tools that are designed exclusively to support the implementation of the study in hand, the results were more significant.

Rosenshine and Meister (1994) attributed these finding to the fact that the passages that were developed by the researchers in RT seemed to be easier to answer because ":a) the passages were longer which provides opportunity to utilize visual cues and hints embedded in the text, b) the passages were almost always organized in a topic-sentence-and-supporting-detail format, c) answering the questions required less background and less searching of the text." (p. 509). Further, the passages used for the tests are similar to those exclusively developed passages used in the training sessions. Finally, in their attempt to answer the questions, 'which strategies and how many should be used for a RT to be more powerful', Rosenshine and Meister (1994) conclude that although question generating and summarization were among those strategies used the most, there are, however, no definite answers for these questions, leaving the door wide open for further investigations.

Swanson (1999) reviewed 92 empirically executed strategy instruction studies published in English language between the years 1963 and 1997 for their effect in the domains of word recognition and reading comprehension. Fifty- eight of the reviewed studies included measures of reading comprehension, 20 of which combined both measures, reading comprehension and word recognition. All selected studies had targeted students with LD at various age levels. Finding from the meta-analysis indicates that strategy intervention in reading comprehension yielded an average effect size of .72, compared to an average effect-size of .59 for intervention in word recognition. Studies that met the reading comprehension instruction criteria set by Swanson (1999) were categorized into four models: a) studies that used strategy instruction only, b) studies that used direct instruction only, c) studies that used strategy instruction combined with direct instruction, and d) studies that did not have either model and failed to reach the required threshold of reported information. Swanson (1999) concludes that small-group interactive instruction and strategy cueing contributed substantially to students' comprehension. Further, effect sizes for measures of reading comprehension were higher when strategy instructions involving cognitive and direct instruction were combined. Furthermore, Swanson (1999) states that high gains in reading comprehension were directly attributed to the instructional components used for the studies.

The National Reading Panel (2000) reviewed empirical studies that were conducted prior to the year 1999 on teaching comprehension strategies and concluded that teaching reading comprehension strategies in combination is highly effective. The use of multiple strategies, for example, requires that the reader execute a set of reading

comprehension strategies, including clarifying for meaning and asking questions while reading at appropriate times when needed. The National Reading Report (2000) lists eight areas of reading comprehension instruction that have been empirically validated for improving reading comprehension. These instructional strategies include: 1) story structure, 2) graphic organizers, 3) question generating, 4) question answering, 5) summarizing, 6) cooperative learning, 7) comprehension monitoring, and 8) the use of multiple strategies. According to the report, if these strategies are used appropriately "they assist in recall, question answering, question generation, and summarization of texts" (National Reading Report, 2000, p. 15).

The findings of the National Reading Report (2000) were confirmed by Marzano, Pickering and Pollock (2001). Marzano et al. (2001) reviewed 42 cognitive strategy based studies and listed categories of strategies that have the most impact on reading comprehension across a board range of student ability levels and ages. Marzano and colleagues (2001) concluded that story and text structure, summarization, graphic organizers, question generating, and cooperative learning are among the strategies that yielded the highest gains for reading comprehension performance.

Trabasso and Bouchard (2002) reviewed 205 empirically based cognitive strategy instruction, for improving reading comprehension of texts, which were published between the years 1980 and 2002. Twelve distinctive cognitive comprehension strategies were selected by the researchers as promising strategies with positive gains, including comprehension monitoring, prior knowledge, question generating, summarizing, vocabulary instruction, graphic organizers, and story structure among the strategies that

yielded the most in respect to reading comprehension gains. Trabasso and Bouchard (2002) organized their reviewed studies according to the type of strategy intervention used. The researchers analyzed 17 studies that emphasized questioning strategies and found that instruction of question answering enhances the memorization of the content that was read, particularly, in answering questions after reading passages, and in strategies for finding answers. Finally, in their reviews for studies that emphasized the importance of summarizing main ideas embedded in the text, Trabasso and Bouchard (2002) found that such strategy enhances memory for what is read, in terms of free recall and answering questions.

Gersten et al. (2001) reviewed 27 experimental and quasi-experimental design studies published between the years 1980 and 1999, on the impact of single and multiple cognitive strategy instruction on the reading comprehension performance of students with LD. The reviewed studies included 11 narrative-text based studies and 16 studies conducted on cognitive strategy intervention used for comprehending expository texts. Although all narrative-text-based studies had variable treatment conditions, they have some common components that unify them in terms of application methods in that they all: a) report on the effectiveness of providing text structure (e.g., story-grammar elements, so that students can focus on the relevant information); b) emphasize the importance of providing extensive feedback; and c) provided modeling and guidance for all students under study treatment.

Gersten et al. (2001) organized all studies that evaluated multiple comprehension strategies into two sets: the ones that used two strategies that combine summarization and

self-monitoring, and the ones that were conducted on more than two strategies. The researchers report that results of the studies on the use of simultaneous multiple strategies echoed single-strategy studies on the importance of providing continuous feedback and sufficient modeling for students. One distinctive feature that is unique to multiple strategy instruction, when compared to single strategy model, is the ability of multiple strategy interventions to transfer skills to more generalized measures of reading.

Maheady et al. (2006) reviewed three multiple-strategy programs, PALS, classwide peer tutoring (CWPT), and START tutoring for their effects on students at-risk for school failure. In addition, the researchers introduced a new strategy package, Classwide Student Tutoring Teams (CSTT). Maheady et al. (2006) report that all four models reviewed in this study provide empirical evidence which support their effectiveness on students' reading comprehension. PALS and CWPT, in particular, were among the most effective models. The PALS model has demonstrated statistically significant improvement on standardized comprehension test batteries (i.e., Comprehension Reading Assessment Battery CRAB). All four models were measured against consumer satisfaction and found to be highly accepted by students, teachers, and administrators. One distinctive feature about these models, according to Maheady et al. (2006), is the fact that they used contingent reinforcement with students with special needs. In addition, all four models used systematic teacher or student training procedures (e.g., review and discussion of the tutorials, role-playing, positive and corrective feedback, and training to fidelity criterion).

In a similar vein to the review by Maheady et al. (2006), Liang and Dole (2006) reviewed five instructional models to teach reading comprehension for struggling readers. Liang and Dole (2006) define an 'instructional model' as "a set of ideas or principles that provide the basis or outline that is more fully developed at a later stage" (p. 743). A common model that is well known to many teachers, according to Liang and Dole (2006), is reciprocal teaching. Interestingly, the researchers chose to review, and thus, to introduce models that are less familiar than RT. These models are: a) the Scaffold reading experience (SRE), b) Questioning the Author (QtA), c) Collaborative Strategic Reading (CSR), d) Peer-Assisted Learning Strategies (PALS), and e) Concept-Oriented Reading Instruction (CORI). The researchers note that three models CORI, SRE, and QtA require considerable amount of teacher preparation which may discourage some teachers from investing in such programs. Further, teacher management during the implementation of these models is considerably higher, especially at the initial stages when the teacher trains students to use the strategies.

PALS, in contrast to the other models, requires less preparation due to the fact that it has been pre-prepared by the authors with a set of instructional materials, and a guiding manual for the teachers. One distinctive feature of CORI which is different than all other models reviewed by Liang and Dole (2006), is that it combines both aspects of comprehending the content of particular material and learning to use comprehension strategies at the same time. The researchers conclude that all five models are effective in fostering students' comprehension of written texts.

Gajria et al. (2007) examined 29 studies designed to improve the comprehension of expository texts for students with LD. The review included two types of studies: a) content enhancement based strategy intervention (e.g., visual displays, mnemonic illustration, and computer-assisted instruction), and b) cognitive strategy instruction (e.g., summarization, questioning, and text structure). Gajria et al. (2007) categorized the studies based on their intervention type, students' characteristics, instructional features, methodology features, strategy maintenance and generalization, and intervention for single-group designs. Finding of the synthesis on the use of multiple cognitive strategy instruction, which included 15 interventions, yielded a large effect size of 1.83, indicating that cognitive strategy instruction is effective for students with LD.

Among those cognitive strategies, Gajria et al. (2007) state that summarizing and identifying main ideas, self-monitoring, collaborative strategic reading, and the four strategies of reciprocal teaching were among those strategies that yielded high results. Implications drawn from the synthesis indicate that in all studies reviewed, cognitive strategies and content enhancement strategies were implemented in conjunction with good teaching practice (i.e., teacher modeling, and guided practice). Another implication noted by the researchers, is the importance of preparing instructional materials that are designed to prepare students to understand the expository text while practicing on the cognitive strategies).

Sencibaugh (2007) surveyed 15 empirical studies conducted between 1985 and 2005 on the use of comprehension strategies with students identified with LD. The metaanalysis yielded an effect size of 0.94 for visually dependent reading and 1.18 for studies

that used auditory-language-based dependent strategies. The researcher concludes that auditory-language based interventions have greater influence on the reading comprehension of students with LD, compared to visually based intervention strategies. Sencibaugh (2007) observed that questioning strategies mediated by the teacher involving a combination of self-instruction and paragraph summarization along with text-structurebased strategies produced the highest outcomes. Furthermore, Sencibaugh (2007) argues that "strategy instruction ameliorates the critical thinking skills of students with LD while increasing their active participation in the learning process" (p. 10).

In summary, cognitive strategy instruction for reading comprehension is effective with students with LD. Multiple strategy instruction is powerful due to its endurance over a longer period of time and transference to other domain content areas. Strategies that emphasize the activation of prior knowledge, question generating and answering questions, mental visualizing, understanding text structure, summarizing main ideas, selfmonitoring, and cooperative learning are among the ones that yield the most gains in reading comprehension. In addition, teacher's use of explicit modeling, guided practice, and continuous feedback are considered as strong teaching practices for supporting the learning engagement of struggling readers. Many of the aforementioned cognitive strategy interventions are situated within a sociocultural context in which the role of expert mediator has been regarded by researchers as one of the critical components in bridging the gap between the reader's world and the text. Thus, a discussion on the role of mediation in fostering the reading comprehension performance of students with LD is vital.

#### The Role of Mediation in Reading Strategy Instruction

Many researchers have noted that comprehension strategy instruction mediated by the teacher first, and later by peers of students with LD has been successful (e.g., Bos & Vaughn, 1994; Maheady, 2000; McMaster et al., 2007; Mastropieri & Scruggs 2007; Palincsar, 1986, 1993; Palincsar & Brown, 1984; Pressley, 2000). The concept 'mediation', also referred to as scaffolding, and its relation to the cognitive development and social competence of learners was discussed by Vygotsky in the early twentieth century (Gindis, 1999; Kozullin, 2003). Vygotsky (1978) examined this relationship within a sociocultural context. One of the main features of the sociocultural model is an assumption about the nature of the context of learning (Englert & Mariage, 2003; Palincsar, 1993).

Human psychological processes, as conceived by sociocultural theorists, are jointly-mediated activities, and thus, are social in their origin (Englert & Mariage, 2003). Vygotsky claimed that human development is relational (Jennings & Di, 1996). Sociocultural theorists posit that the learning process in a sociocultural context depends on the active position of the learner, which is crucial to the development of life-long learning skills (Verenikina, 2008). The interaction between the learner involved in the process and the mediator assumes a specific paradigm of teacher-student interaction where the role of the 'expert adult' is that of collaborator and co-constructor of knowledge (Palincsar, 1993).

Vygotsky (1978) argued that higher mental functions originate in shared problem solving between children and more skilled partners. Those interactions allow children to

master more complex strategies from their involvement in the shared problem solving processes in a responsive social context (Chaiklin, 2003; Englert & Mariage, 2003; Gindis, 1999). Vygotsky (1978) referred to such processes that allow for maturation in the child's cognitive functioning as the zone of proximal development (ZPD). ZPD is defined as "the distance between a child's actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under guidance or in collaboration with more capable peers." (Vygotsky, 1978, p. 86).

Vygotsky (1978) explained how the ZPD is constructed and internalized at the learner's level. The zone of proximal development "defines those functions that have not yet matured but are in the process of maturation; functions that will mature tomorrow, but are currently in embryonic state. These functions could be termed the 'buds' or 'flowers' of development rather than the *fruits* of development" (p. 86). Vygotsky (1978) suggested that "what is in the zone of proximal development today will be the actual developmental level tomorrow-that is, what a child can do with assistance today she will be able to do by herself tomorrow" (p. 87).

Mediation in learning is an essential component in bridging the gap between the learners' existing knowledge and the knowledge and skills that are expected from them. This assumption holds promise for all students, including for students with LD. The next section describes two cognitive strategy models in the area of reading comprehension that are originally inspired by sociocultural theory.

Promising Cognitive Strategy Instruction Models
Since the early 1980s, many cognitive strategy-based approaches have been developed in the area of reading comprehension instruction. Two of the promising strategy-based models that emerged: 1) The use of reciprocal teaching (RT) developed by Palincsar and Brown (1984), and 2) the George Peabody College Peer-Assisted Learning Strategies (PALS) model developed by Fuchs et al., (Fuchs et al., 2001). These two models in particular have been as promising approaches for students with LD in the area of reading comprehension (Maheady et al., 2006). These two models, especially RT, were largely inspired by the sociocultural theory on the role of mediation and its impact on the cognitive and social development of learners. Palincsar and Brown (1984) argue that strategy instruction should be responsive to students' lived experiences and connected to their cultural, linguistic, and social background. This deeper understanding of the nature of learning led Palincsar and Brown (1984) to emphasize the importance of connecting their model to the sociocultural theory developed by Vygotsky.

PALS and RT share some of the main features that were discussed earlier in terms of their structure, purpose, teacher's and students' role in the process as knowledge mediators, and the major activity components incorporated in the various activities. These two models, however, are distinct from each others in several ways which will be discussed in the following section.

*Peer-Assisted Learning Strategies* (PALS). PALS is a classwide peer learning strategies model, whereby children work together with the monitoring of an expert teacher to support each other's learning (Dion, Fuchs & Fuchs, 2005). Since it was originally developed and implemented in grades 2-6 in the early 1990s by Fuchs, Fuchs,

Philips, Hamlett, and Karns (cited in Fuchs et al., 2001), the PALS model has received a growing interest among researchers who investigated its impact on students' performance at all grade levels, including at the kindergarten and first grade levels (e.g., Mathes, Grek, Howard, Babyak & Allen, 1999; Mathes, Howard, Allen & D. Fuchs, 1998), and middle and high school (e.g., Mastropieri et al., 2003; Mastropieri et al., 2001); PALS has also been examined for its impact on students' social preference and friendship making (see Dion et al., 2005).

Although, not all PALS applications yielded statistically significant results with all students (McMaster et al., 2007), the overall picture demonstrates its success among different subgroups of students, particularly, for students with learning disabilities (e.g., Calhoon, 2005; Fuchs et al., 2002; Fuchs et al., 2000).

The purpose of PALS is to support the capacity of general education to meet the academic standards for all students, including students with disabilities (Fuchs et al., 2000). Most specifically, PALS reading was designed to develop students' reading fluency and comprehension (Fuchs & Fuchs, 2005). The original ideas of PALS were derived from the work of Palincsar and Brown (1984) on Reciprocal Teaching, and the Cooperative Integrated Reading and Comprehension (CIRC) which was developed in the 1980s (Fuchs et al., 2001). Recent studies on reading comprehension instruction for students with disabilities indicate that appropriate grouping, specific cognitive strategy instruction, extended practice opportunities, and breaking down tasks into smaller components, are related to significant improvement in reading and comprehension skills (Calhoon, 2005). The PALS model engages students in all these components (Fuchs &

Fuchs, 2005). PALS focuses on teaching a set of comprehension strategies that assist students to comprehend a variety of narrative and informative texts (Liang & Dole, 2006).

PALS as a model incorporates structured activities that allow for continuous mediated interactions between peers who alternate roles in tutoring and tutee exchanges, and immediate corrective feedback. Thus, students in PALS, contrasted with traditional teacher-led instruction that reduces practice time opportunities, stay engaged during almost all allocated time for the session. Fuchs and colleagues (2002) add that PALS's structured one-to-one interaction allows for (a) frequent opportunities for students to respond, (b) immediate partner's feedback, (c) increased academic engagement time, and (d) students' social engagement and support.

PALS activities require considerable direct support by a teacher's supervision and involvement throughout the entire process. The teacher moderates the learning of the strategies, and continuously prompts students to accurately apply the strategies, and provides feedback and contingent rewards on the correct tutoring and team collaborative behavior (Liang & Dole, 2006). In spite of its high teacher involvement, PALS provides more frequent opportunities for student's time spent on task, as opposed to traditional teaching methods which by comparison present a loss of valuable instruction time (McMaster et al., 2007).

The high rates of interaction among students ensures higher rates of academic success (McMaster et al., 2007). In PALS the high functioning readers go first in all

tasks, which provides a modeling opportunities for the low performing readers, the pairs utilize materials that are instructionally appropriate for the lower performing students.

Because many students with reading disabilities lack the ability to monitor their own work (Calhoon, 2005; Greenway, 2002), the teacher, as argued by Ramsey et al. (2007), must provide them with cueing cards for specific tasks. Such cueing cards, according to Ramsey and colleagues (2007) are helpful during PALS sessions and should be practiced prior to engaging in the activity. In addition, they sometimes need guidance on how to provide constructive feedback, praise, and encouragement to their peers. Further, teachers' encouragement to those who use such cuing correctly is essential for the success of implementation. Once the partners are in their respective dyads, the higher functioning partner models the reading skills in the task, such as, reading aloud in front of the lower functioning partner; then, the second partner takes a turn and models the reading, both partners in the dyad are fully engaged in providing constructive feedback on each other's reading (Ramsey et al., 2007). The dyads continue to play the role of tutor and tutee, as needed. Once the procedures are mastered by the students and become more familiar among all class members, the teacher switches the partners in the dyads so that students receive fair chances of enriching and being enriched by other partners in the class.

*Reciprocal Teaching.* Reciprocal Teaching (RT) was originated and described in the 1980s by Palincsar and Brown (1984) based on their research with middle school struggling students in English literacy classrooms. RT became popular and was recommended by a body of research (see e.g. Greenway, 2002; Hashey & Connors, 2003;

Kelly, Moore, Tuck, 1994; van Garderen, 2004) which reported impressive gains across all grade levels and students with various needs, including students with LD (Lederer, 2000) and English language learners (Klinger & Vaughn, 1996; Proctor, Dalton & Grisham, 2007).

Palincsar and Brown (1984) describe RT as an instructional strategy that aims to enhance students' reading comprehension. The process is best characterized as a dialogue between teacher and students (Slater & Hortsman, 2002). Thus, the term "reciprocal" describes the nature of the interactions among the learners and the teacher. The dialogue is structured by the use of four strategies: predicting, questioning, clarifying, and summarizing (Palincsar & Brown, 1984). These strategies, according to Palincsar and Brown (1984), can be conducted in any order. Palincsar and Brown (1984) explain that the rationale behind choosing these four strategiesis they provide for reciprocal interaction that can be both comprehension-fostering and comprehension- monitoring. By engaging students in the process of predicting the content and events of a passage, briefly stating the main ideas, generating questions related to the passage, and by clarify the various new concepts, students will be actively involved in the "self-monitoring" strategy. Consequently, by engaging in these activities, the readers will become more aware of their reading process (Palincsar & Brown, 1984).

The main premise of RT as described by Palincsar and Brown (1984; Palincsar, 1986; Brown & Palincsar, 1989; Palincsar, & Klenk, 1992) is to help poor readers become good readers, by teaching them strategies that work for good readers when encountering reading tasks. Students are encouraged to look for meaning in the text, at

both the sentence and the passage levels. In addition, the purpose behind teaching the RT strategy is to demonstrate that poor readers can benefit from self monitoring strategies through a set of procedures that can be implemented in any order (Palincsar & Brown, 1984; Slater & Hortsman, 2002).

Greenway (2002) asserts that RT makes metacognitive strategies explicit by emphasizing student's understanding of the main idea, asking students about their understanding of the passage, which will ultimately assist them in monitoring their own comprehension strategies, connecting their previous knowledge to the information being read, and finally by prompting them to summarize their knowledge into meaningful memorable segments. RT, as described by Palincsar and Brown (1992), is implemented gradually beginning with guided practice. It includes other components, such as expert modeling by the teacher, expert support as the students begin to implement the strategy, students supporting and guiding each other, and gradually support being faded as the students demonstrate competence in their skills (Palincsar & Brown, 1992).

Greenway (2002) noted that RT is not the only reading comprehension intervention that was implemented with students with various needs. Other reading models have been successfully used as well and led to valuable improvements, such as, Inference Training (IT), and Corrective Reading Program (CR). These strategy-based models, however, differ from Reciprocal Teaching in several ways. One major difference is that both models, Inference Training and Corrective Reading Program, have been implemented in a direct teaching form, where the teacher is heavily involved in all steps and provides the students with immediate answers when they fail to respond to the task.

In Reciprocal Teaching model, on the other hand, the teacher allows for a more social interaction among students and provides more peer learning opportunities in a socially constructed environment. Further, in Reciprocal Teaching, the teacher shares responsibility with the students and allow them to gradually take on the teacher role during the strategy application, which is by itself a major component in the understanding of how students learn from a sociocultural perspective. Another major difference that distinguishes Reciprocal Teaching from Inference Training, for example, is that the latter model is based on one strategy only (detect clue word in a passage), whereas Reciprocal Teaching is built on multiple cognitive strategies that include student's self monitoring (Greenway, 2002). Thus, Reciprocal Teaching unique in that it invites the student to take over the teacher's role, which by itself is a powerful strategy that allows for student's self monitoring and would increase his or her self esteem (Greenway, 2002).

Over the past two decades, RT has been used in various content areas including, science, mathematics, and social studies, and with almost all ages, including kindergarten and at the college level. Rosenshine and Meister (1994) reported in their meta-analysis of the 16 empirical studies that were implemented between the years 1984 and 1994, positive gains with an average effect size of .88 across all studies under investigation (cited in Proctor et al., 2007). Later the National Reading Panel (2000) reported on additional 11 studies with positive gains that were not listed in the Rosenshine and Meister report. The following three studies are only a few of the many examples that illustrate the various gain effects on students' learning and social outcomes.

The first study was reported by Greenway (2002). The researcher investigated the application of RT in a literacy based 6<sup>th</sup> grade classroom in an inner city school in Britain. The purpose of the study was to improve the achievement scores of students in reading comprehension on a standardized assessment test. The students had average decoding skills but performed poorly in reading comprehension. The researcher used a quasi-experiment intervention for a full year with one classroom after a long introduction and guided practice was given to the teacher who taught the children. The strategy implemented was guided by the main four strategies used by Palincsar and Brown (1984) and was called SPIQ, which stood for summarize finding the main idea, predict what will happen next, investigate unknown words, and question or interrogate the text. The results as reported by Greenway (2002) show reading comprehension increased significantly from 6.08 comprehension age at pre-test to 7.75 comprehension age at post-test. In addition the researcher reports on an improvement in the self esteem rate based on students' self reporting.

The second study was conducted by van Garderen (2004). The author reported on a modified reciprocal teaching strategy which was implemented in mathematics lessons with students who experience difficulties in word problem solving, and who spoke English as a second language, at the middle school levels. According to van Garderen (2004), mathematics textbooks depend heavily on increasing the number of abstract concepts and solving word problems that students have to process in order to comprehend the content. The teacher in a mathematics reciprocal teaching lesson, based on the

original four components strategy of Palincsar and Brown (1984), would divide the whole class into small groups, and a group-leader would be assigned for each group.

van Garderen's modified strategy includes the following components: (a) clarifying, (b) questioning, (c) summarizing, and (d) planning. The leader instructs the group members to silently read the problem, and ask for *clarification* about any new term or phrase that they encounter. Any group member then would provide the meaning for the new phrase. After all new concepts are cleared and discussed the group leader would pose *questions* for understanding the problem by analyzing its parts. Next, the leader *summarizes* all the possible answers and guides the members through a *plan* to solve the problem. Finally, students attempt to solve the problem and check whether it makes sense before they submit their answers (van Garderen, 2004).

Finally, Klingner and Vaughn (1996) investigated the efficacy of a modified RT as an instructional intervention for reading comprehension with 26 seventh and eighth grade level students with LD who speak English as a second language. Klingner and Vaughn modified traditional reciprocal teaching as described in Palincsar and Brown (1984) by including a strategy to activate prior knowledge. This strategy benefits ELL students with LD because they have the opportunity to dialogue, express their ideas, and collaborate with each other. By adding the activation of prior knowledge to RT, the researchers helped the students to connect what they already know to the new concepts which facilitated and impacted their learning and comprehension. Although the results were statistically insignificant, Klingner and Vaughn report that there was an impressive increase in the reading comprehension abilities of the students who participated in the

study compared to the comparison group, and that both groups would benefit from minimum adult instruction when the strategy is explicitly explained and modeled to all students prior to the intervention.

It can be concluded from the aforementioned studies that these strategies embrace the reciprocal roles of learners, and teachers and students role exchange. Students who are engaged in this process tend to consistently monitor their role sharing, and therefore, become aware of their reading processes. Further, it can be assumed that students, when engaged in the RT strategies, become more involved socially with each other. Consequently, students gain academic and social skills in a supportive responsive learning environment.

Indeed, these exemplary models, PALS and RT, have provided strong evidence of the positive gains that result from the mediation of cognitive strategies for students with LD in the area of reading comprehension. These two models, however, were implemented and validated for students within the USA's context. It has been argued by some researchers (e.g., Stenberg, 2007; Sternberg, Grigorenko, & Kidd, 2005) that whatever succeeds in one cultural context does not necessary provide the same evidence to other cultural contexts.

Therefore, it would be of interest to examine these models among the Palestinian-Arab middle school children diagnosed with LD. For this purpose an emerging model, the "Five Mediated Cognitive Strategies: 5MCS" is introduced. It is based on principles used for PALS and RT that include conceptual understanding of the sociocultural theory developed by Vygotsky (1978).

### The 'Five Mediated Cognitive Strategies' (5MCS)

The 5MCS is a cognitive multiple strategy-based intervention for reading comprehension incorporating the following five strategies: a) predicting, b) questioning, c) investigating for meaning, d) schematic visualizing, and e) summarizing main ideas. The purpose of using these strategies is to foster the reading comprehension skills of struggling readers, particularly, students with LD at the middle school level. Due to the collaborative nature of the combined strategies they are intended to advance students' social interaction. The 5MCS model is based on the understanding that humans' cognitive development occurs when abstract concepts, first learned through social interactions, become internalized and made one's own (Klingner & Vaughn, 1996; Palincsar & Brown, 1984; Vygotsky, 1978). In the 5MCS, students were dynamically engaged in the process of understanding the texts, with the teacher and students' peers mediating their construction of knowledge (e.g., Guthrie et al., 2004).

Further, Following Bandura's four sources of self-efficacy (vicarious experience, mastery experience, verbal persuasion, and experience of emotional and physiological states), the 5MCS model was designed in a way that provide the necessary experiences to enhance students' self-efficacy in reading. First, students were introduced to the 5MCS gradually by the teacher who explicitly explained and modeled how to use the strategies, in a whole class instruction with explicit examples, and later in small groups as the students began to practice in their designated groups on the strategies. According to Bandura (1997) "efficacy appraisals are partly influenced by vicarious experience mediated through modeled attainment." (p. 86). Further, Bandura (1997) argues that

individuals tend to seek experienced models who posses the competencies to which they aspire. That is, a persistent teacher's modeling for each of the 5MCS strategies serves as a tool for promoting a sense of personal efficacy judgment.

Second, a sense of success was established for many of the students in the 5MCS. Students were assigned weekly tests that measure their performances in reading comprehension passages at their instructional level. Most students have shown a gradual success in comprehending and answering questions related to the assigned passages over the weeks of the intervention. This gradual success provided them with a sense of mastery experience. Bandura (1997) regards this kind of experience as the most influential source of efficacy. Enactive mastery experience, according to Bandura (1997), builds a "robust belief in one's personal efficacy." (p. 80). Individuals, generally act on their self belief based on their previous performances in certain tasks. Thus success feeds their positive self-efficacy, whereas, failure lower their efficacy (Bandura, 1997).

Third, the 5MCS provided continuous opportunities for a realistic teacher's feedback on student's performance on each of the activities. Although a good modeling and previous success in similar tasks send a good message for the learner to carry on and invest more effort while working on these tasks, a good persuasion from significant other, however, can strengthen student's self belief in learning in similar conditions. It has been argued by Bandura (1997) that many people cannot rely solely on themselves to judge their competence in certain tasks, for this requires a high level of inference, which many only have little knowledge about. Therefore, learners need a significant other who is knowledgeable about the task that is being evaluated. Bandura (1986) states that learners

who are verbally persuaded by significant other that they are capable of performing certain tasks, they are most likely to invest more effort and sustain it for a longer time compared to being left out with their failures. In the 5MCS each student received individual feedback from the teacher on their performances on a weekly basis which helped them to realistically see their progress throughout the intervention weeks.

Finally, physiological and emotional states of the learner add another important source to self-efficacy. Bandura (1997) argues that "people can learn faster if the things they are learning congruent with the mood they are in, and they recall better if they are in the same mood as when they learned them."(p. 111). This clearly means that students when learning should be provided with a positive learning environment. In the 5MCS intervention, students were taught in a safe educational environment, where they received continuous support and encouragement not only from the teacher, but also from their own peers in their groups. The social setting which was an integral part of the 5MCS provided students with a sense of belonging and support.

The 5MCS activities were initially mediated by the teacher at the beginning of strategy implementation. At the start of the intervention, the teacher demonstrated how to implement each strategy separately, using various relevant materials. Such materials were carefully selected to respond to students' social, cultural, and lived experiences. A variety of passages in the form of high-interest/low-level texts were considered (Graves & Philippot, 2002). In addition, the passages were leveled based on students' instructional level. Later, when the students become more familiar and confident with each of the strategies, they took control in leading each other through the reading process. The

teacher, at this stage, facilitated the process and provided reflective feedback on the appropriate implementation of the 5MCS.

This flow of gradual control in the 5MCS model has been supported by scientific evidence . Research has demonstrated that struggling readers, including students with LD, unlike competent readers, do not acquire strategic reading by themselves; and, thus they need to be taught, how, where, and when to gain more confidence in their reading comprehension (Bender, 2004; Mastropieri & Scruggs, 2007; Pressley, 2000; Swanson & De La Paz, 1998). Bender (2004) argues that many students with LD do not thoughtfully plan for their educational tasks. Therefore, the teacher must accept responsibility and train them in how to implement cognitive and monitoring strategies.

Pearson and Dole (1987) surveyed successful comprehension strategy instruction and reported common components of mediated explicit teaching of strategies use the following sequence: (a) teacher modeling, (b) guided practice, (c) consolidation, (d) independent practice, and (e) application. This model of mediated explicit comprehension instruction was unique, according to Pearson and Dole (1987) because it was designed to be implemented holistically during reading, and did not focus on isolated sub skills. Pearson and Dole (1987) developed a schema model illustrating the gradual release of responsibility from teachers to students (see figure 2.1 for a flow of gradual release of responsibility model).

# Implementing the Five MCS

The following five strategies describe the process of mediating all 5MCS strategies within a contextual content. These strategies can be initiated in any given order,

especially once all students become confident and independent in using them without the need for the teacher's mediation. However, for the purpose of order and sequence in this research, the 5MCS were delivered according to the following five phases: 1) predicting, 2) questioning, 3) investigating for meaning, 4) schematic visualizing, and 5) summarizing the main ideas. The teacher explained to the students later that these strategies could be used entirely or partially as needed based on the reading demand and text complexity. Each of the following strategies will be first connected to existing research that validates its importance and use for students with LD, and then their application within the 5MCS will be described.

Figure 2.1

The Gradual Release of Responsibility Model of Instruction





*Predicting.* Current research indicates that students with LD benefit from activating their background knowledge (Gajria et al., 2007; Graham & Bellert, 2004; Jitendra et al., 2000; Neufeld, 2005; Palincsar & Brown, 1984, 1986). Palincsar and Brown (1984, 1986) argue that cognitive strategies, such as predicting, effectively build self-monitoring strategies among seventh grade students who were described as adequate decoders but poor comprehenders. Jitendra et al., (2000) add that prediction stimulates other cognitive strategies, such as, activating background knowledge, previewing and over viewing or summarizing the content. Prediction strategy, in a narrative passage, for example, encourages students to generate thoughts or outcomes about how characters might act or react based on the settings, events, or characters of the texts based on their previous experiences. Researchers found that such strategy to be highly effective for less able readers (Gajria et al., 2007). Further, research has found that strategies that include prediction increase overall or global understanding of a story (Graham & Bellert, 2004; Neufeld, 2005).

This approach of activates students' prior knowledge through the use of predicting strategy has been demonstrated by the zone of proximal development (ZPD). The ZPD process involves mediating students' understanding of new concepts by an expert other (e.g., the teacher) building on previously known information about the topic (Palincsar & Brown, 1984; Vygotsky, 1978). This activity can be performed in more than one way, including brainstorming ideas and prediction. Researchers consider predicting as a powerful strategy that can be beneficial for struggling readers (e.g., Gajria et al., 2007; Graham & Bellert, 2004; Moreillon, 2007).

Predictions are described by Moreillon (2007) as educated guesses about what will happen next in the text based on what is known or with inference drawn from the author's ideas, or illustrations and visual clues that are created exclusively to lead the reader throughout the text. Moreillon (2007) argues that students who are involved in prediction before, during, and after they read each segment will be actively involved in the meaning-making process. The assumption made about the role of prediction in reading comprehension stems from the understanding that reading is a transactional process between the reader, the text, and the context in which all these elements are

interrelated and influence each other (RAND Reading Study Group, 2002; Rosenblatt, 1969).

From this understanding, one can infer that when competent readers attempt to read a text they are actively engaged in a meaning-making process. They interpret the text by relying on their own background knowledge and utilizing new information and clues presented by the text. This active process helps them to stay on task, and become more engaged and curious about the upcoming information embedded in the text. Unfortunately, as noted, many students with LD do not posses this skill naturally, and therefore, this strategy needs to be explicitly mediated with them first by the teacher, and later by their own peers (Gajria et al., 2007; Graham & Bellert, 2004; Pressley, 2006).

Silent and Oral reading. In the 5MCS, following predicting students were given some time to silently read the first segment of the text, usually one paragraph. The purpose of the silent reading was to allow for individual connection between the prediction and the content that has been read. Next, students took turns of one minute oral reading the assigned segment. The more advanced student read first in order to provide modeling. The partners provided their group member who read with immediate corrective feedback on his or her one minute reading. This part of the activity aimed to enhance the reading fluency skills of all students. This one minute silent reading and one minute oral reading activity was part of the class routine for each assigned segment of the passage. The reciprocal reading role exchange was always practiced immediately after the prediction part.

*Questioning.* It has been argued that good readers keep asking questions about the content of the text while reading (Palincsar & Brown, 1986). Asking questions enables them to stay connected to the main ideas and maintain attention to details while reading. This strategy is essential for the overall comprehension. When readers know in advanced that they are expected to ask questions about their reading, they invest more effort connecting ideas and thinking of appropriate questions about the information they read in the passage (Oczkus, 2003). In questioning the readers process and identify the information that is presented in the text they read and further analyze its significance to generate questions which they can answer themselves. Engaging readers in questioning strategy has a major benefit of flexibility since students can learn to generate questions at different levels, such as asking thin questions where the answers can be explicitly found in the text, or thick questions where the answers can be extended beyond the given information in the text (Oczkus, 2003).

In the 5MCS the teacher discussed this strategy in the form of think-aloud for the first few times she modeled it until students became oriented with it. Then, students were encouraged to ask questions about the paragraph or passage at hand. Once the text segment has been read, the assigned leader of the group generated a list of questions prompted by the passage. It is worth noting here that the group leaders were selected in a way that they should have minimum writing skills that permit them to write the basic questions for the group which they shared with other groups in a whole class discussion as mediated by the teacher. The teacher prompted groups' leaders to share their answers with the rest of the class. The teacher facilitated the discussion and wrote all questions on

the board and demonstrated whether the provided questions related to the passage. After a final agreement on the questions, each group was encouraged by the teacher to make the necessary revisions for their final questions. Students were allowed to be engaged in this activity as many times as needed to achieve higher accuracy generating questions that can be understood and, thus, answered by others. The purpose of this activity was to demonstrate to students the importance of generating good questions, exactly as good readers do, that lead to accurate responses. Example questions include the following: Which sentence best tell the story...? What caused...? Who is...? As time progresses, students were encouraged to form more thorough questions.

*Investigating for meaning.* As students move from upper elementary grades to middle school grades, the curriculum demands become more diverse and complex. Especially, in the content area subjects, where students are required to read and comprehend abstract facts in science, mathematics, and social studies (Baker et al, 2004; Hall, 2004; Gajria et al., 2007; Lederer, 2000). Thus, the need to continuously expand knowledge about new concepts and vocabulary becomes essential for students (Dixon-Krauss, 1996), especially for students with LD, who typically have made several failing attempts trying to cope with school's learning content (Guthrie & Davis, 2003). One way to obtain such a goal, as argued by Dixon-Krauss (1996), is to integrate literature with content-area texts. Such texts allow the teacher to foster students' learning within their zone of proximal development. Vygotsky believed that scientific concepts associated with content area concepts, for example, move students' spontaneous awareness of concepts to a higher

level of awareness, abstraction, and control, forming a ZPD that the reader has not achieved yet (Dixon-Krauss, 1996).

In the 5MCS students were taught to strategically investigate and explore new concepts and puzzling words, and expand their knowledge of interesting terms they encounter while reading. The teacher posed several questions to scaffold students' use of this strategy. Such questions included: 'Are there any words or phrases that confused you?' 'Can you look for clues to help you unpack the meaning or confusion of these words?' 'What additional sources you may use to uncover the meaning of these concepts or phrases?' In the case of narrative texts questions may include the following: 'Are there any cultural or religious references that you would like to clarify?' 'How might you have responded in that particular situation in which the main character found himself?' Further, the teacher can direct students' attention to use other clarifying strategies when they encounter a new word. Such strategies may include reading the portions of sentences before and after the new word to see if they give clues to the word's meaning. If the word is still unclear, they can look it up in a dictionary.

This activity was performed several times until students became more oriented with its implementation. After students showed some confidence in using this strategy, the teacher provided them with additional reading segments as part of the daily activity for further practice. Students in their groups first each highlighted the unfamiliar words and then all group members shared their words and tried together to unpack the meaning of each word. Once all groups have investigated all words they make a list to share with

the rest of the class upon the teacher's request. This activity was explained to students as an investigative process aiming to unpack the mystery embedded in the text.

*Schematic visualizing.* Because most of the classes at the middle school level use informative texts that incorporate factual information, which many students with LD find less familiar and less engaging, the need to learn about these texts' structure is crucial (Graham & Bellert, 2004). Informative texts, in contrast to narrative texts, are most likely to incorporate a wide range of text structures (Graham & Bellert, 2004; Meyer & Rice, 1982; Meyer, Wijekumar, Meier & Johnson, 2006; Wijekumar & Meyer, 2008) Gersten et al. (2001) state six major expository text structures, a) description of characteristics, traits, properties, or functions, b) sequence of events, c) explanation of concept or terminology, d) definition-example, e) compare-contrast, and f) problem-solution/causeeffect. These various text structures can be taught to students to facilitate their reading comprehension using several cognitive strategies.

Creating a schematic visualizing, also referred to as a graphic organizer, is one of the powerful strategies found to be effective with struggling readers (Graham & Bellert, 2004; Kim et al., 2004; Meyen, Vergason, & Whelan, 1996). Graphic organizers are visual displays used to organize information, intending to facilitate the learning of textual materials (Kim et al., 2004; Meyen, Vergason, & Whelan, 1996). The idea behind the use of graphic organizers/schematic visualizing is the understanding that the individual's learning is highly influenced by an existing knowledge referred to as cognitive structure. Kim et al. (2004) explain that when the cognitive structure expands with incoming information or concepts, then learning occurs.

The use of schematic visualizing alerts students' understanding to the organization of the text and to the relationship between the different concepts and ideas described in the passage. Graham and Bellert (2004) argue that schematic visualizing assists students not only in comprehending the text, but also in memorizing facts and storage, and analyzing information. Further, these visual representations assist students who have limited vocabulary knowledge, because they serve as mental images in simplifying complex concepts and describe them in as less words as possible. This type of cognitive image was utilized as an integral activity in the 5MCS.

Students were taught to look for the type of text, such as narrative or informative, and to think about the structure of the text or how the concepts were described in the text, such as, sequence events for narrative or cause effect for informative texts. Students were provided by five common text structures and were asked to discuss within their group to which of the provided structures they thought the text was designed.

*Summarizing*. Summarization strategies have been considered by researchers as one of the most important components of reading comprehension (Duke & Pearson, 2002; Gersten et al., 2001; Pressley, 2006, Williams, 2006). Nearly all multiple strategy instruction research integrates summarization as a main strategy for the understanding of text (e.g., Gajria et al., 2007; Gersten et al., 2001; Guthrie et al., 2004; Liang & Dole 2006; National Reading Panel 2000; Rosenshine & Meister, 1994; Sencibaugh, 2007; Trabasso & Bouchard, 2002).

Duke and Pearson (2002) argue that instruction and practice in summarizing main ideas embedded in the text does not only improve student's ability to summarize, but also

it improves their overall comprehension. The idea behind summarization is the assumption that humans do not recall everything they encounter (Pressley, 2006). Reading is no exception. In fact, due to the memory problems that many students with LD face while reading (Swanson, 1994), the need for such a strategy is essential. Teaching students how to summarize different types of passages needs to be mediated in such a way that allows students to understand the gist or main ideas of the text. According to Pressley (2006), there are several layers of main ideas, at the overall level of the book or text, and at the lower-level which is the chapter or paragraph levels.

Pressley (2006) explains this process in the following example. When the reader reads the first sentence in a given text, he or she will attempt to encode the main points embedded in the sentence and hold these ideas in active working memory for later use while reading the next sentence. Once the reader reads the next sentence, he or she will attempt to connect between the information of the two sentences and encode both sentences to form a new idea that will be held, again, in the working memory for the upcoming sentences. This process will continue until all sentences in the paragraph are read and synthesized into a new short version of the text constructed by the reader. This new understanding will be summarized in a short statement that reflects the 'gist' of the text. Such inferences are based on the reader's background knowledge and the information provided by the text (Pressley, 2006, p. 53).

The sequence of predicting, questioning, investigating for meaning, schematic visualizing, and summarizing main ideas continued on to the following segment until all segments were completed. The teacher mediated the use of these strategies intensively

until students become routinely independent. Then, students were able to apply these strategies within their own groups.

#### Summary

The ability to read and comprehend texts and other school material is critically important for the academic success of all students. This is especially important for students with LD at the middle school stage. Students with LD at this stage are challenged by intensive and complex textbooks, most of which are informative in their structure. These types of texts appear in all content areas. In addition, students with LD exhibit characteristics, such as lack of strategic learning, difficulties in regulating their learning monitoring their reading, and applying appropriate reading comprehension strategies. Consequently, their self-efficacy and engagement are affected as well.

Cognitive strategy instruction has been found to be effective, particularly when combing several strategies together. The research has identified several cognitive strategies as superior for comprehending texts, they include predicting, questioning, investigating for meaning, schematic visualizing, and summarizing main ideas. Several strategy based models were developed in the past two decades that incorporate these strategies in various ways. Among such approaches, PALS and RT were widely reported to have yielded substantial results for students with LD. These models, however, were developed and validated for native and none native English language speakers in the USA context.

Palestinian-Arab middle school students with LD may benefit from a modified cognitive strategy instruction that builds on their unique social and cultural context.

Further, Palestinian-Arab students with LD may benefit from an appropriate selection of socially and culturally relevant material that meet their educational needs. The 5MCS model can be an appropriate model for Palestinian-Arab middle school students with LD. It mediates cognitive strategies for reading comprehension, promotes reading monitoring, improves comprehension performance, and potentially enhances student's self efficacy.

### CHAPTER III

### METHODOLOGY

The purpose of this study was to investigate the impact of mediated cognitive strategy instruction on the reading comprehension performance and self-efficacy of Palestinian-Arab middle school students with LD. Specific instructional models, such as Peer-Assisted Strategy Instruction (PALS) (Fuchs et al., 2001) and Reciprocal Teaching (Palincsar & Brown, 1984) served as guides for the instructional procedures used in this study. These strategies were initiated and developed within a sociocultural theory. This chapter describes and justifies the design of this study. The chapter lays out the methods used for exploring the following research questions:

- Does reading instruction using culturally relevant high-interest/low-level texts improve the reading comprehension of Palestinian-Arab middle school students with LD, compared to traditional instructional procedures?
- 2. Does instruction in the mediated cognitive strategy (5MCS), when using culturally relevant high-interest/low-level texts, improve the reading comprehension of Palestinian-Arab middle school students with LD, a) when assessed by a standardized measure and b) when assessed by a researcher made measure?
  - 3. How does reading using culturally relevant high-interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?

4. How do the teachers value the 5MCS practices that differ from traditional culture-based instructional procedures?

## Rationale for Mixed-methods Research

A mixed-methods research was implemented to respond to the complexity of the research questions. Due to the nature of this study, which involves variables that can be best observed and described qualitatively, including engagement and self-efficacy, and other variables appropriately measured quantitatively, including comprehension gains throughout the intervention, a mixed-methods research was utilized. The current tendency in social science research encourages the use of multiple methods to capture humans' behaviors from different perspectives (Creswell, 1994, 2003; Klassen & Lynch, 2007). A mixed-methods research offers an insider perspective on how children who are involved in the study interact under certain conditions (Klassen & Lynch, 2007). Mixed-methods research is defined as single studies that include the process and procedures for collecting, analyzing and inferring both quantitative and qualitative data, based on the priority of the research (Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003). According to Tashakkori and Teddlie (2003), mixed-methods research has an advantage over quantitative or qualitative being conducted separately, in that mixed-method research allow the researcher to "simultaneously answer confirmatory and exploratory questions, and therefore verify and generate theory in the same study" (p. 15).

Vygotsky (1978) theorized that psychological processes emerge in contextualized, wholistic activities. Similarly, human behaviors, such as, reading comprehension, and engagement and self-efficacy occur in social contexts (Denzin & Lincoln, 2000; Klassen

& Lynch, 2007; Palincsar & Klenk, 1992). Such behaviors can be measured and described quantitatively and qualitatively. By applying a mixed-methods approach in this study, qualitative and quantitative triangulation sources allowed for mutually validated data (Erzberger & Kelle, 2003). Creswell (2003) explains that a researcher employing mixed-methods research must consider four areas when designing the study. These areas are (1) the implementation sequence of data collection, (2) the priority within the two research methods, (3) the integration of the two methods, and (4) the overall theoretical perspective of the study. In this study, the implementation sequence of data collection proceeded in a concurrent approach. That is, the qualitative and the quantitative data were completed as one phase of data collection.

Following descriptions of the participants and setting for this study, the research procedures, including a detailed description of how the 5MCS Strategy was taught to students, will be provided. A comparison group design was used. Students in the first class (Extended Condition) practiced the 5MCS across the eight weeks of intervention, using culturally relevant high-interests/low-level reading materials. Students in the other condition (Reduced Condition) used the same materials used for the Extended Condition. However, they received traditional reading instruction for the first three weeks of intervention, following that they too participated in the 5MCS. With this design, both the impact of the 5MCS on students' reading comprehension and the influence of the strategy and culturally relevant materials were assessed. Multiple measures of reading comprehension and strategy performance were analyzed using statistical procedures. Qualitative analyses were employed to assess the impact of the experimental

interventions on students' self-efficacy, as well as to consider the impact of using culturally relevant materials. Details of the data analysis will conclude the chapter.

## **METHODS**

# Setting

The study was conducted in a special education middle school for Palestinian-Arab children diagnosed with LD. The school, Al-Fursan, is located in the Center-North of Israel. Currently the school has 70 students between grades 7 to 9, 27 of whom are in seventh grade. The goal of the school is to educate these students for the remainder of their high school years, so that they may obtain a high school diploma. Al-Fursan was officially established in 2007, due to emerging needs and pressure from the local authorities and high schools, who failed to provide proper education for students with learning disabilities. Hence, these students come from different primary schools in the city based on recommendations from school psychologists and staff. All students who attend Al-Fursan are diagnosed with LD and/or other mild disabilities, particularly behavior disorders. Students were referred to Al-Fursan from the surrounding primary schools after they had been assessed by school psychologists of their previous schools and found to be eligible for full special education services.

The usual procedures used for special education eligibility are the following phases: (1) initial identification of learning difficulties in the general education classroom (in the regular school) with assistance from a school designated special education teacher or on-site team; (2) a discussion of the student's academic challenges is addressed at the school level with the presence of parents after they have been informed; followed by (3)

individualized work with the student. Based on the results of this individualized intervention, if the student persists with his or her difficulties in the targeted academic areas, the special education team then proceeds to the next phase; (4) officially informing the parents for initiating a full psycho-educational assessment which includes psychological assessment and educational assessment. Very common assessment measures used for the Palestinian-Arab minority in Israel include, for example, an Arabic version of WISC-R normalized for Arabic speaking populations. In addition, a referred student is assessed by other non-normed measures including, but not limited to, Rey Complex Figure, Test of Nonverbal Intelligence (TONI-3), the Beery-Buktenica Developmental Test of Visual-Motor Integration, Fourth Edition (Beery VMI), and other academic specific tests in the student's language, in areas such as reading, writing, and mathematics. Once all results are received, the next phase (5) is deciding on a placement for the student. The assessment team, mostly consisting of a school psychologist, meets with the placement team which includes, in addition to the school psychologist, special education personnel, a school administrator representative, and a child guardian who should be informed in the process. Finally, (6) the child is placed in a best match setting according to the special education service available.

#### **Participants**

In order to effectively answer the research questions, participant selection was performed based on both purposeful and convenient sampling (Rumrill & Cook, 2001). Convenient sampling allows for purposeful selection of participants who met the research criteria. This research is geared to examine students' achievement in reading

comprehension within a mediated instruction in which groups of students with LD are formed to work collaboratively together and learn how to apply cognitive strategies. Thus searching for such conditions was only available in Al-Fursan's school. The participants of the study were placed in self-contained classrooms in one school which was exclusively established recently for the purpose of educating students who are diagnosed with learning disabilities. Two special education teachers and 18 seventh-grade children participated in the study.

*Teachers.* Two special education certified teachers, who are the main teachers for the participating classrooms served as the two participant teachers in the study. Both teachers were females, in their early 30's, with Bachelor's degrees in special education and held teaching certificates from Israeli based colleges. One teacher has 9 years of experience in special education and was pursuing her master's degree in Special Education at the time of the research. The other teacher has 6 years of teaching experience in the field of special education, but was not involved in any graduate program. Both teachers expressed their willingness consent to fully cooperate and participate in the study.

*Students*. Descriptive information in the form of marker variables, as described by Keogh, Major, Omori, Gandara and Reid (1980) was collected to provide descriptive benchmarks to facilitate the interpretation of the relevant data for the study. Marker variables are described by Keogh et al. (1980) based on the work of the UCLA Marker Variable Project as "reference points used in describing research samples. They are measures or descriptors that individual investigators agree to use in common, in addition

to whatever other sampling or research techniques are utilized to whatever other sampling or research techniques" (p. 21). These markers are divided into three sets: a) background information which includes, number of subjects, chronological age, sample breakdown by age and ethnic background, socioeconomic status (SES), county where the study was completed, and grade level; b) substantive markers which may include general intellectual abilities, achievement in basic educational skills, and social-behavioral adjustment, and c) topical markers that are of interest to the research itself. This may include attention span, memory, auditory and visual processing, and motor skills.

The 18 seventh-grader students identified with LD were placed in two separate classrooms with 9 students for each classroom (these two classes will be referred to as 'Extended Condition' and 'Reduced Condition' hereafter). Students' ages range from 12 years and three months old to 13 years and 10 months old at the start of the study. In the Extended Condition there were four girls and five boys, while in the Reduced Condition there were three girls and six boys. All students were diagnosed with learning disabilities according to the school's record, and were all assessed by a school psychologist using WISC-R IQ following assessment and placement phases described in the setting section. See Table 3.1 for detailed IQ data.

Variable	Extended Condition $(N = 9)$	Reduced Condition (N = 9)		
Gender				
Male	5	6		
Female	4	3		
Age (years-months)				
Mean	12:11 (SD= 0.5)	12:10 (SD= 0.4)		
Range	12:04-13:06	12:03-13:10		
WISC-R IQ General				
Mean	89.4 (SD=4.09)	88.2 (SD= 4.2)		
Range	80-92	79- 95		
WISC-R Verbal				
Mean	84.2 (SD= 7.9)	83.1 (SD=4.4)		
Range	75-96	76-92		
WISC-R Performance				
Mean	92.8 (SD= 7.07)	95.3 (SD=6.7)		
Range	80-99	80-106		
Socioeconomic Status (SES)				
High	0	0		
Medium	4	3		
Low	5	6		

Table 3.1Descriptive Information for the Two Intervention Conditions

According to the existing records, there were three students with suspected attention deficits disorders (ADD) (combined with LD) (comorbid with LD), two students in the Extended Condition and one student in the Reduced Condition. Nevertheless, none of these students were treated for ADD nor directed for neurological assessment. Most students of the Extended Condition and the Reduced Condition (55% and 66% respectively) have come from low socioeconomic backgrounds, while the rest came from middle income background and none was reported from high income backgrounds. See Tables 3.2 and 3.3 for descriptive background information for individual students in each of the two conditions.

Descriptive Background Information for Individual Students in the Extended Condition									
Groups	Student <sup>1</sup>	Sex	Age (years:	SES (L,	Disability	Behavioral			
			months)	M, H)	diagnoses	problems			
Group	Siham: Group	Female	13:03	Middle	LD	No			
1	Leader								
	Othman: 1st	Male	12:06	Low	LD	No			
	reader								
	Hussain: 2 <sup>nd</sup>	Male	13:01	Middle	LD	Yes			
	reader								
Group	Marwan: group	Male	13:03	Low	LD	No			
2	leader								
	Munther: 1 <sup>st</sup>	Male	12:10	Low	LD	Yes			
	reader								
	Taleb: 2 <sup>nd</sup> reader	Male	13:02	Low	LD	Yes			
Group	Mayada: group	Female	13:06	Middle	LD	No			
3	leader								
	Ana'am: 1 <sup>st</sup>	Female	12:04	Low	LD	No			
	reader								
	Fulla: 2 <sup>nd</sup> reader	Female	12:05	Middle	LD/ADD	Yes			

Table 3.2	
Descriptive Background Information for Individual Students in the Exte	end

Note. 1. All names are pseudonyms; SES = socioeconomic status; LD = learning disabilities; No. of absences was recorded during the days of intervention.
# Table 3.3

Descriptive	Background	Information	for	Individual	Students	in the	Reduced	Condition
1	0	./						

Groups	Student <sup>1</sup>	Sex	Age (years:	SES (L,	Disability	Behavioral
			months)	M, H)	diagnoses	problems
Group	Azat: group	Male	12:10	Low	LD	No
1	leader					
	Ameen: first	Male	12:11	Low	LD	No
	reader					
	Shareef: second	Male	12:03	Low	LD	No
	reader					
Group	Saleem: group	Male	12:11	Middle	LD	No
2	leader					
	Hani: first reader	Male	12:10	Middle	LD/ADD	Yes
	Samer: second	Male	13:10	Low	LD	Yes
	reader					
Group	Rama: group	Female	13:00	Medium	LD	No
3	leader					
	Hind: first reader	Female	12:03	Low	LD	No
	Yasmin: second	Female	12:09	Low	LD/ADD	Yes
	reader					

Note. 1. All names are pseudonyms; SES = socioeconomic status; LD = learning disabilities.

All students spent all of their instructional time in the special education school. It was presumed that that students of both classes possessed similar reading comprehension abilities in Arabic language according to a non-standardized mapping test which was administered by the two main classrooms' teachers at the start of the academic year. The two main teachers designed and administered a mapping test in literacy that includes spelling, decoding, grammar, vocabulary, and comprehension. The mapping test included texts that were varied in difficulties from the third through the sixth grade levels. Upon receiving the results, the two main teachers conferred and ranked all students from high to low and divided them equally into the two classes. It is worthwhile mentioning here that there is a third class of 9 seventh grade male students, but due to their low decoding ability they will not be part of the study. As reported by the school principal, those students received the lowest grades in the mapping test, and, thus were placed in the third class for individualized basic reading intervention including decoding and phonic skills. All students came from the same geographic area, except for one student who was bused from a nearby town.

### Instructional Materials

All instructional materials are described and/or formatted in English language for this chapter. In the actual study all materials including the reading comprehension tests, reading passages, and students' cueing cards and index were provided in Arabic language. Only the pre-post reading comprehension tests and reading passages exist in Arabic language; all other materials were adopted and translated from English language based materials. See Appendices A- C for translated samples of the instructional

materials, including a translated weekly comprehension passage followed by comprehension questions, cueing cards for questioning and schematic visualizing. *Instructional Materials Selection Process* 

For the purpose of this study, a set of 8 informative and narrative passages, in the form of high/interest-low/level texts at the instructional readability level of the students were selected from texts that cover an array of topics. The selected texts included passages that range between 250 and 300 words in length each, at the fourth grade reading level. The narrative passages cover topics that are of interest to early teens, including adventures and folkloric tales, for example 'Ash'ab's Funniest Stories'. The informative passages included scientific topics, e.g., 'Journey to the Moon', 'Parenting Instinct Amongst Birds' and 'Mysterious Wild Animals'. See Table 3.4 for a brief description of a randomized list of passages.

Table 3.4

Brief Description of Passages Used for the Intervention (Both Conditions)

Week	Title	Type of passage	Length of Passage in
number			words
1	Parenting Instinct Among	Informative	310 words *
	Birds		
2	The Ignorant Friend	Narrative	283 words
3	Mysterious Wild Animals	Informative	255 words
4	Funniest Stories of Ash'ab	Narrative	292 words
5	The Prophet and Abu-	Narrative	304 words
	Eldahdah		
6	Journey to the Moon	Informative	256 words
7	Sa'ead and the Magical	Narrative	266 words
	Hen		
8	The Ostrich	Informative	258 words

The final selected texts were chosen from a pool of 30 texts chosen mainly from the new Palestinian curriculum and Lebanese curriculum. The reason for choosing some of these passages from the new Palestinian curriculum are a) the Palestinian-Arab children who live in Israel were never exposed to the curriculum before, as they have their own Israeli Arabic version curriculum which means that the new passages would not be familiar to the participants of this research; b) the new Palestinian curriculum is criterion referenced for grade levels, which means they are consistent with the reading level of each grade; and c) the Palestinian curriculum can provide passages that are culturally relevant, especially Palestinian folkloric narratives. Thus, the selected passages from the Palestinian curriculum were considered new for the students. In addition to the passages selected from the Palestinian curriculum, other narrative passages were selected from the Lebanese curriculum 'Al-Mushawek' to supplement the shortage of the narrative passages in the Palestinian curriculum. The selection of the final passages was made by the researcher with revision and final approval of the two classroom teachers.

Because the exact reading comprehension level of individual students could not be determined in advance, three consecutive in-class observations over three days were conducted by the researcher for the purpose of establishing a baseline. In these days the teachers of both conditions selected two comprehension passages, one at the fourth grade level, while the other passage was selected at the fifth grade level from the Palestinian curriculum. The researcher designed a set of two multiple choice comprehension tests which included factual and inferential questions. Upon collecting the data, a decision was made in consultation with the two teachers that the best match reading level for most students is the fourth grade level. Thus, it was determined that the students would receive instructional materials at the 4<sup>th</sup> grade level.

*Cueing Cards.* Students received cueing cards for each of the 5MCS activities. These cueing cards helped the students to smoothly switch between the activities and to move from one step to another. The prediction cueing card, for example, prompted the leader of the group to ask questions and to lead the group through the process. All groups

received help from the teacher as they went through the predictions, until the skill were mastered. Once the group discussed all predictions using prompts listed on the cueing cards, the leader of the group used the questioning cueing card to lead the group through the remaining activities of this step. The leader would, for example, stop at the end of each segment and ask questions, as indicated on the cueing card, about the content that is being read. These cards were likely helpful for all students, but especially for the students who had more difficulties in reading, because of the additional images that accompany the text and their simple structure. Figure 3.2 shows only an approximate translation of the cueing cards all combined on one page in English. The cueing cards, however, were displayed in a more simplistic form in Arabic language with a larger font size, and each activity of the 5MCS had a separate cueing card to minimize distraction of too many cueing cards on the one page.

Figure 3.2

# Cueing Cards for the 5MCS Activities

Activity 1: Predicti	ng Cueing Card
Predicting	Predict events & share prediction with your group members.
We know to Predicting The Newspaper with Ziek331	Questions to ask about predictions:
	I wonder what will happen next!
	What do you think will happen?
	What makes you think this way? What is your evidence?
followed by	Make a group prediction & share it with whole class.
reading	Leader: now, let's talk about our predictions.
C	Silent reading for each segment (2-3 minutes). Each student in the
	group will orally read each segment for about 2 minutes.
	Correct mistakes and provide feedback to the reader.

# Activity 2: Questioning Cueing Card

Questioning Generate questions.



Leader: let's think of best questions that go with this segment. What do you think a good question for this segment would be? Share generated questions with group partners.

# Activity 3: Investigating for Meaning Cueing Card



Highlight words that are difficult to read, or unfamiliar or interesting words.

Share your list with group members. Share your list of words with whole class.

# Activity 4: Schema Visualizing Cueing Card

Schema visualizing Choose a plot that best represents the ideas being read. Share your selection with group partners.



# Activity 5: Summarizing Cueing Card



Summarize each segment or paragraph in no more than two sentences. Share your summary with your group partners and with whole class. *Index Cards*. Students received index cards for writing notes and comments while engaged in the activities. These cards allowed for student's self-monitoring while working. Further, these index cards were a useful resource for the teacher to evaluate the progress of every student and for providing appropriate feedback when weekly progress was discussed with the student. An example of an index card is shown in Figure 3.

Figure 3.3

Student's Index Card (Example)

1.	Workcome to Mnedicing The Revergager with Davidgi	 
Reasons for	r my predictions are:	
Teacher's Fee	dback:	

My predictions for this passage are:

### Procedures

#### Research Consent and Time Frame

Prior to initiating the research, all parties involved in the research process approved the study and granted consent to participate. The first stage was performed through emails with the school superintendent who showed interest in the research and directed the researcher to the school for the potential research. In summer 2008 the school principal was contacted by phone and a meeting was conducted with him mediated by the superintendent. An initial approval was granted by the principal. In a later stage, in January 2009, an official letter was sent to the superintendent asking for official permission to contact the school and conduct the research (see Appendix A for a request to conduct research project in a high school for students with LD). A week later the superintendent replied with an official approval letter.

During the month of February-March 2009 an approval from the Institutional Revision Board (IRB) of Boston College was sought by the researcher. Upon the IRB's official approval, the researcher initiated contact with the school's teachers who gave their consent for the research (see Appendix B for a translated letter of informed consent in English, followed by the original letter in their first language-Arabic). Immediately, after the teachers' approval, a letter was sent to the students' parents (see Appendix C for a translated letter in English, followed by the original letter in Arabic language). All parents' consent forms were returned the following day by the students who were invited on the same day to participate in the study and were given an assent form (see Appendix

D). All students signed the form after it was orally read and explained line by line to them by the researcher in the presence of the teachers, in the separate classrooms.

## Initial Observations and Pretest

Prior to conducting the study both classes were observed by the researcher for three consecutive days. No treatment was introduced to either class. The purpose of the observation was to establish a baseline and to conduct a reading comprehension pretest for both classes. In the third day, all students of both classes were pretested with a standardized test of reading comprehension, the "Diagnostic Manual of Reading Evaluation" (DMRE). The test has been previously developed and administered as a standardized reading comprehension battery for grades 1-6 in Jordan.

The reasons for choosing this standardized test include that such tests do not exist for Palestinian children, and, there are high similarities between Palestinian and Jordanian populations. Thus, the tests were considered highly compatible to the Palestinian sample. The Jordanian students are Arab speaking and use the same standard Arabic language used by students of the study sample, and they share similar linguistic, cultural, and religious values with Palestinian-Arabs who live in Israel. Finally, the Jordanian reading comprehension battery has two sets of similar sub-tests, forms A and B.

'Form A' of the comprehension test was used as a baseline pretest for all students who participated in either condition at the beginning of the study. Later at midpoint of the study, four weeks later, 'Form B' of the comprehension test was administered for both conditions. At the end of intervention, eight weeks later, both experimental groups

received 'Form A' of the comprehension test again. It was originally planned that a Form B of the comprehension test should be administered as a delayed test one month upon the completion of the intervention, for the purpose of measuring comprehension skill maintenance. However, due to time limitation and the fact that the posttest was only administered two weeks prior to the end of school year, the delay test was not possible to be administered.

## Forming Students' Triads

Within each class (Extended Condition and Reduced Condition) students were ranked from top performing in reading comprehension to lowest performing and were divided into three groups to represent three levels, high, middle, and low. Originally, students of each condition were divided into triads based on their abilities according to the following two stages:

(1) All students for each condition received a ranked number that was used only by the teacher to order students within each of the triads based on their reading performance. The overall ranking included the top three performing students who were assigned the letter A, the middle group included the fourth to sixth top performing students who were assigned the letter B, and the last group included the seventh top performing student to the ninth performing student, they were assigned the letter C. Students of the Reduced Condition were assigned the ranking numbers only at the fourth week of the intervention.

(2) The teacher, with the assistance of the researcher, pulled one student from each ability group and formed triads that represented the three ability levels. The first

triad included the top performing student from 'group A', joined by the top performing student from 'group B' and the top performing student from 'group C'. The second triad was selected according to the same procedure used to form the first triad; the second highest performing student from 'group A' was placed in the same triad with the second highest performing student from 'group B' and second highest student from 'group C', and so forth until all triads were formed. In case of absentees, students of the same group remained in their groups. In this case they alternated the reading and coaching roles themselves.

The aforementioned plan, however, was not followed entirely by both teachers due to difficulties of matching males with females that emerged in the first weeks of the intervention. Some of the boys refused to be placed in a group of two female and one male only. There was one exception to this rule. A female leader was assigned to a group of two males and one female. In addition to the gender issues, there were other incidents where the teacher agreed to replace some of the students because of a disagreement between the boys in the groups on who to work with. The final matching in the Reduced Condition, for example, yielded one balanced female group that represented all three levels, but two unbalanced male groups. One group had a strong leader and two students who are of a first reader ability. In the second group, on the other hand, it was formed of a one strong leader and two poor decoders being in the same group.

#### Instructional Procedures for the 5MCS

## Extended Condition

The study for the Extended Condition, which was conducted over an eight-week period, included a full implementation of the 5MCS activities using High/Interest-Low/Level narrative and informative relevant texts. In addition to the baseline observation, which took place one week prior to the study, the intervention consisted of a pretest, midpoint, and posttests; a) teacher mediated training sessions in the first week (8 sessions); and b) implementation of the 5MCS instruction, across all seven weeks (week 1-7). Students received 42 sessions in total as follow: (a) 3 sessions for the pretest, midpoint-test, and posttest conditions (these sessions ranged between 45 to 60 minutes each); (b) eight 45-minute sessions of strategy training in the first week of intervention; (c) 24 45-minute sessions of 5MCS implementation; and (d) seven weekly progress tests. See Table 3.5 for an overview of the intervention schedule.

## Table 3.5

3 sessions of

each.

45-60 minutes

## Overall Sessions Distribution for the Extended Condition

## Extended Condition. Five Mediated Cognitive strategies (5MCS) Intervention Schedule.

Pre intervention	Week 1	Week 2	Week 3	Week 4
week. Baseline/pre- intervention. Observation: 3 sessions.	8 sessions: Modeling and training for 5MC	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC
Pretest Form A: 1 session.	1 session: progress test #1	1 session: progress test #2	1 session: progress test #3	1 session: progress test #4
project and strategies.				Midpoint test Form B
	Week 5	Week 6	Week 7	Week 8
	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC	1 session: Posttest Form A
	1 session: progress test #5	1 session: progress test #6	1 session: progress test #7	
	Overall number og	f intervention sessi	ons and duration:	
Pretest, midpoint test, and posttests:	weekly tests: 7 sessions of 45 minutes each.	5MCS training: 8 sessions of 45 minutes each.	5MCS all strategies: 24 sessions of	Total sessions = 42

In the first week of the intervention, one informative passage in the form of highinterest low-reading level, at the fourth grade level, was used to model all activities involved in the 5MCS. The passage consisted of five segments (300 words) to

45 minutes

each.

demonstrate the use of predicting, questioning, investigating, schema visualizing, and summarizing strategies, one at a time. Once the first strategy (prediction) was introduced and modeled by the teacher and sufficiently practiced by the students they practiced it again on the following days as the other strategies were introduced. The same procedures were applied to all strategies during the first week.

Originally, all strategies were planned to be administered by the teacher until sufficiently practiced by the students during the first week of the intervention. However, the students showed some difficulties mastering all strategies that were introduced in the first week, especially grasping the summarizing and schema visualizing concepts. The researcher advised the teacher to continue with the following weeks of the intervention and to mediate to triads while they are practicing on the strategies combined. Also, the teacher of the Extended Condition, was advised by the researcher to frontal teach selected segments of the given passages as long as needed throughout the intervention weeks.

In the following 6 weeks (weeks 2 through 7), all students in the Extended Condition, received four 45-minute sessions of 5MCS instruction weekly and one additional session was devoted for a reading comprehension weekly progress test. Each week, students received one passage on alternating weeks, one was narrative and the other one was informative.

The narrative and informative passages were alternated so that the students would be trained on four narrative passages and four informative passages throughout the intervention period. In the first week of applying all 5MCS activities (week 2), students received an informative text, 'The Birds and Parenting'. This text was selected due to its

lengthy passage which allowed for sufficient practice on the paragraphs and because it included all elements of 5MCS including a) the anticipation of events, which stimulates students' prediction, b) complex plots that allow for questioning the ideas and events in the passage, c) words that are difficult to read or new vocabulary that would be of interest to investigate, d) a compare-contrast passage structure to enable learning of the compare-contrast schema, and e) sufficient text to enable students to practice summarizing the main ideas that are embedded in the passage.

## **Reduced Condition**

A comparison condition (referred to as 'Reduced Condition') was used to (a) assess the impact of High/Interest-Low/Level culturally relevant materials on reading comprehension during traditional reading instruction, and (b) compare the effectiveness in the 5MCS to traditional practices. The students of the Reduced Condition received the same High/Interest-Low/Level culturally and socially relevant materials that were used for the Extended Condition at all weeks. The Reduced Condition received a shortened implementation of the 5MCS activities, in weeks four through seven only. In weeks 1-3 the teacher in the Reduced Condition using traditional teaching methods, which were the practices they typically employed. (Conversations with the teachers and prior observations indicated that the traditional teaching methods included non-strategic, direct instruction and drilling of basic skills. Procedures for documenting the tradition practices used in the Reduced Condition are described in the Data Analysis section.)

The participants in the Reduced Condition were observed for three days prior to the intervention for the purpose of establishing a baseline assessment. The participants received 42 sessions of exposure to the culturally and socially relevant material which included the 4 weeks of the 5MCS implementations as follow: (a) 3 sessions for the pretest, midpoint-test, and posttest conditions (these sessions were about 45 to 60 minutes each); (b) 12 traditional instruction sessions of 45-minute each; c) eight 45-minute sessions of strategy training in the week four of the intervention after conducting the midpoint-test; (c) 12 sessions of 5MCS implementation combined with the use of High/Interest-Low/Level relevant materials; and (d) seven weekly progress tests. See Table 3.6 for a layout to all sessions.

## Table 3.6

# Overall Sessions Distribution for the Reduced Condition

# Reduced Condition. Five Mediated Cognitive strategies (5MCS) Intervention Schedule.

Pre intervention	Week 1	Week 2	Week 3	Week 4
week.	4 sessions Using exact	4 sessions Using exact	4 sessions Using exact	8 sessions: Modeling and
Baseline:	materials used for condition 1.	materials used for condition 1.	materials used for condition 1.	training for the 5MCS.
Observation				
(3 sessions)	Traditional teaching.	Traditional teaching.	Traditional teaching.	
Pretest (1	C	C	C	
session).	1 session: progress test #1	1 session: progress test #2	1 session: progress test #3	1 session: progress test #4
Introducing the project	1 0	1 0	1 0	1 session: midpoint test.
strategies.	Week 5	Week 6	Week 7	Week 8
	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC	4 sessions Implementing all 5MC	1 session: Posttest Form A
	1 session: progress test #5	1 session: progress test #6	1 session: progress test #7	

Overall number of intervention sessions and duration:

Pretest,	weekly tests:	5MCS training:	5MCS all	Total sessions
midpoint test &	7 sessions of 45	8 sessions of	strategies:	= 42.
posttest:	minutes each.	45-minute each.	12 sessions of	
3 sessions of				
45-60 minutes			45-minute each.	
each.			12 sessions of	
			tradition	
			teaching.	

Teacher's Role in the 5MCS Activities

Teachers in both conditions followed the same teaching practices when they implement the 5MCS. The teacher mediated the learning process of all students in the classroom by taking part in the following activities. First, she explained to all students the purpose and importance of engaging in these cognitive strategies and demonstrating to them how such strategies affect literacy acquisition.

Second, the teacher demonstrated and modeled each of the 5MCS strategies separately, starting with prediction, followed by the questioning strategy which was combined with the previously learned strategy (prediction). Upon proceeding to all strategies the teacher ensured that each new strategy was introduced and practiced in conjunction with the previously taught strategies and so forth until all strategies were fully introduced and modeled by the teacher. The teacher also took charge in modeling all strategies together with ample opportunities for students' practice in the triads. Third, the teacher monitored each student's progress individually by providing immediate verbal feedback while students were engaged in the activities. In addition, the teacher provided weekly feedback on each student's progress in the form of a weekly meeting with each student.

#### Teacher's Training in the 5MCS intervention

For the purpose of providing a model for the teachers, the first implementation of the 5MCS with students was conducted by the researcher with the teacher participating as both an observer and a "co-teacher" following Friend and Bursuck's (2006) "one lead, one assist" model of co-teaching. Upon completing the training lessons, the teachers took over and gradually handed over the leading roles of all activities to students. The teachers

of both conditions were able to explicitly train for at least two consecutive sessions. In addition, a one-to-one conversation was conducted with each of the teachers prior to engaging in the 5MCS intervention on the four sources of self-efficacy and how those sources if considered will affect students' engagement.

Further, teachers of both conditions received ongoing biweekly feedback on their work on the 5MCS and guidance on how to follow up with all students individually and in small groups. The sessions took place in the students' classroom in the afternoon period. The days and dates for each of the sessions were continuously changing due to the schools' shifting schedule in which they often had to substitute for other teachers, or meet with various unexpected visitors at the time of the schedule feedback session. In such cases, the researcher attempted to reschedule a time that is convenient to the teachers, each according to her schedule. Finally, the teachers were trained by the researcher prior to conducting the 5MCS for each condition on how to provide weekly feedback to students and how to score their results. Each teacher was encouraged to maintain a daily log to record their progress and to reflect on the process of engaging and implementing the intervention.

## Students' Roles in the Triads

Once the teacher modeled all 5MCS strategies and had provided students with multiple opportunities to practice each activity as needed based on the teacher's judgment, then students were encouraged to take charge and practice leading roles. Students were provided with cueing cards for each activity where they could make their

own notes and comments based on the assigned activity. Students in triads played the following roles: a) the coach, b) the first reader, and c) the second reader.

Originally, these roles were planned to be changed once every week or at the teacher's discretion to allow for equal access to the activities and provide leadership opportunities for all students. These roles, however, stayed stable for the most part due to changes in the groups' abilities in which the second readers were not able to take a leading part. In some cases there where a switch in the roles, especially when the group leader is absent or one of the group members would not cooperate in the activities. In those cases, the teacher would decide who would receive the assigned roles.

Students received prompting cueing cards on how to take roles in their groups (coach, first reader, and second reader). Prior to practice on using the cueing cards, the instructions were read orally by the teacher and explained to all students in a whole class instruction. See Figure 3.4 for definitions of roles and directions.

# Figure 3.4

## Student's Roles in the Group

My Role	What's in the Role
Coach	<ul><li>When you are the coach providing help to partners:</li><li>Make sure that you monitor the time when your partner reads.</li><li>Pay attention to your partners when they ask questions.</li><li>If your partners need help, offer to help.</li><li>Give your partner some hints for help before you give the answer.</li><li>If that does not help, then give the answer.</li><li>If no one knows the answer, ask an expert in the room. (Could be the teacher or an assistant)</li></ul>
First Reader	<ul><li>When you are the first reader:</li><li>You always go first and read one segment/paragraph for 2 minutes or until finished.</li><li>Try to read clearly so that everyone hears you clearly.</li><li>Do not go too fast or too slow, too low or too high, just about right.</li><li>Ask your group leader for help.</li><li>If you still need help, ask the teacher until you understand.</li></ul>
Second Reader	<ul><li>When you are the second reader</li><li>You always go second and read for 2 minutes.</li><li>Try to read clearly so that everyone hears you clearly.</li><li>Do not go too fast or too slow, too low or too high, just about right.</li><li>Ask your group leader for help.</li><li>If you still need help, ask the teacher until you understand.</li></ul>

# Teacher's Modeling of the 5MCS

The following section discusses in detail the process of teacher modeling for all

strategies involved in the 5MCS in addition to feedback provision. Although reciprocal

teaching and peer assisted learning strategies models do not advocate for any specific

order in teaching strategy sequence, it is important to mention that most students with LD lack automatic strategic learning skills and self-monitoring strategies while engaged in academic activities, such as reading (Gersten, Schiller & Vaughn, 2000; Swanson, Hoskyn, & Lee, 1999). Thus, an explicit structure which reflects a strategic order for employing the strategies (Minskoff & Allsopp 2003) was followed for presenting the strategies and the 5MCS routine to the students. Following initial instruction in all strategies, and once each student was fully aware of the specific function and purpose of each of the 5MCS activities he or she was able to freely select the right strategy that matches the condition encountered while reading, regardless of the order in which they were taught. The following section elaborate on teaching all strategies according to the following order: prediction, question generating, investigate for meaning, schematic visualizing, and summarizing the main ideas.

#### Predicting

Introducing the predicting strategy. The predicting strategy was introduced to students using one passage that consist, of five segments, with distinctive elements that can be detected based on clues in each segment. The researcher (hereafter referred to as "the teacher" in this section, unless explicitly stated otherwise, to reflect that [a] the researcher modeled the instruction for the teacher during the first lesson but that they acted as co-teachers and [b] following the first lesson the teacher assumed responsibility for all such activities) asked predictive questions about the content that the students are about to read. Following this the teacher introduced the concept of "predicting." Examples of the meaning of the concept "predicting" were solicited from the students by

the teacher. For example, the teacher illustrated that meteorologists use predicting to predict the weather. The teacher then asked the students about the weather outside the classroom, and whether they think it will be sunny or rainy for the rest of the day, and asked about the signs or logical guesses that are the bases for their predictions.

The teacher encouraged every student to participate in the activity by assuring them that there is no right or wrong answer in predicting, but a good prediction would be drawn from existing data and based on previous experiences. Thus, a student's prediction that the weather will be rainy or possibly snowy in the late afternoon, for example, based on his or her reasoning that there is a fast accumulation of clouds, fast winds, and low temperature would be considered a good prediction. But, if a student brings the rain prediction without providing any existing evidence, such as lack of clouds in the sky, or not feeling any evidence of strong winds or drop in temperature, the teacher will point out to the student that although he or she had brought a legitimate prediction, it is, however, unlikely to happen under such conditions. Therefore, this prediction cannot be considered as a strong guess compared to the previous prediction. From this example, or any similar example drawn from students' vivid visual experiences, the teacher was able to proceed to either another example, if she considered needed.

*Using texts to demonstrate the prediction strategy.* Before reading, the teacher directed all students to look at the passage they have in hand and predict what the content will be about based on the title and images illustrated on the front of the assigned passage. Using the students' suggestions, the teacher modeled how to ask a prediction question or state a prediction statement. See Figure 5 for the predicting cuing card.

Once the teacher modeled the predicting strategy students were asked to practice answering or reasoning their predictions and questions. The teacher used students' answers to brainstorm their ideas and prior knowledge about the present topic. All of their answers were recorded on the board and grouped based on the themes that students brought. Students were positively praised for their answers regardless of their accuracy for the content that was read. The teacher assisted students' predicting by questioning their knowledge about the topic and what they see in the image. The teacher then directed the class to read the first segment.

In the next step the teacher allowed all students to read the assigned segment orally for about two minutes and encouraged them to think about the predictions they posed previous to reading. The teacher, next, read orally the assigned segment to demonstrate to the students how they should reflect on their predictions. The teacher's oral re-reading was part of their daily reading routine in the later application of the strategies. Upon reading the first segment, the teacher directed students to look at the board and examine whether any of the predictions was mentioned in the passage. The student with the best prediction, as judged by the teacher explained to the whole class the reason for choosing the prediction.

Next, at the practice stage, where all students were engaged in their groups, they were encouraged by the teacher to activate their prior knowledge and share their predictions with their partners. They were asked to either write in one sentence or phrase their predictions by answering only one question from the cuing card prompts (see Figure 5), or orally tell the group members what they think will happen next. Their predictions

were recorded by a group member on the index cards provided by the teacher. The teacher listed all predictions on the board and provided feedback on the predictions. Following the same procedure, the teacher proceeded to the next segment and reminded students to think about their predictions and the upcoming information. Upon reading the next segment, the teacher asked students to look at the board and see whether any of the class members had closely predicted the information listed in the text. Although, there was no one correct answer for predicting the content, students were encouraged to explain the basis for choosing their prediction, or ask other students to figure out how it was determined. The teacher continued reading, predicting with the students, and encourage all of them to participate until the reading prediction was completed.

After all predictions were made, students were asked to share their answers with their partners in the group. The teacher allowed for about 3-minute prediction sharing for all class members and to record the answers on the board. The board was divided in a way that reflected the number of segments of the intended passage. The teacher mediated the process and modeled the application of the activity in the first part of the session. In the second part of the session, students were encouraged to share their groups' predictions.

The predicting activity was implemented with all segments of the text. Once students became skilled in this activity, they were prompted to automatically follow the same procedures when given new passages. This applies to group and individual work. The teacher monitored students' engagement in the activity and provided instant feedback to all groups on their work. The main question that students would think about

when they see a new passage is: what do I know about this topic that will help me to predict? (See Figure 3.5 for the predicting cueing card).

Figure 3.5

Prediction Cueing Card

Student's Name:..... Date:.....

Prediction	Narrative Text: Use the following questions to guide you when
statements:	working on narrative text.
	What do you I about this character that helps you predict what s/he
	will do next?
	Given the situation in the story, what will possibly happen next?
	In stories like this one, what usually happens next?
Prediction for	
segment 1	
Prediction for	
segment 2	
Additional	
predictions	
-	

Informative Text:

Use these guiding questions and statements to pose your prediction for each segment: I predict the topic will be about...,

Why I think the author has written about this topic

I guess it will be about...,

What clues does the author or the illustrator provides?

I predict that the next segment will be about...

I know this would happen next because...

Note: you only have to choose one of the questions or statements to answer.

Questioning

The teacher first explained why questioning the content is important, by pointing out that asking good questions will help in looking for the appropriate answers, which will help in understanding the passage. The teacher demonstrated to all students how to generate 'teacher like' questions. The teacher explained to students that there are, in general, two types of questions: a) factual questions, referred to as thin questions, that can be answered directly from the passage and, b) inferential questions, referred to as thick questions that can be answered by thinking about the questions using our background experiences, and to connect our previous knowledge with an existing information provided by the passage. Thin questions will help in recalling information mentioned in the text, and they start with words such as: who, what, where, when, why, how, what if, and I wonder. Example for a thin question: What did the metreologist predicted for tomorrow's weather in the newspaper? The teacher directed her students to look for the answer in the passage which was generated from a local newspaper.

The teacher read more about the definition of the storm "A storm forms in response to an extreme difference in air pressure, driven by the movement of cold and warm air". Another thin question that can be asked is: What is a storm? To demonstrate whether these questions were appropriate thin questions, students were guided to look for the exact answers in the passage.

Proceeding with the next type of questions (thick questions), the teacher explained to the students that this type of questions is looking at the big picture and large concepts (McLaughlin & Allen, 2002). Further, the teacher explained that thick questions, unlike thin questions, are open ended and can be an extension to thin questions. To demonstrate

the latter point, the teacher used the previous question about the storm. She explained that it can be developed as the following: Why are severe storms frightening? To answer this question, the teacher explained to her students that we to look for clues in the passage about the storm. Also, the teacher added, we use our previous experience of what we already know about storms and how they form and what damages they may cause. Students, then were guided by the teacher to generate several possible answers, such as, severe storms are frightful because: a) they often damage plants, b) cause flood in lower land, c) cause power to fall down leaving many people without electricity, and d) of the thunder and lightning they create. The teacher drew students' attention to the fact that all the answers a-d are acceptable answers and other answers are possible.

The teacher modeled this strategy in the form of a think-aloud for the first few times. Then, students were encouraged to ask questions about the paragraph or passage at hand. The questioning strategy procedure proceeded as follow:

- Once the passage's segment has been read, the assigned leader of the group generated a list of questions based on the passage. Each group generated at least two thin questions and one thick question for each segment. It is worthwhile mentioning here that the group leader should have minimum writing skills that permit him or her to write the basic questions for the group.
- 2. The teacher prompted groups' leaders to share the group's answers with the rest of the class. The teacher facilitated the discussion and wrote all questions on the board and demonstrated whether all provided questions were related to the passage. The teacher

created a T-chart that has thin questions on one side and thick questions on the parallel side.

Students were engaged in this activity several times as needed until sufficient accuracy in generating questions was achieved. The purpose of this activity was to demonstrate to students the importance of generating good questions, exactly as good readers do which would lead to accurate responses.

#### Investigating for Meaning

After the reading was completed for the first segment, students were guided to look for unfamiliar or interesting words. Following the previous examples about the weather, the teacher asked whether anyone wonders what 'severe' means in the term 'severe storms', why it is used here, and would it be possible to have a storm only but not severe, what is the difference? For the first few times, the teacher used a think-aloud activity, with the whole class, about how to investigate for meaning, and demonstrate to the students how to apply this activity. Students were encouraged to highlight difficult or interesting words while engaged in reading. Then they looked for clues that might help to unpack the meaning of these words. Such clues might be embedded in the same sentence in the form of elaborations. Other clues might be directly explained either between two parentheses or simply explained as footnotes. In case students find it difficult to understand the meaning of unfamiliar words by only using such techniques, they were encouraged to read further to look for additional elaborated clues that might lead to the previous one or use other context cueing techniques the teacher believes they already know. The teacher asked students to show how they understood the intention of the writer

by looking for such clues. Further, students were encouraged to think about the usage of vocabulary in a way that is different than what they had encountered.

#### Schematic Visualizing

Upon investigating the unfamiliar words, and answering several possible questions for each segment, students in the 5MCS were asked to think about the most appropriate schematic image or representation that reflects the main ideas of the segment or passage they have read. The teacher introduced the following types of representational schemata, also referred to as graphic organizers: a) description of concept or character, b) sequence (Chain Diagram), c) compare-contrast schemata (Venn-diagram), and d) causeeffect (Fish-bone) (See Figure 6).

Students were not asked to create their own schema, but rather these images were provided to them after they had been fully explained by the teacher. This process may reflect one main schema for the whole passage or more than one visual schema. Using the metrology example, the teacher drew her students' attention to the information listed in the second paragraph of the passage. In the second paragraph the author compares this anticipated storm with another storm that occurred in 1969 and damaged many fields and homes, and left several towns without electrical power for about a week.

The teacher explained that this type of information that talks about two or more events or concepts can be detected in the images, that are called schemata, provided in the chart (Figure 3.08). Having two events that we need to compare between them is called compare-contrast. Here the teacher demonstrated this comparison using a Venn-Diagram and used storm 2008 and 1968 to show differences and similarities between the

two storms. In some segments, the teacher pointed out that it is possible to detect another schema. For example, if we look for the reasons and conditions that create these severe storms, then it is possible to use another schema listed in Figure 3.6 which is called 'cause-effect'. The teacher drew these schemata images and used the information provided by the passage to demonstrate to the students how to use the strategy.

Figure 3.6

Major Text Structures (Graphic Organizers)



The teacher demonstrated in a think-aloud process how to identify the type of schemata that best matches with the passage that is being read. The teacher provided cueing cards that include a simple drawing of the five types of visual schemata (review Figure 7). Students were asked to work in their groups and decide on the best match for the content being read. This process was used in conjunction with the previous strategies every time students were engaged in a new reading activity.

#### Summarizing

The teacher demonstrated how to make a good summary that represents the key points in each segment and write short sentences to reflect the main point of each segment read. Using the previous example of the weather, the teacher drew a T-chart on the board and asked students to read the first segment and look for details. Those details were written on one side of the T-chart. In the case of Arabic language, in which its script goes from right to left, the details were listed on the left side of the T-chart, and the main ideas that summarize these details were written on the right side of the T-chart.

This final strategy draws upon students' prior knowledge and all of the previously used strategies. All students practiced summarizing each segment or paragraph in as few words as possible. Then, they were asked by the leader of each group to discuss and share their summaries with their group members. The teacher provided guidance and support for each group.

Schemata frame	Summary Sentence
Description of a concept/ phenomenon/ character	A is a kind of that Ex. Tigers are members of the cat family. Tigers are related to lions, leopards, and domestic cats. Tigers have acute senses. Tigers can detect the slightest movement in bright sunlight or darkest night. A tiger's hearing is its most acute sense. They can tell the difference between the sound of moving leaves and sudden deer making a sudden movement. Tigers also have a keen sense of smell. They can detect unusual odor from a far distance.
Sequence of events	<ul> <li>begins withcontinues withends</li> <li>withFirst the (character' name),</li> <li>thenalso and finally</li> <li>Ex. A top the slope, the forest canopy opens up and you can see the sky againsuddenly our guide yells, "Safari ants! Run!"we ran as fast as we canwhen we're well past the colony, we stopped and checked our clothes for any hitchhikers.</li> </ul>
Problem/ Solution	wantedbutsofinally/as a result Ex. A top the slope, the forest canopy opens up and you can see the sky againsuddenly our guide yells, "Safari ants! Run!"we ran as fast as we canwhen we're well past the colony, we stopped and checked our clothes for any hitchhikers.
Compare/ Contrast	and share similarwith, but are different in Ex. Hurricane and tornadoes are both violent. However, hurricanes are more destructive because they last longer and cover larger area of land.
Cause/Effect	occurred due towhich resulted in Ex. How Tsunami happens. An underwater earthquake sends an energy wave racing across the ocean. The height of the surface waves increases as the ocean depth decreases.

Figure 3.7 Summary Sentence Frames for Common Text Structure

Providing Systematic Feedback
It has been widely argued by researchers (e.g., Linnenbrink & Pintrich 2002; Pintrich & Schunk, 2002) that teacher's feedback on students' academic work can substantially improve their academic investment and effort in task persistence. Teachers' feedback is even more important for students with LD, who can greatly benefit from explicit feedback on their daily work and progress (Pintrich & Schunk, 2002). The feedback must be communicated explicitly to students on the areas to be improved followed by recommendations for how to improve. The purpose for such explicit comments is to raise the student's awareness on the use of all strategies while engaging in the strategy activities. In essence, feedback will help the students see how they progress and become more responsible for monitoring their own strategies when encountering similar tasks in the different lessons. In the 5MCS the teacher used a clear method of providing explicit feedback to students at all times. This was performed on a daily basis while students are engaged in the activities.

In the 5MCS the following statements and ranking points were utilized: a) students would earn two points followed by a 'Try harder!' statement, if their work was insufficient or wrong despite their effort; b) each student would earn three points followed by a 'You are really trying hard!' statement, if their work is improving but not completely correct; c) students would earn four points followed by the statement 'You've got it!' if they demonstrate mastery of the strategy; and finally d) students would earn five points followed by a 'Superb, can't beat that!' statement, if they demonstrate as a group full mastery of the strategy. The fifth point being dependent on group mastery is

planned for the purpose of encouraging cooperative work among students of the same

group. See Figure 3.8 for an example of a visual graph on student's performance.

Figure 3.8

Student's Progress Feedback /Daily Chart

Student's Name:	Date:	
Activity	Points earned	Teacher's written feedback
Predicting		
Questioning		
Investigation		
Schema visualizing		
Summarizing main ideas		

Key points and: Try harder! (2), You are trying hard! (3), You've got it (4), Superb, can't beat that! (5). Each student can earn up to a maximum of 25 points per week.

On a weekly basis, the teacher sat with her students each individually and provided descriptive comments and feedback on their 5MCS' performance. The teacher and student evaluated each student's feedback chart and calculated the points. These points were added to the overall points earned by each student's group members for the purpose of promoting social belonging and cooperation among students of the same group. See Figure 3.9 for the point system used by the teacher. Figure 3.9

Student's Progress Feedback /Weekly Chart (sample)

Overall Wee	kly Po	ints Ear	rned		Teacher's Comments
5 Pts. Superb can't beat that					
4 Pts. You've got it					
3 Pts. You are trying hard					
2 Points Try harder!					
	Day 1	Day 2	Day 3	Day 4	Day 5

#### Measures

Data for this study were collected using the following measures: a) demographic data on students and teachers, b) students' performance of the 5MCS strategies, c) fidelity of implementation of the intervention for the teachers, d) reading comprehension performance using a standardized test, e) reading comprehension performance on passages read during the 5MCS intervention, or comparison condition, using researcher made tests, f) student's self-efficacy survey in reading, g) student self-efficacy focus group interviews, h) interview with the teachers upon completing the study, and i) researcher field notes, and teachers' daily logs. Table 3.7 represents the overall layout of all the measures that were utilized in the research for both conditions, including the measurement application/collection schedule.

## Table 3.7

#### 5MCS Measures & Data Collection Schedule

	Extended & Reduced Conditions: Overall Measures				
Pre	Week 1	Week 2	Week 3	Week 4	
week. Baseline	Field notes	Field notes	Field notes	Field notes	
Observation	Teacher's fidelity check	Student strat. performance	Student strat. performance	Student strat. performance	
& Pretest.	progress test #1	progress test #2	Progress test #3	Progress test #4	
Self-efficacy focus group.	Self-efficacy survey #1			Self-efficacy survey #2	
Pretest: Standardized test, Form				Midpoint test (Standardized test, Form B)	
A).	Week 5	Week 6	Week 7	Week 8	
	Field notes	Field notes	Field notes	Self-efficacy focus group	
	Student strat. performance	Student strat. performance	Student strat. performance	Posttest:	
	Progress test #5	Progress test #6	progress test #7	Standardized test, Form A).	
			Self-efficacy survey #3	,	

## Demographic Data

Demographic data were collected on the research site and the students and the teachers who participated in the study. Sources for the data on students came from two major resources: 1) school's staff including the principal, the school counselor, school

psychologist, the two literacy teachers who participated in the study and the mathematics teacher; 2) school's records including students' individualized educational programs, existing psychological evaluation and educational reports, report cards, attendance cards, literacy mapping results which was completed by the teachers at the beginning of the school year, and students' files. Sources for the data on the two teachers came from an informal interview with the two teachers prior to conducting the research, and from both school principal and the superintendent. Sources of data collected on the research site were collected from the school's principal and superintendent. All these data were collected prior to the intervention, especially data on the school, and throughout the course of intervention on both the teachers and the students.

#### Students' Performance of the 5MCS

Students' performance of the 5MCS was observed and data were collected on each student individually. The collected data included researcher's field notes, student's daily worksheets and two weekly observations by the researcher following the chart provided in Figure 3.10. The teacher's aide, the teacher, and the researcher observed all three groups once they were assigned each segment and collected data on student's performance in each of the strategies as required by the activity. All data were compiled for each student separately and were organized in a file that consists of 18 individual files for all students of both conditions. In addition, data from students' products on performing the 5MCS activities, which included 5MCS cards were collected twice a week, on the second and fourth day of 5MCS application. The data were collected from random samples of students' work on the activities.

Figure 3.10

Student's Performance in the 5MCS	
Five MCS: Activity Sequence & Cueing Reminders	Observed
	behavior +/-

Activity 1: Predicting followed by reading Predict events & share prediction with group. Make a group prediction & share it with whole class. Silent reading (30 second). Oral reading for one minute each student. Correct mistakes and provide feedback. Confirm or refute predictions.

#### Activity 2: Questioning

Generate questions. Share generated questions with partners. Create a group list of new questions. Share questions with whole class. Revise questions based on whole class questions mediated by the teacher. Example questions: what is the idea being discussed? Where it happened? Why it happened? Remember to ask about sequence, reason, and understanding.

#### Activity 3: Investigation for Meaning

Highlight unfamiliar words, difficult words to read, or interesting words.
Share list with group members.
Share list of words with whole class.
Activity 4: Schematic visualizing
Create a plot that best represent ideas being discussed.
Share with group. Select best schema.
Share with class.
Revise to match new understanding of the text.
Activity 5: Summarizing
Summarize each segment or paragraph in less than 10 words. Write best sentence that summarize the passage.
Share your summary with group.
Create a shared summary. Leader writes summary. Share summary with whole class.
Revise your summary.

#### *Self evaluation & feedback* A weekly Self Reporting Chart. Discuss progress with the teacher.

Fidelity of Implementation

Several measures were used to assure that the intended intervention was being implemented as described for both conditions. First, the teacher who worked with groups in Extended Condition received an individual training on the implementation of the 5MCS strategies in the first few days prior to the implementation of the 5MCS (see Teachers' Training in the 5MCS section). The teacher of the Reduced Condition received the same training provided for the first teacher, only in week four, right before the implementation of the 5MCS for this condition. Both teachers were encouraged by the researcher to ask questions to clarify the information and training they received prior to engaging in the 5MCS intervention. Further, they were observed by the researcher during the implementation of the intervention and were immediately assisted on their delivery of instruction in the form of co-teaching, especially in the first week of each teacher's 5MCS implementation. Second, in order to ensure that teachers and students of both conditions were engaged in the interventions as planned, the daily sessions of both conditions were conducted in two consecutive 45-minute block periods, with a 5 minute break between the periods. Groups in the Extended Condition started in the first period whereas groups in Reduced Condition started in the second period. The purpose for this procedure was to allow the researcher to be present at all times in both classes while teachers are conducting the intervention activities.

The original plan was to videotape selected sessions for a follow up on the implementation of the 5MCS using a detailed checklist measure (see Figure 3.11 for a detailed description). However, the videotaping and tape-recording were not possible due to students' refusal to be videotaped or tape-recorded during the intervention. Instead, the

researcher used the field notes and teachers' logs. The researcher debriefed with the teacher on the application of the strategy on the same day as conducting the teacher fidelity observation for the purpose of confirming whether all behaviors in the list were being met. In case of any difficulty in meeting the requirements set for the 5MCS, the researcher was able to address those issues and to provide additional training and guidance as needed.

Figure 3.11

Teacher Fidelity Check: Observing Teacher's Application of the 5MCS/and in the

Absence of the 5MCS

Class/Condition: ...... Date: ...... Session #: .....

Check (+) for observed behavior, and (-) for absence of listed behavior.

Activity	+/-
Activity 1: Predicting	
Explicit explanation of strategy (when and how it is being performed, provide	
sufficient examples, connect to students' background knowledge)	
Model prediction strategy (e.g., think aloud, model asking predicting questions, )	
Engage students in prediction participation (ask them to provide their own	
predictions, to share predictions with whole class and small group)	
Allow for students' practice time within their own groups.	
Oral/Silent Reading Activity	
Model oral reading for separate segments. Allow for students' reading (2-3	
minutes).	
Guide students through their group work	
Provide feedback to groups on applying the activity	
Activity 2: Questioning	
Explicit explanation of strategy (when and how it is being performed, provide	
sufficient examples, connect to students' background knowledge)	
Model questions generating (e.g., why this happen, what they think about, how	
this affect?)	
Allow students to generate their own questions (provide sufficient time).	
Ask students to discuss and share their questions with their own group members.	
Create a group list of new questions. Prompt students to share questions with	
whole class.	
Guide students through their group work	
Provide feedback to groups on applying the activity	
Allow Revision of questions based on whole class questions mediated by the	
teacher.	
Example questions: what is the idea being discussed? Where it happened? Why it	
happened? Remember to ask about sequence, reason, and understanding.	
Activity 2. Investigating for magning	
Activity 5. Investigating for meaning Model how to investigate new words or difficult concents using a think cloud	
activity and load a discussion with students (use alves in the text)	
Dravida mara practice with all students	
riovide more practice with an students	

## Teacher Fidelity Check (Continued)

Encourage all students to work in their groups and highlight difficult word to read, or unfamiliar or interesting words.

Ask students to share their words discovery and provide feedback while engaging in the activity (e.g., this is a good find, how did you Figure out the meaning of the word?)

Share list of words with whole class.

Guide students through their group work

Provide feedback to groups on applying the activity

#### Activity 4: Schema visualizing

Explicitly explanation about text structure, with emphasis on the ones mentioned in 5MCS

Model how we learn about text structure using a new passage, with sufficient examples

Create a plot that best represents ideas being discussed.

Allow for students' practice on a new passage

Guide students through their group work

Provide feedback to groups on applying the activity

Encourage students sharing of work.

## Activity 5: Summarizing

Model summarizing each segment or paragraph in less than 10 words (looking for title, opening statement, using key words, avoiding examples, and detailed description in the summary etc...)

Write best sentence that summarize the passage and explain what is good about the sentence using key ideas mentioned in the text, and relying on previous experiences

Allow students to practice synthesizing chunks of information into shorter sentences or statements

Ask students to share their summaries with group members and whole class. Prompt them to create a shared summary and ask leader to write the summary Allow sometime for students' revision of summaries.

Guide students through their group work

Provide feedback to groups on applying the activity

Self evaluation & feedback

Monitor student's weekly self reporting chart.

Provide weekly feedback on progress in all areas (discuss progress with the

students and provide suggestions for improvement)

Teachers' guiding students through their group work included the following behaviors: answering questions, reinforcing expected behavior on task, responding to emergent needs, and explaining in more details when needed or if students ask for further clarifications. Providing feedback to groups on the application of the activity included the following behaviors: asking clarifying questions, praising students for staying on task, investing more effort, for collaborative behavior, and full participation. In addition, the teacher observed for review of the 5MCS procedures that were taught in previous lessons. *Reading Comprehension Performance Using a Standardized Test* 

A pretest, midpoint-test, and posttest were administered to measure the reading comprehension performance of all students in both conditions. For this measure, the participants were tested for their comprehension using a standardized Arabic literacy battery which consists of two matching sets of comprehension tests in two forms, A and B. This battery, the "Diagnostic Manual of Reading Evaluation" (DMRE), was developed by a team of Jordanian researchers at the University of Jordan and validated for primary school children in grades 2-6 in Jordan (Alian, Khasawneh, Amayreh & Hamdan, 1999). The battery, which is based on literacy curriculum for second through sixth grade students in Jordan, was the only standardized measure available to the local Palestinian-Arab minority in Israel.

The DMRE battery was standardized on a national sample of 7651 students (grades 2-6) representing three geographical regions of Jordan (north, center, and south). The sample selection was randomly drawn using the computerized database of the Ministry of Education to represent all children including both female and male students

and those who belong to private schools and the United Nation's (UNRWA) refugee camps schools. Prior to administering the whole battery the test was piloted on six randomly selected classes that represent all three regions of Jordan. Extensive psychometric data is reported to support the reliability and validity of the test (see Alian et al., 1999). The measure has a reported coefficient alpha reliability of .90 for phonological awareness tests, .91 for the vocabulary, and .93 for the comprehension subtests.

The DMRE battery is a reading based test that does not require any form of writing except for circling the best matching answer for objective questions. The DMRE is divided into four sub-tests for each form. Each sub-test has three components that vary in their level of difficulty and reading components (e.g., phonological awareness, word recognition, vocabulary, comprehension, and reading mapping) according to the following four levels: The first subtest (Level 1) consists of three parts: a) phonological awareness (45 items), b) vocabulary (45 items), and c) comprehension (40 items). Its difficulty level ranges from first half of first grade to the second half of the second grade.

The second subtest (Level 2) consists of three parts: a) phonological awareness (40 items) which tests the ability of the student to locate single sounds and syllables at the beginning, middle, and at the end of the word, b) vocabulary (45 items) which prompts the student to read a sentence and to look for the option that best matches the highlighted word in the sentence, and c) comprehension (44 items) which starts from a visual cue/Figure followed by one sentence that has two questions based on the visual cue and the sentence prompt. The comprehension difficulty of level 2 extends gradually to reach

one narrative passage of approximately 50 words followed by five multiple-choice questions with four response options each. The difficulty of Level 2 ranges from the second half of the second grade to the end of first half of the third grade.

The third subtest (Level 3) is similar to the level 2 subtest in its structure which measures students' skills in phonological awareness (40 items), vocabulary (42), and comprehension (46 items). Its difficulty ranges from the second half of the third grade to the end of the fourth grade. The difference between Level 2 and Level 3 is obvious in the complexity of the vocabulary words and comprehension passages, particularly, in the reading comprehension part. While all passages in Level 2 are mainly based on narrative short passages with few complex questions, the passages of Level 3, however, are more complex and consist of narrative and informative passages with slightly longer passages of 60-80 words each compared to level 2. The comprehension questions of Level 3 include both factual/recall and inferential questions.

The fourth subtest (Level 4) measures students' reading skills in a) vocabulary (38 items), b) reading comprehension (63 items), and c) content mapping (30 items) of longer passages that ranges between 250 to 400 words each. Its difficulty ranges from the end of the fourth grade to the end of sixth grade. The fourth level subtest is the highest level in the DMRE battery.

Although, the Jordanian battery was developed and validated for students in Jordan, those children share similar culture, religion, and linguistic background with the Palestinian Arab children who live in Israel. For the purpose of this study, the Level 3 subtest was conducted in its two Forms A and B, but only the vocabulary and

comprehension sections were administered. This battery was used only for the purpose of establishing a baseline level and comparison improvement benchmarks at various points including pre, midpoint, and post performance according to the following sequence:

- a. Pretest, for both conditions, using the Diagnostic Manual of Reading Evaluation (DMRE)
   battery, level 3, Form A was administered on the third day of observation.
- b. Mid-point test, for both conditions, using the DMRE, level 3, Form B, was administered four weeks after the start of intervention.
- c. Posttest, for both conditions, using the DMRE, level 3, Form A, was administered upon completing the intervention.
- d. Maintenance test. In the original proposal, a maintenance measure using the DMRE, level 3, Form B, was planned to be administered a one month after the termination of the intervention. This test, however, was not performed due to time limitation. The intervention which was planned to end in April 09, eventually ended in June 09, which allowed only approximately two weeks to the end of the school year. Therefore, a decision was made to cancel this test.

Following the structure and guidelines listed in the DMRE manual, this test was administered to students as a whole group in-class testing within an allotted maximum of 60 minutes.

## Reading Comprehension Performance Using Researcher-made Tests

Students of both conditions were tested seven times throughout the intervention using the researcher-made comprehension test. These administrations occurred after completing the fourth 5MCS session of each week, weeks 1 to 7, including in week one

for the Extended Condition and in week four for the Reduced Condition. These weekly progress tests were designed by the researcher for the purpose of providing additional measurement to the DMRE test. Each test included ten multiple choice questions, and was generated from the same passages used for the intervention of every week. All these tests were judged by two external literacy teachers for their consistency and readability level. Consistency was judged based on the following components: first, all progress tests must have ten questions that cover areas of a) three factual recalls, b) detecting (inferring) at least two main ideas in two separate paragraphs, c) recognizing one main idea that represents the whole passage, d) recognizing the meaning of at least two vocabulary words used in the passage, e) asking a question about one major event mentioned in the passage, f) and identifying the main schematic structure of the passage. Second, all questions must have four choices (multiple choice) and be clearly worded in such a way that students can read and understand the wording of each question. That is, not use awkward words or terms that the students never encountered while reading and working on the 5MCS activities. Since there was no existing readability formula in Arabic language, the two external literacy teachers made some modifications for the wording of questions that were judged to be higher than fourth grade level. These corrections were adjusted by the researcher.

Each student's performance on the weekly progress comprehension tests was recorded and kept in his or her in-class file for the purpose of continuous support, weekly feedback, and teacher/researcher progress monitoring.

Student's Self-efficacy Survey in Reading

Students received an individually administered measure for assessing self-efficacy for reading comprehension based on a scale previously developed by Graham and Harris (1989). Although, the scale developed by Graham and Harris was mainly used for self-efficacy in writing, it was consistent as a measure with the main components and procedures of assessing self-efficacy in other areas of literacy, including reading comprehension. The 5MCS self-efficacy measure included specific statements about the components of the 5MCS, and one general statement about the ability to understand a given curriculum text. The statements may be found in Figure 12. A scale of 1-10 was placed directly next to each item. Each item was rated on that scale. The higher the scale value, the higher the perceived self-efficacy. The written descriptions of the points were accompanied with the following statements: 1-3 not sure, 4-6 maybe, 7-8 pretty sure, and 9-10 very sure (see Figure 3.12).

Figure 3.12

Self-efficacy survey on the application of 5MCS and reading comprehension

Student's name: ...... Date: .....

In the following chart, please read each question (a-f) and circle one number that best describe your honest answer for each question. You will not be graded for your answers.

	Not	sure		May	be		Prett Sure	у	Very sure	
If I was given a grade level text/	passag	ge:		•			-		-	
(a) I can predict at least one event from a given passage	1	2	3	4	5	6	7	8	9	10
	1	2	3	4	5	6	7	8	9	10
(b) I can use clues in the text to identify the meaning of unknown word										
	1	2	3	4	5	6	7	8	9	10
(c) I can ask at least three good questions about the content										
	1	2	3	4	5	6	7	8	9	10
(d) I can tell the structure of the text (e.g., compare- contrast, and cause-effect)										
	1	2	3	4	5	6	7	8	9	10
(e) I can summarize the main idea in less than ten words										
	1	2	3	4	5	6	7	8	9	10
(f) I can understand the passage and answer most of the comprehension answers										

Students in both conditions received the self-efficacy survey three times throughout the intervention as follows: at the beginning of intervention (week 1), at the end of weeks 4 and 8. At the beginning of intervention, the self-efficacy survey served as a pre-intervention indicator to show where all students, in both conditions, stand in relation to their self belief in comprehending written materials. The second survey was scheduled at the end of phase one (at the end of week 4). Both conditions received the same survey at the end of intervention (in week 8).

#### Self-efficacy Focus Group Interview

A focus group interview is a situation in which a group moderator keeps a small and usually homogeneous group of 6-12 individuals focused on a certain topic of interest to the research issue (Johnson & Turner, 2003). The moderator, also referred to as facilitator, facilitates a group discussion on a series of about five to ten open-ended questions (Johnson & Turner, 2003). Following Cresswell's (2003) and Klassen and Lynch's (2007) model for self-efficacy, two semi-structured focus-group interviews were conducted with 8 students randomly selected, four students from each condition, at the beginning and at the end of the intervention. The purpose of these interviews was to solicit in-depth data about students' self-efficacy in reading.

Dowson and McInerney (cited in Klassen & Lynch, 2007) argue that quantitative research methods "oversimplify the complex and dynamic role played by motivation beliefs and by multiple contexts" (p. 495). Further, focus group interviews have advantage over other methods of quantitative data collection in that they do not discriminate against people who cannot read or write and they can encourage participation from people reluctant to be interviewed on their own or who feel they have nothing to say. Thus, in order to achieve in-depth data about students' self-efficacy in reading, approaching the research from multiple perspectives will enrich our understanding. The themes that were discussed were derived from Bandura's (1997) four

sources of self-efficacy (mastery experience, vicarious experience, verbal persuasion, and emotional reactions).

The focus group interviews were conducted in a quiet designated room in which all students and the moderator (the researcher) sat in a circle facing each other. The focus group interview took about 40 minutes and consisted of the following activities: a) introducing the structure and purpose of the interview, b) an ice-breaking activity, c) raising general questions about learning and reading, and d) specific questions about selfefficacy in reading. The researcher introduced the purpose, structure, and possible outcome of the focus group interview. The interview was tape-recorded and the researcher took immediate notes while students were discussing the questions.

An ice-breaking activity of 2-3 minutes was introduced through a quick-attention physical game where the moderator stands in the middle of the circle and tosses a large piece of paper and calls one of the students' names and will expect that the student that is being called on to quickly stand-up and catch the paper before it lands on the ground. The student then was asked to rip one small piece of the paper, and do the same thing that was done by the first participant and call on a new member of the group by his or her name. While doing this game, students were asked to change their seats. In the next activity, the researcher raised general questions about things that students like in school. For example, the students were asked the following questions: what do you think is the fun part about school? What is the thing that you most like in being a student? How about things you don't like about being a student in school? Because students did not bring reading as part of the discussion, the next question to be asked was: What about reading, do you have

anything to say about reading? If so, what is it? The next activity focused on specific questions about students' feelings toward reading and reading comprehension. These questions are illustrated in Table 3.8.

Table 3.8

## Self-efficacy Focus Group: Interview Protocol

#### Structure of the interview

- 1. The moderator of the focus group will introduce the structure and purpose of the interview.
- 2. An ice-breaking activity (2-3 minutes)
- 3. Raising general questions about learning and reading, and
- 4. Asking specific questions about students' self-efficacy in reading.

General topic and question about reading habits.	What do you think is the fun part about school? What is the thing that you most like in being a student? How about things you don't like about being a student in school? If students do not bring the reading as part of the discussion, the next question would be: What about reading, do you have anything to say about reading? If so, what is it? Do you read books outside school? What do you read? How often do you read outside of school?
General self- efficacy in reading	How confident are you about your ability to read a text at your grade level? What makes you feel confident or less confident? How do you feel about answering comprehension questions derived from a text that you have just read?
Vicarious experience	What would seeing someone showing good reading do to you? How would this showing of good reading help you in reading?
Mastery experience	Have you ever felt that you mastered the reading of a text/story? What are the conditions when you felt that you were good in reading that particular text/story?
Experience of emotional state	Can you describe an event when you felt proud or pleased about your reading? Where are the times/conditions when you feel comforTable in reading? Can you describe or give more details on this?
Verbal persuasion	Have you ever received any encouragement or positive feedback from someone about your reading? Who was that person and what did that encouragement do to you?

Interviews with the Teachers

Upon completing the intervention, in-depth semi-structured interviews were administered with the two teachers, each individually. The interviews took place in a convenient location at school, at the teacher's discretion were noises and distractions were minimized. Each interview took about 45-minute period and was tape-recorded with teachers' permission. The interviews focused on five main questions with sub-questions derived from the intervention themes. See Table 3.9 for an interview protocol.

Table 3.9

A Semi-structured Interview	Protocol w	ith the Teachers
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Question	Detailed Questions
No.	
1.	What do you think of the 5MCS as a reading instruction for the
	children? Can you elaborate on this question?
	A follow up question: What effect does it have on the children? Can you give examples?
2.	How do you think the students respond to it compared to other methods? Examples.
	A follow up question: How do you think it worked or did not work?
3.	Do you see it work better for certain children compared to others? How? A follow up question: Can you talk about specific students to illustrate your point?
4.	If children's behavior went well, how do you think students would have been responded to the 5MCS?
5.	What changes do you suggest to improve the 5MCS for these particular students?

#### Researcher Field Notes, and Teacher's Daily Log

Field notes were collected from students work samples, and general observation in the classroom while engaged in the intervention. These collected data were used as part of the qualitative descriptive data on the 5MCS application process. Behaviors that were recorded for the ongoing observations included students' interaction among each others while engaged in the 5MCS, student's self-monitoring while conducting the 5MCS, a gradual release of teacher's role to students, and behavioral disruptions during the instruction. The outcomes of the collected data were thematically analyzed upon its emergence and discussed within its appropriate context.

#### Data Analysis

Data analysis responded to the four research questions and incorporated all of the described measures: a) demographic data on students and teachers, b) students' performance of the 5MCS, c) teacher fidelity of implementation of the intervention, d) reading comprehension performance using a standardized test, e) reading comprehension performance on passages read during the 5MCS intervention, or comparison condition, using researcher made tests, f) students' self-efficacy survey for reading, g) students' self-efficacy focus group interviews, h) individual interviews with the two teachers upon completing the study, and i) researcher field notes and teachers' daily logs. See Table 3.10 for a visual display on how all research questions were measured and analyzed within the time frame allocated for the research.

Table 3.10

Measures and Data Analysis Used with Research Questions and Time Table

<i>Q.</i> #	Measure	When administered	Data analysis
3	Teacher Fidelity Teacher fidelity checklist	2X/week for each teacher, randomly timed	Descriptive (data will be described and reported based on its relevance to the research questions)
	Field notes	Daily	Descriptive
1.a	Reading Comprehension - Standardized	Baseline (week 0), (midpoint)week 4, (posttest) week 8	Repeated-measures ANOVA and appropriate nonparametric equivalent test.
1.b	Reading Comprehension – Weekly	Weekly, at completion of session 4 (weeks 1- 7)	Graphed for visual analysis, per student Repeated-measures ANOVA
2	Student Self-Efficacy Student focus group (n=8)	Week 0, week 8	Thematic Analysis
	Student self-efficacy survey	Week 1, week 4, week and week 8	Graphed for visual analysis, per student
1	Student Strategy Perf. Student performance checklist	2X/week, per group (by individual students)	Graphed for visual analysis
	5MCS products (prediction cards, questioning cards, investigating cards, summarizing cards, schematic vis. cards)	2X/week (2 <sup>nd</sup> & 4 <sup>th</sup> 5MCS practice per week)	Graphed for visual analysis, based on (a) completion of step, and (b) quality
	Research Field notes and Teacher's Daily Log	Daily On-going, at teacher's discretion	Thematic analysis
4	Teacher's view of 5MCS	Interview at the end of intervention	Thematic analysis

#### Teacher's Fidelity Checklist, Researcher Field Notes, and Teacher's Daily Log

A teacher's fidelity checklist that consists of six categories, the application of the 5MCS (predicting, questioning, investigating, schematic visualizing, and summarizing) and weekly feedback to students was utilized. The checklist, completed by the researcher, included specific sets of expected behaviors under each of the six categories that the teacher should perform while conducting the intervention. The same checklist was used for both teachers, including during the traditional instruction phase for the reduced condition teacher. Further, field notes were made using general observations and students' work samples, to ensure quality implementation of the 5MCS and continuous guidance and feedback to all students. (See further ahead in this section for additional analysis procedures for the field notes.). The fidelity checklist was used to provide immediate feedback to the teachers during their teaching of the 5MCS. The implementation practices recorded on the checklist were informative to the researcher as he interpreted the various other sources of data in this study.

The original plan was that teachers would keep a daily log and record their impressions and observations on the ongoing 5MCS intervention. However, the teachers did not use their daily logs, instead they reflected on the intervention verbally through informal conversations with the researcher. Their notes and comments were recorded by the researcher and triangulated during data analysis with other data sources. In particular, the teachers' feedback on the impact of the culturally relevant passages on students was included in the analysis.

#### Reading Comprehension Using Standardized Tests

Repeated-measures ANOVA test was used to compare test performances at three points in times for all students in both conditions as follows: 1) pretest, prior to starting the intervention, 2) a midpoint test at the end of week 4, and 3) a posttest at the end of intervention (week 8). Prior to running the ANOVA, the standardized reading test data were analyzed to determine whether the statistical assumptions to satisfy conditions for conducting an ANOVA have been satisfied. The tests revealed that requisite assumptions were not violated, despite the low numbers of students in each condition. Cohen (1988) advises that even under conditions of small numbers and when the assumptions of homogeneity of variance have been violated that ANOVA's tests may still be more parsimonious than their nonparametric equivalent.

Further, data were analyzed in three ways: a) by Condition (Extended, Reduced), by Role in Group (Group Leader, First Reader, and Second reader), and by Engagement (High, Average, and Low). The criteria on students' role in group were made based on students' achievement in the baseline comprehension tests and researcher's observations which were made prior to conducting the intervention at the baseline stage. Students who achieved high comprehension where assigned a leader role, followed by first readers, and finally the least achieving students in comprehension were assigned a second reader role.

Criteria on students' level of engagement in the 5MCS intervention were made based a on a shared decision between the researcher and the teachers for each of the students. Although, the decision on classifying level of students' engagement in the activities was not a pure quantifying measure per se, the criteria which was adopted included the following measures: a) students' behavior in the activities, such as listening

to each other while talking and participating in their assigned roles, b) time spent on tasks which included starting and finishing the assigned activities without leaving the group for un justifying reason or wondering in class, c) responding to the various activities during the application of the 5MCS by answering questions, posing questions, or sharing ideas in a whole class instruction and in small groups, d) responding to teachers' feedback on performance, such as being able to improve on teacher's feedback on performance or showing interest in checking for the weekly results, and e) an overall interaction of students in the 5MCS such as cognitive contribution to the group work such as posing good questions or predictions while discussion each of the activities. Field notes that were collected by the researcher and debriefing with the teachers resulted in classifying students in three general engagement conditions.

#### Researcher-made Reading Comprehension Weekly Tests

Data derived for the weekly comprehension progress tests were plotted in a linegraph for visual analysis, per individual and group means. Line graphs use a single line to connect plotted points of interval and, at times, nominal data. Since they are most commonly used to visually represent trends over time, they are sometimes referred to as time-series charts. A single line-graph was plotted for each student to represent his or her weekly reading comprehension score on the researcher-made tests on the seventh test of weeks 1 through weeks 7 (7 intervals in total). In addition, a line graph was drawn to interpret mean change in scores between students by condition.

Student Self-efficacy Survey

The 6 item self-report self-efficacy scale is a Likert-scale instrument with 10 response options per item. Individual students first completed the scale prior to the first day of the intervention phase, then again at the ends of weeks 4, and 8 (see Appendix ?? for a translated version of the self-efficacy survey). Each time a student completed a self-efficacy scale a "score" was calculated by averaging each of her or his ratings on the instrument. That is, a mean score for the first five items, relating to performance of each of the 5MCS skills was calculated; responses to the sixth item, concerning overall reading ability, were analyzed separately. Data derived from the self-efficacy self-report survey were then graphed for visual analysis for each student individually, and group means were calculated and plotted for comparisons between the two conditions.

#### Self-efficacy Focus Group Interviews

The two interviews were administered by the researcher, who is experienced in administering group interviews in special education settings at the high school level. The researcher used the questions listed in the interview protocol described in the measures section to guide the topics of conversation in the focus groups (e.g., general question about reading habits, general self-efficacy in reading, vicarious experience, mastery experience, experience of emotional state, and verbal persuasion). In addition, the researcher kept in mind the purpose of the interview to ensure that he is aiming for the goals of the interview. The sessions were tape-recorded and transcribed upon completion. In addition, the researcher took quick notes and record salient nonverbal interactions among students.

Data obtained from the two focus-group interviews were analyzed using a Thematic Analysis approach. Thematic Analysis is a qualitative method for identifying, analyzing, and reporting themes within data (Given, 2008). Thematic analysis allows for organization and description of data. Braun and Clarke (2006) argue that the importance of a theme is not necessarily dependent on quantifiable measures, but rather on whether it captures the important aspects pertaining to the research questions. Thus a theme, according to Braun and Clarke (2006) "captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set." (p. 82). General guidelines for thematic analysis involve systematic coding and interpretation of ideas, concepts, and trends that emerge from the data (Boyatzis, 1998; Braun & Clarke, 2006).

Although, thematic analysis has been widely described in the literature, there is, however, limited agreement about the exact steps and procedures that should be followed by researchers (Given, 2008). Boyatzis (1998), for example, divides thematic analysis into four distinctive stages: 1) Sensing themes: recognizing the codable moment, 2) doing it reliably: encoding codable information consistently, 3) developing codes, and 4) interpreting the themes within a conceptual framework (an existing theory) which extends to development of knowledge.

Brenner (2006) proposed a general framework for developing a systematic analysis of data. This framework consists of five phases: 1) transcription, 2) description, 3) analysis, 4) interpretation, and 5) display. Braun and Clarke (2006), on the other hand, propose six phases of thematic analysis of content: 1) transcription: initial collection of general data, 2) initial coding of data, 3) generating themes, 4) reviewing all the emerging themes, 5) defining and renaming all the emerging themes, and 6) selecting and reporting of compelling extracts derived from the themes. Since Braun and Clarke's (2006) procedures have been well described and allowed for flexible approach to analyze data, their model was employed for this study. Following Braun and Clarke's (2006) framework, data for the self-efficacy focus group interviews were analyzed and reported in the following six phases:

*Phase one- Familiarization with the data.* The interviews were, first, transcribed after they were conducted, and translated from Arabic to English by the researcher. The translation of the interviews was examined by a colleague in a doctoral program whose native language is Arabic and who is majoring in linguistics in English as a second language. Only minor revisions that resulted in immediate revision of the original transcript were reported by the second transcriber. The transcribed interviews were reviewed and reread repeatedly by the researcher for the purpose of familiarizing with the data at this phase. Initial ideas about interesting points made by the interviewees were generated on a separate sheet for further investigation in the next phase. Further, data that were obtained from the focus-group interviews were a) organized based on the order by which each of the interview questions was presented, and b) organized for each interview on the same page which was split into two sides in order to allow for a visual display of the interviewees' answers in parallel cells. This arrangement of data led to the next phase, which is generating initial codes.

*Phase two- Generating initial codes.* The answers of the interviewees for each of the questions were contrasted against each other on parallel tables on the same landscape page. Common answers or repeated concepts were highlighted with a color on the screen for the purpose of creating initial codes. These initial codes were intended to be revised and possibly expanded as the analysis continues. In essence, according to Braun and Clarke (2006), "coding continues to be developed and defined throughout the entire analysis." (p. 11). Relevant examples that gave detailed answers related to the highlighted codes were copied, italicized, and placed separately at the beginning of the answers for an additional revision and for potential inclusions in the text description. Data items were given equal attention in the coding process. That means, at this phase of analysis, all highlighted items were given the same importance without any specific order or priority to any of the initial codes over the others. At this point a large number of codes were selected and highlighted for the purpose of searching for themes, which is the next phase in the analysis.

*Phase three- Searching for initial themes.* At this phase the emphasis is depart from the initially created codes and geared towards the broader level of concepts that make the themes. Various codes were sorted out and combined into possible initial themes. These emerging themes were constructed based on the various codes that were obtained from the data. Relevant examples derived from the coded data were constructed as part of the new emerging themes (Braun & Clarke, 2006). These initial themes and their coded data were visually constructed on a thematic map which was manually

created on a separate paper. Upon completion of the thematic map, additional codes were added to the initial themes, which led to the next phase, reviewing themes.

Phase four- Reviewing themes. At this phase all previously created themes and their sub-themes have been again thoroughly reviewed and refined. Some of the themes were changed into other relevant themes or combined into other over-arching themes. Meaningful themes that were relevant to the interview questions were analyzed and interpreted within the overall interview protocol. That is, each theme was connected to a relevant major question documented in the interview protocol. The themes were examined for internal coherence and consistency with the description of each of the subtheme that make the major themes. Further, data were analyzed and interpreted within existing theoretical framework that explains them in such a way that makes sense out of the generated themes. For example, increases or decreases in self-efficacy themes were connected to theory of self-efficacy (Bandura, 1986, 1997) that explains the relationship to these themes. Prior to engaging in the next phase, the emerging themes were left out for a period of at least two weeks, for the purpose of allowing another deeper revision in order to examine "whether the themes 'work' in relation to the data set, and to code any additional data within themes that has been missed in earlier coding stages." (Braun & Clarke, 2006, p.15).

*Phase five- Defining themes*. A satisfactory thematic map was constructed at this phase. The themes were refined and defined in that they represented the essence of what the themes are about and "what aspect of data each theme captures" (Braun & Clarke, 2006, p. 16). Further, as part of the refinement process, these themes were carefully

examined for the purpose of ruling out any themes that could be part of the over-arching themes, or the possibility that some themes may contain subthemes that were missed during the previous phases. According to Braun and Clarke (2006), these subthemes are eventually integrated within other themes and have the potential of laying the ground for more complex or broader themes. The next step within this phase is to determine whether the selected themes are refined enough to be reported as final themes. At this level of analysis the scope of each theme was described in the opening of each theme and connected to the goals and theoretical framework that guided the data. The final selected themes were connected to the research topic and main interview questions, for example, focus-group interviews with the students emphasized students' self-efficacy in reading comprehension in relation to the four sources of efficacy described by Bandura.

*Phase six- Reporting themes.* This final phase involves the write up of the final selected themes. Themes that emerged from the entire dataset and their associate subthemes were arranged and narratively reported with sufficient interesting examples that are vivid and capture the essence of each of the points that make up the themes. It is worth noting here that, although the above six phases were described linearly, they were, however, not followed rigidly according to those phases. Instead, they were applied, as proposed by Braun and Clarke (2006), in a "recursive process, where movement is back and forth as needed, throughout the phases." (p. 86).

Interviews with the Teachers

Data collected from the individual interviews with the two teachers were analyzed following thematic analysis framework suggested by Braun and Clarke (2006) which is similar to the methods described for the students' focus group interview data. *Student's Strategy Performance* 

A line-graph was utilized to visually display each student's performance of the 5MCS steps. Data were plotted twice a week on two non consecutive days. The linegraph represents a student's performance based on (a) completion of steps assigned for each strategy, which had the values 0 and 1, and (b) quality of the work on each of the steps, which was encoded: 3 for presence of desired behavior, 2 for partial application of desired behavior, and 1 for non compliance or absence of desired behavior. Using visual analysis, trends in each student's performance of the 5MCS procedures were summarized. The relations of students' trends in 5MCS performance were compared descriptively to their performances on the two reading comprehension measures. *Researcher Field Notes and Teacher's Daily Log* 

A thematic analysis was utilized to review data collected from general observations on the 5MCS application process of both conditions. Filed notes collected in the form of teacher's daily log and were described within their relevance to the research questions. The resultant data were used to expand the narrative description of how the teachers taught and the students came to learn and benefit from the 5MCS intervention and the use of culturally relevant reading materials.

#### Triangulation and Data Analysis by Research Question

Dependent variables that were under investigation in the study, namely student's performance in reading comprehension measured by standardized tests and researcher made tests, and students' self-efficacy in reading were triangulated with various other measures for the purpose of validating the results and gaining in-depth understanding of these variables. Triangulation is the application and combination of more than one research approach in the study of a given phenomenon (Creswell & Plano-Clark, 2003; Tashakkori & Teddlie, 2008). The purpose of triangulation in research is to increase the validity and trustworthiness of the findings (Given, 2008). Researchers, according to Given (2008), may combine several methods, such as observations and interviews to gain more insight about an investigated phenomenon. The triangulation of data may be used within the qualitative or quantitative methods separately or in a mixed-methods approaches to validate the finding (Given, 2008). Table 3.11 demonstrates the sources of data analysis organized by research questions.

$\frac{1}{P}$	ungulation and Data Analysis by R	Manara	Drimory Data	Triongulation
ĸ	search question	Measure	analysis	with primary analysis
1.	Does instruction in the mediated c relevant high-interest/low-level te Palestinian-Arab middle school st	cognitive stra xts, improve udents with 1	ttegy (5MCS), when usi the reading comprehen LD:	ng culturally sion of
	a. when assessed by a standardized measure?	Pretest, midpoint test, & posttests.	Quantitative: ANOVA Quantitative: descriptive statistic (means comparisons and visual graphs)	Observation, interviews with teachers.
	b. when assessed by a Researcher Made measure?	Weekly tests (7 tests)	Quantitative: ANOVA	Observation, interviews with teachers.
2.	Does instruction in the mediated cognitive strategy (5MCS) when using culturally relevant high- interest/low-level texts result in improved student's self-efficacy for Palestinian-Arab middle school students with LD?	Self- efficacy survey (3 survey). Focus group (2)	Quantitative: compare pre to post per students by role in group, and by condition. Thematic analysis	Teacher's interview, and field notes.
3.	How does reading using culturally relevant high- interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?	Observati on and weekly tests (7 tests)	Qualitative: description	Observation/ field notes, interview with teachers, and data collected from students.
4.	How do the teachers value the 5MCS practices that differ from traditional culture-based instructional procedures?	Interview	Qualitative: thematic analysis	Observation (fidelity check)

# Table 3.11
Data derived from the reading comprehension weekly progress tests and standardized pretest, midpoint test and posttests were triangulated with the researcher's general observations and field-notes, student's strategy performance checklists, interview with the teachers, and teachers' daily log. Data derived from students' self-efficacy survey were triangulated with data that emerged from self-efficacy focus group interviews. Further, data emerged from interviews with the teachers at the completion of the study, were triangulated with information recorded by the researcher's field-notes and focus group interviews with the students. Themes that were consisted with the four efficacy resources (mastery experience, vicarious experience, social persuasion, and psychological states) as described by Bandura (1986, 1997) were considered for analysis.

To conclude, a mixed-methods approach was utilized as the main research framework to examine the impact of the five mediated cognitive strategies on the reading performance of Palestinian-Arab middle school students with learning disabilities. Chapter four will included the findings of the research based on the four key questions stated in chapters one and three. The findings will be reported in the order of the posed questions.

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#### CHAPTER IV

#### FINDINGS

In this chapter the major findings for the following four research questions are laid out:

- Does instruction in the mediated cognitive strategy (5MCS), when using culturally relevant high-interest/low-level texts, improve the reading comprehension of Palestinian-Arab middle school students with LD, a) when assessed by a standardized measure and b) when assessed by a researcher-made measure?
- Does instruction in the mediated cognitive strategy (5MCS) when using culturally relevant high-interest/low-level texts result in improved student self-efficacy for Palestinian-Arab middle school students with LD?
- 3. How does reading using culturally relevant high-interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?
- 4. How do the teachers value the 5MCS practices that differ from traditional culture-based instructional procedures?

The chapter is divided into four major sections in which qualitative and quantitative data are concurrently utilized to answer the four research questions. A concurrent mixed-methods researchwas implemented to capture the complexity of the phenomena being assessed by the aforementioned research questions. All students of the two conditions were invited to participate and were included in the research study upon receipt of completed parent and student consent forms (see Appendix B for the parent consent and Appendix C for student consent).

Analysis for the First Research Question

Does instruction in the mediated cognitive strategy (5MCS), when using culturally relevant high-interest/low-level texts, improve the reading comprehension of Palestinian-Arab middle school students with LD, a) when assessed by a standardized measure, and b) when assessed by a researcher made measure?

Repeated-measures ANOVA's were used to answer the first research question. For the purpose of gaining a wider perspective about the results obtained from both, standardized and researcher made comprehension measures, the data were analyzed and contrasted within the following three major categories: a) by Condition (Extended Condition, and Reduced Condition), b) by Role in Group (Group Leader, First Reader, and Second Reader), and c) by Engagement in the 5MCS (High, Average, and Low). *Analysis by Condition* 

For the first part of the question (using a standardized measure to assess reading comprehension growth from pre to post), the type of instruction received, either The 5MCS for the Extended Condition or traditional instruction for the Reduced Condition, served as the independent variable, and the difference in the number of points earned between pretest and posttest (gain score) served as the dependent variable. Separate tests were run for vocabulary and comprehension performance.

The results obtained for vocabulary and comprehension tests using standardized measures suggest that both conditions (Extended and Reduced) have shown progress in

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both measured areas from pre to post testing. However, the results indicate a greater gain in vocabulary with a mean score of 15.8 and standard deviation of 6.1 for the Reduced Condition over the Extended Condition who achieved a mean gain score of 7.8 with a standard deviation of 8.8. Whereas, the Extended Condition achieved a higher gain score mean of 26.0 with a standard deviation of 14.0 in comprehension compared to the Reduced Condition who achieved a mean gain score of 10.2 with a standard deviation of 14.5.

Table 4.1 presents the means and standard deviation scores of vocabulary and comprehension for both, the Extended and Reduced conditions, from pre to posttesting using standardized measures. Further, Table 4.1 presents the gain score means and standard deviation of vocabulary and comprehension for the two conditions using standardized measures.

Means and Standard Deviations of Pre to Post Vocabulary, Comprehension

Performance, and Gain Scores by Condition, Standardized Measure

		Condition						
			Extend	ded			Redu	ced
Variable	N	Mean	SD	Range	N	Mean	SD	Range
Pre Vocabulary	9	94.89	11.70	69.00-108.00	9	86.11	11.19	76.00- 111.00
Post Vocabulary	9	102.67	17.79	73.00-125.00	9	101.89	16.75	86.00-141.00
Pre Comprehension	9	92.22	16.07	69.00-115.00	9	98.44	14.43	90.00-135.00
Post Comprehension	9	118.78	26.57	78.00- 141.00	9	108.66	20.09	83.00-141.00
Vocabulary Gain	9	7.80	8.80	-3.00- 22.00	9	15.80	6.10	8.00-30.00
Comp. Gain	9	26.60	14.60	5.00-44.00	9	10.20	14.50	-7.00- 42.00

*Vocabulary*. The results indicated that there were no significant differences at pretest between the two conditions (See Table 4.1 for mean performances on the tests by condition). The results indicate that both conditions have improved from pre to post vocabulary using a standardized measure. However, the Reduced Condition with a mean score of 15.8 and standard deviation of 6.1 outperformed the Extended Condition who achieved a mean gain score of 7.8 with a standard deviation of 8.8. Table 4.1 presents the means and standard deviations of students' performance and gains in vocabulary.

A repeated-measures ANOVA test was used to measure group differences in vocabulary at pre test. Repeated-measures analysis for pre–post vocabulary by condition revealed that there was significant growth from pre- to post-testing (F [1, 16] = 43.75, p < .001). There were no significant differences between the Extended and Reduced conditions (F < 1, ES at post-test = .06, ns). However, a significant Time x Condition interaction was detected (F (1, 16) = 5.05, p = .04). See Table 4.2 and 4.3 for repeated-measures ANOVA analysis results. Also see Figure 4.1 for an illustration of the mean vocabulary scores on the standardized measure.

Table 4.2

Repeated Measures Analysis of Within Subjects Contrasts for Pre to Post Vocabulary Performance by Condition, Standardized Measure

<b>Tests of Within-Subjects Contrasts</b>							
Source	Pre_Post	Type III SS	Df	MS	F	Sig.	
Pre_to_Post	Linear	1248.444	1	1248.444	43.752	.000	
Pre_to_Post *	Linear	144.000	1	144.000	5.046	.039	
Condition							
Error (Pre_to_Post)	Linear	456.556	16	28.535			

Notes: SS= sum of squares; Df= degrees of freedom; MS= mean squares.

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post Vocabulary Performance, by Condition, Standardized Measure

Tests of Between-Subjects Effects							
Source	Type III SS	Df	MS	F	Sig.		
Intercept	334469.444	1	334469.444	833.554	.000		
Condition	205.444	1	205.444	.512	.485		
Error	6420.111	16	401.257				

Figure 4.1

Pre to Post Mean Vocabulary Scores, by Condition, Standardized Test



*Comprehension*. Repeated-measures ANOVA was used to measure group differences in comprehension at pre test. As noted in Table 4.1, the results indicated that there were no significant differences at pretest between the two conditions. A similar trend was revealed for pre–post comprehension scores. Significant growth was registered from pre- to post testing, (F(1, 16) = 28.70, p < .001, effect size (ES) at post-test = .23, is considered a small effect according to Cohen's [1986] criteria), with no group differences (F < 1), however, a significant Time x Condition interaction was revealed (F(1, 16) = 28.70, p < .001).

5.66, p = .03). See Table 4.4 and 4.5 for repeated measures analysis of comprehension results. Also, see Figure 4.2 for an illustration of the mean comprehension scores on the standardized measure.

Table 4.4

Repeated Measures Analysis of Within-Subjects Contrasts for Pre to Post Comprehension Performance by Condition, Standardized Measure

<b>Tests of Within-Subjects Contrasts</b>								
Source	Pre_Post	Type III SS	Df	MS	F	Sig.		
Pre_Post	Linear	3043.361	1	3043.361	28.696	.000		
Pre_Post * Condition	Linear	600.250	1	600.250	5.660	.030		
Error(Pre_Post)	Linear	1696.889	16	106.056				

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post Comprehension Performance by Condition, Standardized Measure

Tests of Between-Subjects Effects							
Source	Type III SS	Df	MS	F	Sig.		
Intercept	393338.03	1	393338.09	576.79	.000		
Condition	34.03	1	34.03	.050	.826		
Error	10912.44	16	682.03				

Figure 4.2

Pre to Post Comprehension Mean Scores, by Condition, Standardized Measure



## Analysis by Role in Group

The same measure (standardized comprehension test) used to assess students' vocabulary and comprehension for both conditions was analyzed by students' role in group (Group Leader, First Reader, and Second Reader) and by engagement in the 5MCS intervention (High, Average, and Low). All groups made gains between pretest and posttest on vocabulary and comprehension. The results indicates that Group Leaders, however, have shown a greater gain in vocabulary from pre-vocabulary mean of 101.3, with a standard deviation of 8.8, to a post-vocabulary mean of 117.1 with a standard

deviation of 14.3, compared to First and Second Readers. First Readers with a mean score of 88.0 with a standard deviation of 9.7 at pre-vocabulary test achieved greater gain on post-vocabulary with a mean score of 101, and a standard deviation of 12.9 compared to Second Readers who increased their vocabulary scores from a pre-vocabulary mean score of 82.1 and standard deviation of 9.2 to a mean score of 87.8 with a standard deviation of 9.1 at post-vocabulary. See Table 4.6 for means and standardized deviations of pre to post vocabulary performance by role in group.

Similar trend to vocabulary was observed for comprehension results for all groups. Group Leader outperformed both First and Second Readers. Group leaders improved their scores from pre-comprehension mean score of 109.17 with a standard deviation of 14.15, to a mean score of 136.3 and standard deviation of 6.28 at post-comprehension. Further, First Readers who improved their scores from pre-comprehension of 92.17 with a standard deviation of 9.2 to a mean score of 113.67 and standard deviation of 22.1 at post-comprehension outperformed Second Readers group, who only improved from a mean score of 84.67 and standard deviation of 10.86 to a mean score of 91.17 and standard deviation of 10.72 at post-comprehension. See Table 4.6 for means and standardized deviations of pre to post comprehension performance by role in group.

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Means and Standard Deviations of Pre to Post Vocabulary and Comprehension Performance by Role in Group, Standardized Measure

Variable	Role in Group	N	Mean	SD	Range
Pre_Vocab	Leader	6	101.33	8.82	87.00-111.00
	First_Reader	6	88.00	9.74	76.00- 103.00
	Second_Reader	6	82.17	9.20	69.00- 95.00
Post_Vocab	Leader	6	117.17	14.32	101.00- 141.00
	First_Reader	6	101.83	12.98	90.00- 125.00
	Second_Reader	6	87.83	8.13	73.00- 95.00
Pre_Comprehension	Leader	6	109.17	14.15	97.00-135.00
	First_Reader	6	92.17	9.22	78.00- 106.00
	Second_Reader	6	84.67	10.86	69.00- 95.00
Post_Comprehension	Leader	6	136.33	6.28	125.00- 141.00
	First_Reader	6	113.67	22.11	83.00- 141.00
	Second_Reader	6	91.17	10.72	78.00- 101.00

*Vocabulary analysis by role in group*. Repeated-measures ANOVA was performed for pre to post vocabulary by Role in Group (Group Leader, First Reader, and Second Reader). The test's results revealed significant growth from pre- to post-testing (F [1,15] = 28.3, p < .001, ES at post-test = 1, large effect), with no time x group interaction (<math>F [2,15] = 3.18, p = .07). A significant effect of group on pre-post testing (F [2,15] = 15.18, p < .001) was registered. Tukey's post-hoc test revealed that the group leaders significantly outperformed both first and second readers, who performed comparable one another. See Tables 4.7 and 4.8 for the repeated-measures ANOVA results and Figure 4.3 for pre to post mean vocabulary by role in group using a standardized measure.

Table 4.7

Repeated Measures Analysis of Within-Subjects Contrasts for Pre to Post Vocabulary Performance by Role in Group, Standardized Measure

<b>Tests of Within-Subjects Contrasts</b>							
	_	Type III				<u> </u>	
Source	Pre_Post_Vocab	SS	df	MS	F	Sig.	
Pre_Post_Vocab	Linear	1248.44	1	1248.44	43.91	.000	
Pre_Post_Vocab * Role_in_Group	Linear	174.06	2	87.028	3.061	.077	
Error(Pre_Post_Vocab)	Linear	426.50	15	28.43			

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post Vocabulary Performance by Role in Group, Standardized Measure

<b>Tests of Between-Subjects Effects</b>							
Source	Type III SS	Df	MS	F	Sig.		
Intercept	334469.44	1	334469.44	1640.54	.000		
Role_in_Group	3567.39	2	1783.69	8.749	.003		
Error	3058.17	15	203.88				

Figure 4.3

Pre to Post Mean Vocabulary Scores, by Role in Group, Standardized Measure



Post hoc comparisons using Tukey's HSD test was conducted to identify significant mean differences in pre to post vocabulary. The results indicated that the mean score differences between group leaders and second readers (M = 24.25, SD = 5.82) were statistically significant (p. .002) at posttest, and approaching significant differences between group leaders and the first readers (p. 056) at posttest.

	Multiple Comparisons								
					95% Con	fidence			
Mean						val			
(I) Condition	(J) Condition	Difference	Std.	-	Lower	Upper			
Role	Role	(I-J)	Error	Sig.	Bound	Bound			
Leader	First_Reader	14.33	5.83	.065	81	29.47			
	Second_Reader	24.25*	5.83	.002	9.11	39.39			
First_Reader	Leader	-14.33	5.83	.065	-29.47	.81			
	Second_Reader	9.92	5.83	.237	-5.22	25.06			
Second_Reade	er Leader	-24.25*	5.83	.002	-39.39	-9.11			
	First_Reader	-9.92	5.83	.237	-25.06	5.22			

Tukey's Post Hoc HSD Pre to Post Vocabulary by Role in Group, Standardized Measure

\*. The mean difference is significant at the .05 level.

*Comprehension analysis by role in group*. A repeated-measures ANOVA was performed for pre to post comprehension by Role in Group (Group Leader, First Reader, and Second Reader). The test's results revealed significant growth from pre- to post-testing (F [1,15] = 28.3, p < .001, ES at post-test = .99, large effect), with no time x group interaction (F [2,15] = 3.18, p = .07). Further, there was a significant effect of group on pre-post testing (F [2,15] = 15.18, p < .001). See Tables 4.10 and 4.11 for the repeated-

measures ANOVA results and Figure 4.4 for mean pre to post comprehension, by role in group using standardized measure.

Table 4.10

Repeated Measures Analysis of Within-Subjects Contrasts for Pre to Post comprehension Performance by Role in Group, Standardized Measure

<b>Tests of Within-Subjects Contrasts</b>								
	Pre_Post	Type III	·		· · · ·			
Source	Comp	SS	df	MS	F	Sig.		
Pre_Post_Comp	Linear	3043.36	1	3043.36	28.30	.000		
Pre_Post_Comp * Role_in_Group	Linear	684.22	2	342.11	3.18	.070		
Error(Pre_Post_Comp)	Linear	1612.92	15	107.53				

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post comprehension Performance by Role in Group, Standardized Measure

<b>Tests of Between-Subjects Effects</b>								
Source	Type III SS	Df	MS	F	Sig.			
Intercept	393338.03	1	393338.03	1630.04	.000			
Role_in_Group	7326.89	2	3663.44	15.18	.000			
Error	3619.58	15	241.31					

## Figure 4.4

Pre to Post Comprehension Mean Scores, by Role in Group, Standardized Measure



Tukey's post-hoc test revealed that the group leaders significantly outperformed both first and second readers in comprehension, who performed comparably to one another (See Table 4.12 for Tukey's post hoc results).

# Tukey's Post Hoc HSD Pre to Post Comprehension by Role in Group, Standardized

Measure

	Multiple Comparisons							
					95% Con	fidence		
Mean Interval						val		
(I) Condition	(J) Condition	Difference	Std.	_	Lower	Upper		
Role	Role	(I-J)	Error	Sig.	Bound	Bound		
Leader	First_Reader	19.83*	6.34	.018	3.36	36.31		
	Second_Reader	34.83*	6.34	.000	18.36	51.31		
First_Reader	Leader	-19.83*	6.34	.018	-36.31	-3.36		
	Second_Reader	15.00	6.34	.077	-1.47	31.47		
Second_Reade	r Leader	-34.83*	6.34	.000	-51.31	-18.36		
	First_Reader	-15.00	6.34	.077	-31.47	1.47		

\*. The mean difference is significant at the .05 level.

Analysis by Engagement

In accordance with the previous analysis conducted for vocabulary and comprehension gains by condition and by role in group, the same analysis was run for data representing students' engagement in the 5MCS.

*Vocabulary analysis by engagement*. A similar trend to that detected for student's role in group was observed for student's engagement, in which students with high and

average engagement showed greater gain from pre to post in vocabulary and comprehension. Students who were considered highly engaged or with average engagement achieved higher scores at post-vocabulary compared to students with low engagement. Highly engaged students improved their vocabulary scores from a mean score of 97.28 with a standard deviation of 7.78 to a mean score of 108.57 with a standard deviation of 11.27 at post-vocabulary. Students with average engagement, however, achieved greater scores than students with highly engagement and low engagement from a mean score of 90.80 and standard deviation of 15.32 at pretest to a mean score of 109.80 and standard deviation of 22.11 at post-vocabulary. See Table 4.13 for means and standard deviation of pre to post vocabulary by engagement.

The results presented in Table 4.13 show that highly engaged students outperformed both average and low engaged students from pre to post comprehension using a standardized measure. Highly engaged students increased their comprehension performance from a mean score of (100.57) and standard deviation of (11.53) at prcomprehension to a mean score of (133.86) with standard deviation of (8.71) at postcomprehension. Students with an average engagement, who came second to highly engaged students, increased their comprehension performance from a mean score of (100.80) with a standard deviation of (19.33) at pre-comprehension, to a mean score of (114.40) with a standard deviation of (22.04) at post-comprehension. Thus students with average engagement outperformed students with low engagement who increased their comprehension scores from a mean score of (84.67) and standard deviation of (10.86) at pre-comprehension, to a mean score of only (89.67) with a standard deviation of (11.20)

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at post-comprehension. See Table 4.13 for means and standard deviation of pre to post comprehension by engagement.

# Means and Standard Deviations of Pre to Post Vocabulary and Comprehension by

Engagement, 1	Standard	dized	Measure
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	Engagement						
	Level	N	Mean	SD	Range		
Pre_Vocab	High	7	97.28	7.78	87.00- 108.00		
	Average	5	90.80	15.32	76.00 - 111.00		
	Low	6	82.33	9.16	69.00- 95.00		
Post_Vocab	High	7	108.57	11.27	90.00 - 125.00		
	Average	5	109.80	22.11	92.00 - 141.00		
	Low	6	88.67	8.87	73.00- 97.00		
Pre_Comprehension	High	7	100.57	11.53	78.00- 115.00		
	Average	5	100.80	19.33	90.00- 135.00		
	Low	6	84.67	10.86	69.00 - 95.00		
Post_Comprehension	High	7	133.86	8.71	119.00- 141.00		
	Average	5	114.40	22.04	92.00- 141.00		
	Low	6	89.67	11.20	78.00-101.00		

A repeated-measures ANOVA test was performed for pre to post vocabulary by engagement (High, Average, and Low). The results indicated that there were no significant differences at pretest in vocabulary between the three groups (See Table 4.13 for mean performances on the tests by engagement). The test's results revealed significant growth in vocabulary from pre- to post-testing (F[2,15] = 51.89, p < .001, ES at post-test = .96, large effect), with a time x group interaction (F[2,15] = 4.34, p = .03). Further, there was a significant effect of group on pre-post test (F[2,15] = 15.18, p < .001). See Tables 4.14 and 4.15 for the repeated-measures ANOVA results and Figure 4.5 for mean pre to post vocabulary, by engagement using standardized measure.

Table 4.14

Repeated Measures Analysis of Within-Subjects Contrasts for Pre to Post Vocabulary Performance by Engagement, Standardized Measure

Tests of Within-Subjects Contrasts								
	Pre_Post		<u>.</u>	· · · · · · · · · · · · · · · · · · ·				
Source	Vocab	Type III SS	df	MS	F	Sig.		
Pre_Post_Vocab	Linear	1315.89	1	1315.89	51.89	.000		
Pre_Post_Vocab *	Linear	220.18	2	110.09	4.34	.033		
Error(Pre_Post_Vocab)	Linear	380.38	15	25.35				

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post Vocabulary

Performance by Engagement, Standardized Measure

<b>Tests of Between-Subjects Effects</b>								
Type III SS	Df	MS	F	Sig.				
327223.92	1	327223.91	1102.74	.000				
2174.52	2	1087.26	3.66	.051				
4451.03	15	296.74						
	Tests of I     Type III SS     327223.92     2174.52     4451.03	Tests of Between-Sub     Type III SS   Df     327223.92   1     2174.52   2     4451.03   15	Tests of Between-Subjects Effects   Type III SS Df MS   327223.92 1 327223.91   2174.52 2 1087.26   4451.03 15 296.74	Tests of Between-Subjects Effects   Type III SS Df MS F   327223.92 1 327223.91 1102.74   2174.52 2 1087.26 3.66   4451.03 15 296.74 1				

Figure 4.5

Pre to Post Vocabulary Mean Scores, by Engagement, Standardized Measure



Tukey's post-hoc test revealed that the students with high engagement in the 5MCS significantly outperformed the second readers. There were no significant differences between students with average engagement compared to both highly engaged and low engaged students. See Table 4.16 for Tukey's post hoc results.

Tukey's Post Hok HSD Pre to Post Vocabulary by Engagement, Standardized Measure

		Multip	le Compa	risons		
		Mean			95% Confide	nce Interval
(I)	(J)	Difference (I-			Lower	
Engagemen	t Engagemen	t J)	Std. Error	Sig.	Bound	Upper Bound
High	Average	2.63	7.13	.928	-15.90	21.15
	Low	17.43	6.78	.052	17	35.03
Average	High	-2.63	7.13	.928	-21.15	15.90
	Low	14.83	7.38	.145	-4.36	33.96
Low	High	-17.43	6.78	.052	-35.03	.17
	Average	-14.80	7.38	.145	-33.96	4.36

\*. The mean difference is significant at the .05 level.

*Comprehension analysis by engagement*. A repeated-measures ANOVA test was performed for pre to post comprehension by engagement (High, Average, and Low). The results indicated that there were no significant differences at pretest in comprehension among the three groups (See Table 4.13 for mean performances on the tests by engagement). The test's results revealed significant growth in comprehension from preto post-testing (F [2,15] = 42.81, p < .001, ES at post-test = 1, large effect), with a time x

group interaction (F [2,15] = 11.12, p < .001). Additionally, there was a significant effect of group on pre-post testing (F [2,15] = 15.18, p = .003). See Tables 4.17 and 4.18 for the repeated-measures ANOVA results and Figure 4.6 for mean pre to post comprehension, by engagement using standardized measure.

Table 4.17

Repeated Measures Analysis of Within-Subjects Contrasts for Pre to Post Comprehension Performance by Engagement, Standardized Measure

Tests of Within-Subjects Contrasts								
	·	Type III			·			
Source	Comp.	SS	Df	MS	F	Sig.		
Comprehension	Linear	2641.81	1	2641.81	42.83	.000		
Comprehension * Engagement	Linear	1371.82	2	685.91	11.12	.001		
Error(Comprehension)	Linear	925.31	15	61.69				

Repeated Measures Analysis of Between-Subjects Effects for Pre to Post Comprehension Performance by Engagement, Standardized Measure

<b>Tests of Between-Subjects Effects</b>							
Source	Type III SS	Df	MS	F	Sig.		
Intercept	382051.29	1	382051.29	1150.31	.000		
Engagement	5964.55	2	2982.27	8.98	.003		
Error	4981.93	15	332.13				

## Figure 4.6

Pre to Post Comprehension Mean Scores by Engagement, Standardized Measure



Tukey's post-hoc test revealed that both groups of students with high engagement and average engagement performed comparably, while significantly outperforming students with low engagement (See Table 4.19 for post hoc Tukey's post hoc results).

# Tukey's Post-hoc Test for Pre to Post Comprehension by Engagement, Standardized

## Measure

		Multip	le Compari	isons		
	Mean					ence Interval
(I)	(J)	Difference (I-		-	Lower	
Engagemen	t Engagement	J)	Std. Error	Sig.	Bound	Upper Bound
High	Average	9.61	7.55	.430	-9.99	29.21
	Low	30.05*	7.17	.002	11.43	48.67
Average	High	-9.61	7.55	.430	-29.21	9.99
	Low	20.43*	7.80	.048	.16	40.70
Low	High	-30.05*	7.17	.002	-48.67	-11.43
	Average	-20.43*	7.80	.048	-40.70	16

\*. The mean difference is significant at the .05 level.

### Analysis of Weekly Progress Tests by Condition

The results indicate that both conditions (Extended and Reduced) have improved in their comprehension performance from pre to post intervention on the weekly research-made progress tests. Extended Condition increased their score from a mean score of (63.33) with a standard deviation of (21.79) on week one, to a mean score of (82.22) with a standard deviation of (22.79) on week seven test. Whereas, students of Reduced Condition increased their score from a mean score of (42.22) with a standard deviation of (21.67) on week one test, to a mean score of (71.11) with a standard deviation of (26.19) on week seven test. See Table 4.20 for detailed information of both conditions means and standard deviations of weekly tests across all weeks.

Means and Standard Deviations of Weekly Tests Results by Condition, Researcher Made

Measure

		Ν	Mean	SD	Range
Progress_Test1	Extended	9	63.33	21.79	30.00-90.00
	Reduced	9	42.22	21.67	20.00- 90.00
Progress_Test2	Extended	9	50.00	26.93	20.00- 90.00
	Reduced	9	43.33	20.62	20.00- 80.00
Progress_Test3	Extended	9	60.00	21.21	20.00- 80.00
	Reduced	9	37.78	17.87	20.00- 80.00
Progress_Test4	Extended	9	65.56	18.10	30.00- 90.00
	Reduced	9	55.56	15.90	40.00- 90.00
Progress_Test5	Extended	9	72.22	18.56	40.00-90.00
	Reduced	9	57.78	27.74	10.00- 90.00
Progress_Test6	Extended	9	73.33	25.50	20.00- 100.00
	Reduced	9	68.89	20.28	30.00- 100.00
Progress_Test7	Extended	9	82.22	22.79	40.00- 100.00
	Reduced	9	71.11	26.19	20.00-100.00

A repeated-measures ANOVA test was performed for the researcher-made comprehension weekly progress tests by condition. The linear results indicated that there were no significant differences as a function of engagement level (See Table 4.19 for mean performances on the tests by condition). However, the linear test of repeated measures indicated that the groups did grow significantly in comprehension across measurement points (F [1,16] = 64.05, p < .001, ES at post-test = .25, small effect), with no time x condition interaction (F [1,16] = 1.52, p = .234). See Tables 4.21 and 4.22 for the repeated-measures ANOVA results and Figure 4.7 for mean weekly comprehension progress, by condition using the researcher made measure.

Table 4.21

Repeated Measures Analysis of Within-Subjects Contrasts for Weekly Comprehension Performance by Condition, Researcher Made Measure

	Tests of Within-Subjects Contrasts						
Source	Test	Type III SS	Df	MS	F	Sig.	
Test	Linear	12007.14	1	12007.14	64.06	.000	
Test * Condition	Linear	286.59	1	286.59	1.528	.234	
Error(Test)	Linear	2999.21	16	187.45			

Repeated Measures Analysis of Between-Subjects Effects for Weekly Comprehension Performance by Condition, Researcher Made Measure

Tests of Between-Subjects Effects							
Source	Type III SS	Df	MS	F	Sig.		
Intercept	457207.14	1	457207.14	188.12	.000		
Condition	5207.14	1	5207.14	2.14	.163		
Error	38885.71	16	2430.36				
Figure 4.7

Weekly Performance Mean by Condition on Researcher Made Reading Measure



Analysis of weekly progress tests by role in group. A repeated-measures ANOVA was performed for the researcher-made weekly comprehension progress test by Role in Group. The test's results revealed significant growth from week one to week seven testing (F [2,15] = 57.07, p < .001), with no time x group interaction (F [2,15] = .31, p = .739). There was a significant effect of group on week one to week seven testing (F

[2,15] = 12.22, p = .001). See Tables 4.23 and 4.24 for the repeated-measures ANOVA results and Figure 4.4 for mean pre to post comprehension, by role in group using standardized measure.

Table 4.23

Repeated Measures Analysis of Within-Subjects Contrasts for Weekly Comprehension Performance by Role in Group, Researcher Made Measure

<b>Tests of Within-Subjects Contrasts</b>								
Weekly Type III								
Source	_test	SS	Df	MS	F	Sig.		
Weekly_test	Linear	12007.14	1	12007.14	57.07	.000		
Weekly_test * Role_in_Group	Linear	129.76	2	64.88	.31	.739		
Error(Weekly_test)	Linear	3155.95	15	210.40				

Table 4.24

Repeated Measures Analysis of Between-Subjects Effects for Weekly Comprehension Performance by Role in Group, Researcher Made Measure

<b>Tests of Between-Subjects Effects</b>							
Type III SS	Df	MS	F	Sig.			
457207.14	1	457207.14	408.86	.000			
27319.05	2	13659.52	12.22	.001			
16773.81	15	1118.25					
	Tests of     Type III SS     457207.14     27319.05     16773.81	Tests of Between-S   Type III SS Df   457207.14 1   27319.05 2   16773.81 15	Tests of Between-Subjects Effects   Type III SS Df MS   457207.14 1 457207.14   27319.05 2 13659.52   16773.81 15 1118.25	Tests of Between-Subjects Effects   Type III SS Df MS F   457207.14 1 457207.14 408.86   27319.05 2 13659.52 12.22   16773.81 15 1118.25 1			

## Figure 4.8

Weekly Performance Mean by Role in Group on Researcher Made Reading Measure



Post hoc comparisons using the Tukey HSD test indicated that group leaders and first readers in the 5MCS significantly outperformed the second readers (p = .001, and .034 respectively). See Table 4.25 for Tukey's post hoc results.

### Table 4.25

# Tukey's Post-hoc Test for Weekly Comprehension Progress by Role in Group,

### Researcher-made Measure

Multiple Comparisons							
					95% Con	fidence	
Mean Interval							
(I) Condition	(J) Condition	Difference	Std.	_	Lower	Upper	
Role	Role	(I-J)	Error	Sig.	Bound	Bound	
Leader	First_Reader	15.48	7.30	.119	-3.48	34.43	
	Second_Reader	35.95*	7.30	.001	16.99	54.91	
First_Reader	Leader	-15.48	7.30	.119	-34.43	3.48	
	Second_Reader	20.48*	7.30	.034	1.52	39.43	
Second_Reader	r Leader	-35.95*	7.30	.001	-54.90	-16.99	
	First_Reader	-20.48*	7.30	.034	-39.43	-1.52	

\*. The mean difference is significant at the .05 level.

Analysis of weekly progress tests by engagement. A repeated-measures ANOVA was performed for the researcher-made weekly comprehension progress test by engagement in the 5MCS. The test's results showed significant growth from week one to week seven testing (F [2,15] = 67.57, p < .001, ES at post-test = 1, large effect), with no time x group interaction (F [2,15] = .1.70, p = .217). A significant effect of group on week one to week seven testing (F [2,15] = 16.20, p < .001) was revealed. See Tables

4.26 and 4.27 for the repeated-measures ANOVA results and Figure 4.9 for mean weekly comprehension progress tests by engagement using researcher-made comprehension measure.

Table 4.26

Repeated Measures Analysis of Within-Subjects Contrasts for Weekly Comprehension Performance by Engagement, Researcher Made Measure

<b>Tests of Within-Subjects Contrasts</b>								
	Weekly	Type III						
Source	_test	SS	Df	MS	F	Sig.		
Weekly_test	Linear	12069.08	1	12069.08	67.57	.000		
Weekly_test * Engagement	Linear	606.26	2	303.13	1.70	.217		
Error(Weekly_test)	Linear	2679.46	15	178.63				

# Table 4.27

Repeated Measures Analysis of Between-Subjects Effects for Weekly Comprehension Performance by Engagement, Researcher Made Measure

<b>Tests of Between-Subjects Effects</b>								
Source	Type III SS	Df	MS	F	Sig.			
Intercept	439587.40	1	439587.40	472.47	.000			
Engagement	30136.74	2	15068.37	16.20	.000			
Error	13956.12	15	930.41					

Figure 4.9

Weekly Performance Mean by Engagement on Researcher Made Reading Measure



Post hoc comparisons using the Tukey HSD test revealed a similar trend to the analysis by role in group, in which students with high and average engagement in the 5MCS significantly outperformed students with low engagement (p = .000, and .007 respectively). See Table 4.28 for Tukey's post hoc results.

#### Table 4.28

Tukey's Post-hoc Test for Weekly Comprehension Progress by Engagement, Researchermade Measure

Multiple Comparisons							
Mean				95% Confidence Interva			
(I)	(J)	Difference (I-			Lower		
Engagemen	t Engagement	J)	Std. Error	Sig.	Bound	Upper Bound	
High	Average	11.02	6.75	.263	-6.51	28.56	
	Low	36.02*	6.41	.000	19.36	52.68	
Average	High	-11.02	6.75	.263	-28.55	6.51	
	Low	25.00*	6.98	.007	6.87	43.13	
Low	High	-36.02*	6.41	.000	-52.68	-19.36	
	Average	-25.00*	6.98	.007	-43.13	-6.87	

\*. The mean difference is significant at the .05 level.

## Analysis for the Second Research Question

A self-report survey which was conducted at the beginning and by the end of intervention, and two focus group interviews that were conducted at the beginning and at the end of the intervention were used as measures at post-intervention to answer the second research question: "*Does instruction in the mediated cognitive strategy (5MCS)* 

when using culturally relevant high-interest/low-level texts result in improved student self-efficacy for Palestinian-Arab middle school students with LD?"

Students' self-efficacy in reading comprehension was measured and analyzed in two different methods. The focus group interviews were tape-recorded, coded and analyzed using a thematic analysis approach described in chapter three. The self-efficacy self report survey was analyzed using descriptive statistics and bar-graphs for visual illustration.

### Self-efficacy Focus Group

Self-efficacy focus group interviews were first conducted prior to the beginning of the intervention and a second time in the last week of the intervention. Because students in the interviews tended to respond with brief answers to most of the questions that were raised by the researcher, the information obtained from the interviews was triangulated with data from the researcher's documented daily observations and interviews with the teachers. The following three themes emerged from the data: a) reading challenges and attitudes toward reading, b) reading self confidence v. reality check, and c) encouragement v. invested effort.

#### Reading Challenges and Attitudes Toward Reading

When the students were asked about their reading habits outside the school curriculum in the first focus group, most of them expressed negative attitudes toward reading. The following is a dialogue excerpt between the researcher and the students about their reading activity outside the curriculum.

R Do you read books outside school? What do you read? How often do

you read outside of school?

- Yasmine Of course. I read poems for Nezar Qabbani [a famous Arabic poet]
- R Good. Does anyone remember anything that he or she wants to tell us about?
- Mayada I like to read novels and short stories. I once read a novel about the 'Old Man'.
- R How often do you read, Mayada?
- Mayada Sometimes, not very often.
- R How about you Munther, what do you read?
- Munther I read the newspaper.
- R Do you read it in Arabic or Hebrew language?
- Munther In Arabic, of course. I read Al-Sunnara newspaper every Friday.
- R Excellent, Munther!
- R What else do you read? Anyone else reads the newspaper?
- Hind I throw it away [the newspaper]
- R /Laughing/ You can throw it of course, but there are other people who like to read it. Do you remember anything else that you have read not for school?
- Hind No. I don't remember.
- Fulla 'Dancing Fish', I read this story and still remember it
- R Good for you, Fulla! Does anyone else want to share with us about something he or she read lately? How about you Othman and Samer?

Othman	I don't read.
Samer	I don't read.
R	What about you Azat, have you read any books lately?
Azat	I don't like reading books at all.
R	How about you Hussein, what do you like to read?
Hussein	I don't read.

For some of the students, reading is not an enjoyable activity, even when it is done on their own time and in matter of their own choices without any monitoring from others. For example, when one of the students (Munther) stated that he reads the newspaper, Hind replied "I throw it away". Azat said, "I don't like reading books, at all." The rest of the students with negative attitudes toward reading kept silent until they were called upon one by one; then their answers were the same: "I don't read."

Three students out of eight, however, stated that they like to read. Yasmine, who is considered a poor reader, based on the pretest results, was the first one to answer the question. She said, "of course. I read poems by Nezar Qabbani [a famous Arab poet]." It is worth noting that her reading abilities are among the lowest in the class, and she scored the lowest on both the standardized and researcher's weekly made tests, which may hint she has a tendency to intend to impress the audience more than state a true fact, especially because poets in Arabic are rich with its content and complex vocabulary which is very challenging to the average students at the grade level in which they are normally placed in. Mayada also replied to the question and confirmed that she reads novels: "I like to read novels and short stories. I read a novel about the Old Man". When

she was asked how often she reads, she replied "Sometimes, not very often". Munther said "I read the newspaper". The researcher asked him, "Do you read it in Arabic or Hebrew [some children may have seen a Hebrew newspaper that their parents read at home]? Munther replied, "In Arabic, of course. I read Al-Sunnara newspaper every Friday".

Recorded data from observing students in both conditions, at the beginning of the intervention, validate their negativity towards the reading activity in general. The following example was recorded by the researcher while the teacher in the Reduced Condition was teaching using traditional methods (frontal teaching):

The teacher provided around ten minutes of oral reading at the beginning of the class, in which all students alternated in reading the various segments of the passage. While Samer was reading, he made many errors. The teacher and the teacher aide, both at once, interfered to correct his errors. Nearly every time he made an error, they corrected the student's errors in front of the whole class. While they were both trying to correct his reading, his voice was gradually lowered and his errors in reading kept deteriorating with a tendency to read faster. Suddenly, Samer stopped and said: "enough for me". The teacher verbally commended him for trying and appointed another student to continue. Ameen was the next one to read. He read with many errors too and received immediate correction from the teacher for his reading. The same procedure continued until the passage was read by all students for several times. The teacher made sure that everyone read at least one or two paragraphs.

Interestingly, despite the fact that the teacher provided positive reinforcements for the students on their reading, nearly none of them initiated or volunteered on his or her own to read the assigned segment. Instead, they were called upon by the teacher or the teacher aide to read, and no one was excused from reading. This may indicate students' lack of connectedness with reading due to the many errors that they usually commit during whole class instruction. Consequently this may resemble a lack of self-confidence in their reading which may discourage them from engaging in reading activities outside the classroom.

### Reading Self Confidence vs. Reality Check

Students were asked in the first focus group about their abilities to read at the seventh grade level, and whether they feel confident enough to answer most comprehension questions. Their answers collectively were positive, that is they would definitely be able to read and comprehend a text at their grade level. This was despite the obvious significant gap between their current comprehension level and their expected comprehension at the grade level. Their answers, however, may indicate that, at least for some of them, they did not really distinguish between the mere act of reading and the comprehension part. For example, when Hussein was asked whether he can read at the seventh grade level, he said: "yes, I can read". When the following question was asked to validate whether he meant just reading or comprehending, his answer was, however, "no questions, but I can read".

Although any distinction between what the students thought of as reading and comprehending was not investigated at the individual student level, the overall

impression was that the students tended to follow a general consensus that they can read and comprehend at their expected grade level without any realistic evidence. There was no effort made by the researcher to investigate this issue further at the group level because the intention was to allow for volunteering as much as possible and to minimize students' negative feeling about themselves during the interview. The following dialogue excerpt demonstrates how confident students felt about reading a passage at their grade level.

R Now, I want to ask you about something. You are all in seventh grade, right! Let's imagine that I brought the seventh grade textbook and opened it on any random passage and ask you to read it for me. My question is: how confident do you feel about yourself that you can read the passage when asked to read?

Yasmine I don't like to read, but I have to read because I want to learn.

R I want to rephrase the question one more time. Maybe my question was not clear enough. The teacher asks you to read from the 7<sup>th</sup> grade textbook, and she wants to ask you questions afterwards. Do you feel ready that you can read it and answer most of the questions?

Samer Yes, I feel ready. I can read.

Yasmine I can read it too, but sometimes I can't.

R What about you, Hussein, can you read it?

Hussein Yes, I can read.

R Can you also answer the questions?

Hussein	No questions but I can read.
R	Who else would like to answer this question? What do you think,
	Munther?
Munther	Sure, I can read any passage and answer all the questions.
Azat	Yeah, me too.
Othman	I can read it too.
Mayada	Me too, I can read it.
R	What about you, Hind and Fulla?
Hind &	/Both nod their heads with a yes we can./
Fulla	
R	By a raise of hands, how many of you think they can read and
	comprehend a seventh grade passage from the textbook?
	/All raised their hands. All participants said that they are able to read
	and answer comprehension questions if they were asked to answer
	comprehension questions at their grade level./

# Encouragement vs. Invested Effort

It took most students in the intervention quite some time until they became convinced that their work was worth the effort they invested. In both conditions, students showed lack of interest at the beginning of the intervention. They posed behavioral challenges to the teachers and to their classrooms. Consequently, this created some tension between them and their teachers and their group members. The behavioral issues and the tension were highlighted in the interviews with the teachers as well as documented by the researcher's daily observation. The following is an example of a documented observation recorded by the researcher in his daily observations in the Extended Condition in the second week of the intervention:

While the teacher was orally reading the second segment of the passage 'Parenting Amongst the Birds' most children in the classroom were not paying attention to her reading. Othman was talking to his friend and laughing. The teacher asked him to step out so she can talk to him about his behavior. He refused to leave the classroom while arguing with her that he did nothing important that deserve her attention. The teacher warned him not to repeat the same behavior and continued reading the segment. Very soon after, the student repeated the same behavior. In response the teacher left the room and called the classroom main teacher who is in charge of the class. While trying to deal with this student's behavior, another student asked to leave the room in order to drink. The teacher refused to let him leave the room which led to his lack of cooperation for the rest of the lesson. Many other students asked to leave the room for the restrooms or to drink [such behavior, usually, occurs when the students feel bored and tired but not necessarily because they needed the restrooms]. Most students had lost their attention and interest in less than 20 minutes after the beginning of the class. The teacher at this lesson was not successful in delivering what she had planned for. This involvement in a reciprocal negative interaction between the teacher and her students, created an obvious feeling of lack of interest among the students and a feeling of frustration for the teacher who was observed raising her

voice with anger more often during the class. During this lesson, the teacher barely provided any feedback or encouragement to the students for their attempted work.

This type of negative interaction existed often during regular classroom lessons in the first part of the intervention. Contrasting this period of negative interaction at the early stages of the intervention with the advanced stages, where nearly all students were settled and used to the 5MCS activities, shows a substantial shift among the students. In the first focus group interview, the students were asked whether they ever received any sort of encouragement or positive feedback from someone about their reading. The following dialogue excerpt presents students' reaction to the question:

- R Had any of you received encouragement from anybody for reading well?
- R /Silence for seconds. Munther was observed pushing Samer to answer "no". The kids heard him and started laughing. Munther did not want to answer me directly/.
- R /I had to rephrase the questions, nearly three to five times until they got it or responded to it./
- Samer Yes. I was encouraged by the teacher once when I read "Rain Song" passage in Hebrew. I felt that it was easy to understand. I also answered all questions.
- R That's nice Samer. Does anyone else want to share his or her experience like Samer?

/Silence/

R	How about you Fulla, do you have any thing to share with us?
Fulla	Yes, I had an English teacher who encouraged me when I read
	long passages.
R	When did that happened or how did that happened?
Fulla	At the 6 <sup>th</sup> grade.
Yasmine	Please let us open the windows [winter weather but not very cold].
interrupting	
R	Who encourages you, Othman, when you read?
Othman	Nobody. I don't read a lot.
Hind	Once the teacher encouraged me.
R	Was that your classroom teacher?
Hind	Yes.
R	What about you Azat?
Azat	/No response./
Yasmine	Once I read a poem, and the teacher encouraged me. She said nice
	words to me, like good work.

Some students responded that no one had ever encouraged them. Munther wanted to draw attention, so he kicked his classmate next to him and told him to say "no". This act by Munther made everyone laugh which may have triggered some of them to feel some comfort answering the question. Interestingly, most of the poor readers chose to talk about positive experiences from subjects other than Arabic (English and Hebrew). Fulla chose to share her experience with English where she read a long passage and received encouragement. Samer shared his experience with Hebrew class where he was reinforced by the teacher for his reading. Yasmine talked about her favorite subject, poetry and that she once received encouragement from the teacher. Others commented without any specific topic or details.

The following dialogue excerpt demonstrates how the students felt when their reading improvement was positively reinforced by teachers:

R	Ok. How about encouragement, have you ever received
	encouragement from anyone about your reading, and what did that do
	to you?

Yasmine The teacher encouraged me for my improvement in the Arabic reading.

Fulla My teacher gave me points and gifts.

- Hind I was happy when the teacher gave me more points, and a gift. Also, when my grades improved she even called my mother.
- Mayada I have been encouraged by the teacher for my high grades in reading.
- Munther My mother came to visit the school and the teacher told her that I received high grades in the last test. My mother was very happy when she heard that.
- R Did that make you happy too?

Munther Yeah. I become more successful in the other tests.

R Umm, this is a great point Munther. Did everybody in the room hear

that? Can anyone tell me whether after he or she received a good grade, they put more effort to succeed in the next passages? By a raise of hands I want to see how many of you agree.

/Eight children raised their hands for a yes it helped us to improve./

- Othman I felt happy when you [the researcher] told me that my grades are improving and that I am doing really well.
- R How did that help you Othman?
- Othamn I worked harder and my grades got even much better.
- Samer I became more interested in the activities and wanted to raise my scores too.
- R Who else feels that his or her reading has become better than before?By a raise of hands let me see how many agree.

/Seven students raised their hands./

When the students were asked at the second focus group interview to share an event where they felt encouraged by others many of them had at least one incident of positive experience. Further, their answers were more concrete with examples of what type of encouragement they had received. Some of the students said that they received positive encouragement and gifts for their improved reading. Hind expressed her satisfaction for the teacher who gave her points on her feedback chart and reported her improvement to her mother. It was obvious that the students have shown some positive growth from pre to post intervention and were able to share their experiences, which led them to invest more effort when they received encouragement from a significant person.

### Self-efficacy Survey

Students in both conditions were surveyed for their self-efficacy beliefs as readers on both the application of the 5MCS and reading comprehension. The survey was conducted three times, at the beginning of the intervention, at the end of phase 1, and at the end of intervention (phase 2). Because there were many absences resulting in missing data on the midpoint survey, the data were analyzed for pre and post times only.

Participants in the Extended Condition, as reported in Table 4.29, showed a slight increase of 4.0 points between pre to post in mean self-efficacy when asked to rank, on a scale of 10-100, how confident they feel in answering questions related to the five strategies comprising the 5MCS (predicting, generating questions, investigating for meaning, identifying the schematic structure of a text, and summarizing the content). On the other hand, using the same scale of 10-100 for general efficacy in comprehension, when asked how confident they feel to answer most of the reading comprehension questions right after reading a text at their grade level on average students in the Extended Condition reported a lowered self-efficacy score between pre (86.7) and post (74.4). Participants in the Reduced Condition reported higher scores than did the Extended Condition students on the 5MCS efficacy skills at pretest (73.1). Nevertheless, their score remained nearly the same on the post 5MCS efficacy survey (74.9). Their general self-efficacy, however, increased from pre to post (70.0-86.7).

## Table 4.29

Means and Standard Deviations of Pre to Post Self-efficacy Results by Condition

Condition	Ν	Pre Self-	Post Self-	Pre Self-	Post Self-
		efficacy	efficacy	efficacy	efficacy
		5MCS	5MCS	General comp.	General Comp.
Extended	9	65.3 (12.6)	69.3 (26.0)	86.7 (11.2)	74.4 (34.0)
		55.6-75.0	22.0-90.0	70.0- 100	30.0-100
Reduced	9	73.1 (18.2)	74.9 (18.4)	70.0 (28.7)	86.7 (16.6)
		52.0-96.0	46.0 -98.0	10.0- 100	60.0-100

Note: all mean scores are out of 100. Minimum =10; maximum =100.

The graph in Figure 4.10 demonstrates the overall increase in mean scores for the two conditions on both measures of self-efficacy, 5MCS skills and self-efficacy in general reading comprehension.

# Figure 4.10

### Self-efficacy Survey Results of 5MCS and General Comprehension by Condition



*Self-efficacy analysis by role in group*. When students' self-efficacy was contrasted against their role in group the results indicated that there was a increase in self efficacy in favor of the group leaders and the first readers compared to second readers who showed a drop from pre to post self-efficacy (see Table 4.30 for means and standard deviations, and Figure 4.11 for a visual graph). On the other hand, the second readers,

who were ranked the lowest in reading comprehension based on the pretest results, showed a decrease in self-efficacy from pre (74.0 on 5MCS self-efficacy and 71.7 respectively on general comprehension self-efficacy) to post (54.3 and 60.0, respectively) on both the 5MCS and general comprehension.

## Table 4.30

			Role in Group			
Survey	Leader		First Reader		Second Reader	
	N	Mean	N	Mean	N	Mean
Pre_Survey_Efficacy5MCS	6	70.0 (6.7)	6	63.6 (18.6)	6	74.0 (19.6)
		62.0- 80.0		44.0-94.0		52.0-96.0
Post_Survey_efficacy5MCS	6	90.0 (4.6)	6	72.0 (14.5)	6	54.3 (25.5)
		84.0-98.0		48.0-88.0		22.0-88.0
Pre_Survey_efficacy_General	6	88.3 (14.7)	6	75.0 (18.7)	6	71.7 (31.9)
		60.0-100		50.0-100		10.0- 100
Post_Survey_efficacy_General	6	96.7 (8.2)	6	85.0 (17.6)	6	60.0 (34.6)
		80.0-100		60.0-100		30.0-100

Means and Standard Deviations of Pre to Post Self-efficacy Results by Role in Group

# Figure 4.11

# Self-efficacy Survey Results of 5MCS and General Comprehension by Role in Group



*Self-efficacy analysis by engagement.* A similar trend for the analysis by role in group was observed when self-efficacy survey responses were contrasted by students' engagement in the 5MCS (see Figure 4.12).

## Figure 4.12

### Self-efficacy Survey Results of 5MCS and General Comprehension by Engagement



Both quantitative and qualitative analyses indicate that students of both conditions have demonstrated some changes in their self-efficacy in reading. The results are mixed. Nearly all students from both conditions have shown some positive change towards variables that are related to self efficacy. Particularly, their self-confidence and invested effort have increased when they noticed that their performance had improved and positive encouragement was received from significant others. Some students, especially poor readers presented a contradicting picture in which they indicated that they felt confident in reading a higher grade-level passage, while in reality they encountered difficulties in reading and comprehension. The quantitative analysis, however, demonstrate that poor readers' efficacy in reading had declined from a very, unrealistically, high efficacy at the beginning of the intervention, to a substantially lower efficacy that mostly matched their recent performance by the end of the intervention. However, average readers (group leaders and first readers), who started moderately lower than poor readers in their selfreport surveys at the beginning of the intervention, have shown a gradual increase in their efficacy, based on the survey at the end of the intervention.

#### Analysis for the Third Research Question

A narrative description of data derived from the researcher's observations and ongoing informal conversations with the two teachers during the intervention, under both conditions, traditional and 5MCS, particularly in the first half of the intervention, was constructed to answer the third research question:

How does reading using culturally relevant high-interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?

In addition to observations, informal conversations with teachers, data obtained from pre to posttest using the standardized reading measure, researcher-made weekly reading measures and in-depth interviews with the teachers upon completion of the intervention were used to validate (triangulate) the descriptive findings. The data

obtained from these resources were analyzed according to their perceived relevance to the question.

As described in chapter three, the intervention was provided in two phases for the two conditions, in which the Extended Condition received the 5MCS intervention from week one through week eight, while the Reduced Condition was taught using their teacher's traditional methods in the first phase week one through week four. During that period, daily observations in each of the two conditions' classrooms, at the time when the instruction was provided, were conducted by the researcher. In the Reduced Condition, the teacher used the same reading materials used for the Extended Condition. All texts were selected collaboratively by the researcher and the two teachers following principals of High/Interest-Low/Level level texts as described in chapter three.

Due to students' refusal to be videotaped during the sessions, the researcher was not able to systematically collect data pertaining to individual student's strategy performance as described in the planned data collection procedures in chapter three. Instead, the data were collected through observations of whole classroom performance, including group interactions, in addition to informal daily conversations with the teachers of the two conditions. The researcher kept a daily log of impressions and thoughts about the process. All these recorded data were reviewed thoroughly and reread by the researcher during the time of the intervention and immediately upon completing the intervention. In the following section, due to the fact the research was designed in a way that each of participants (teachers and students) were interviewed for their perspectives on various contents related to the 5MCS and with comparison to previously employed

texts and reading experiences, the data analysis is divided into a) teachers' perspective, and b) students' perspectives on the texts that were used for the 5MCS intervention. *Teachers' Perspective on the High/Interest-Low/Level Culturally Relevant Passages* 

According to the two teachers, students improved in their reading comprehension, partially due to their engagement in the selected texts. Wafa (a pseudonym), the teacher for the Reduced Condition, stated in an informal conversation during the first phase of the intervention, that most of her students loved the texts that were selected for the 5MCS intervention. Wafa added that such texts helped them to become more engaged in the reading. She stated that "all the children want to read parts of the texts were easier compared to the ones that we used before". Wafa added that at least two of her students were shy to read prior to be taught by the new passages and that they felt more encouraged when the reading level was matched to their ability. Wafa elaborated:

"I remember that Saleem and Rama were very shy, and did not want to read unless they were called upon. Now they feel that the passages are more fun and surprisingly they raise their hands to read. I feel that the texts helped them improve their reading".

Jamila (a pseudonym), the teacher for the Extended Condition, shared similar views in relation to the impact of the relevant text and their matched reading level on the children's reading comprehension. She felt that the text were very inviting and much more easy and closer to the students' reading and comprehension level, compared to the previous traditional materials that were remarkably above students' reading level.

When we taught 'Saq El-qasab' [Sugar Cane] passage, for an example, I had to read the text with the students several times and to discuss every sentence, and ask questions about everything to make sure they understood the content. Yet, it was difficult for most students because of the many complex vocabulary words that such passage had, which is, obviously, above students' reading level. When we started the new passages that we selected for the 5MCS, especially the narrative passages like 'the Story of Abu Eldahdahand and the Prophet' and 'The Folkloric Stories of Juha and Ash'ab', I noticed that it was easier for most of my students to read on their own, except for one student, and that made it more interesting for them. Some of the students were able to answer comprehension questions even before the passage was discussed for a whole class. This, I think, made it more interesting to the children.

Students, as noted by the teachers, were able to use their background knowledge and experiences to connect with the new passages. "This matched reading level, probably helped most of them to remember the content and improve their comprehension performance," said Jamila. The teacher added:

When I taught the passage 'Ash'ab and the Fish', I felt that everyone was attending to the text. They were excited and shared their experience because they knew about the character before. Ash'ab's character was well known in the Arabic literature as a person who loved to eat and attend every invitation. Therefore, the children knew what to expect from the text and that helped them

remember many of its details. Their participation was noticeable, especially the poor readers such as Hussein, An'am and Fulla.

Wafa, the teacher of the Reduced Condition shared the same experience, but she elaborated on a different passage. She mentioned that:

'The Ignorant Friend' was a very popular passage, because it talked about friendship between humans and non-humans, and that made it very interesting, considering the age they are in right now where friendship is important to them. Nearly all students fully participated in the passage, and shared their stories with connection to the text. They introduced problems to the conflict that the main character of the passage experienced. Their predictions to what might happen next, helped them to stay focused on the following segments that they received during the rest of the week's sessions.

### Students' Perspective on the High/Interest-Low/Level Culturally Relevant Passages

Students in both conditions, as noted by the teachers in the interviews, showed much interest in the new passages compared to previously taught passages. In the first focus group interview, which was conducted at the beginning of the intervention in week one, many of the students did not recall any positive experience when they were asked whether they could recall that they had fun or felt confident reading any particular topic in school. On the contrary, most students either said that they did not like to read in Arabic or mostly they chose subjects other than comprehension in Arabic, such as Science, Hebrew and English. The following dialogue excerpt was recorded between the researcher and the students from both classes who participated in the interview to answer the following questions: What is the thing that you most like in school or that brings you to school? How about things you don't like in school?

- Azat English. I like English.
- R /Paraphrasing student's answer:/ That is, when you prepare yourself in the morning to come to school, like you say to yourself that English class is the most interesting thing to me that brings me to school. Is this what you feel about school?
- R /Room is silent. The researcher tried to probe more answers/. What really are the things that make you come to school? You can say whatever comes to your mind honestly and frankly, no one is going to hold it against anyone of you, no matter what you say.
- Samer Rawda [pseudonym] (the teacher's assistant) always put herself in the middle and interfere with whatever we do. and this upsets all of us
- Yasmin We feel like in prison. We can't ask her to leave the room. She doesn't allow us to go to the restrooms.
- R /Many students agreed on commenting on the teacher's assistant behavior./ Yasmin added "she shuts the windows and the door and controls us".
- R I understand that these are some of the things that you don't like about school, and of course you have the right to be upset about this issue, but what about things you really like in school?
- Hind I like the science class.

Fulla	I like Hebrew class the most.	
1 una	T HKC HCOTCW Class the most.	

Mayada I like literacy class, particularly, story and poetry.

R /Trying to encourage Hussein to talk/. What do you like in school?Hussein I like Hebrew.

R What about Reading in Arabic, what do you think of it?

Othman I don't like the reading (Arabic)

R What is the problem in reading in your opinion?

Othman I know how to read, but don't like it. I like Hebrew more.

Most students, when were asked to recall a passage that they ever read

successfully and felt confident about showed difficulties remembering or connecting to

any previous reading experience. The following dialogue excerpt demonstrates students'

lack of connection to curriculum texts.

R Has anyone read a passage and felt that he or she fully comprehended it?

Munther Me.

- R Which text was that?
- Munther From 7<sup>th</sup> grade
- R How did you feel when you read it?

Munther Ok

- R How about you Samer?
- Samer Honestly, never. When I read, I read fast and make many errors.

R	/The children got distracted, and seemed to lose interest in the topic.
	I had to break for about 4 minutes. They were provided with
	refreshments. /
R	/After the break. /
	Ok. Can we get back to the point where we stopped? I was asking
	whether anyone had an experience of mastering a passage and how
	he or she felt about it. /Silence. No volunteers to answer./
R	How about you Mayada?
Mayada	'Saq Elqasab' [Sugar Cane]. I was able to read it very well.
R	Othman, what about you?
Othman	Don't remember
R	Fulla
Fulla	No, never.
Hind	No.
R	Anyone else, how about you Hussein do you want to say anything
	about it.
Hussein	/No answer/

Yasmine Yes. Once I read well 'the Long Pants' passage.

From these answers it was evident that only three students, Munther, Mayada and Yasmine, were able to recall an event where they felt confident about at least one text that they read in the past. This status changed remarkably by the end of the intervention.

When the same students were asked in the second focus group interview to share their experiences about a text that they liked the most and felt confident about themselves while reading, they mostly used examples of passages from the intervention. Except for Hussein who did not answer the question and Yasmin who shared a topic from passages prior to the 5MCS intervention, all other students shared at least one or two passages for which they felt self-confidence while reading. Other students, namely Azat and Mayada who were advanced readers and played group leader roles, reported that they liked all the passages that were given to them during the intervention.

The following dialogue excerpt from the second focus group interview demonstrates how students grew in their answers compared to the first interview.

R	Would anyone tell me about a passage/text that he or she felt
	confident about reading it?
D	

R	/Nearly all of them raised their hands to answer except for one
	student, Hussein, who kept silent./

- Samer 'The Magical Hen'. I felt that I was able to read that passage very well and I liked it.
- Munther I liked 'The Story of Abu Eldahdah and the Prophet'. This passage was easy for me to read and understand.
- Othman Me too, I liked that story [The Story of Abu Eldahdah and the Prophet] and I was able to read all of it well.
- Hind Yeh me too. I liked 'Abu Eldahdah' and 'The Ignorant Friend' Story was fun too.
| R How about you Aza |
|---------------------|
| к поw about you Aza |

Azat I was good at all of the passages, especially 'The Moon' passage.

R Fulla, do you have anything to tell us about this?

- Fulla Yeh. I liked 'Saeed and the Magical Hen' story and I was able to read it better.
- Mayada I liked all the passages especially 'The Story of Abu Eldahdah and the Prophet'.
- R Hussein, do you want to say anything about the passages that you feel the most comfortable with?

Hussein /Silence. No response. /

Yasmine I still remember the "Long pants" I was good at.

Students of the Reduced Condition, in the first phase of the intervention, were observed by the researcher to have been engaged most of the time when the teacher was working with them on the 5MCS passages. Students seemed interested in the content and were making comments during the reading and group work. When the students were divided into two large groups by the teacher, to work on specific tasks (e.g., searching for information that answer the teacher's pre-prepared questions within the passage), they showed interest in the content and were able to reflect on the questions using their prior knowledge about the content. The following researcher's recorded observation captured this interaction with the content of the culturally relevant passages:

After the teacher of the Reduced Condition had modeled oral reading of the passage 'Folkloric Stories of Juha and Ash'ab', and had all students read the passage, she divided the class into two large groups (one group of five students including mixed reading abilities, and the other one was with only four students of similar characteristics to the first group). The task, which was provided on a separate card for each of the two groups, was to answer a set of questions about information that were mentioned in the passage. The teacher directed one group to look at the questions and asked them: "do you think that Juha was wise in doing what the people kept telling him to do?" Rama looked at the six small pictures that were provided by the text and said: "I knew that Juha would do anything that people ask him to do, because he is funny and sometimes he doesn't use his brain to think about the solution." Azat replied, "yeah, he is funny, and I read stories about the way he behaves." The teacher asked them to think about the question based on the content provided by the passage. Then Rama said, "I think because he wants to please everyone." The teacher said: "That is a one possible good answer. Can you all think about other possible answers by looking again at the passage?"

In the Extended Condition, while the students were working in their small groups, they were asked to pose thin and thick questions that would be answered from the passage about 'Ash'ab and the Fish'. Siwar was observed asking her group members the following questions: "why doesn't Ash'ab like the small fish?" and "what if Ash'ab did not see the big fish would he eat the small fish?" The researcher, who was an active participant, asked Siwar to discuss the answers with the group members. One of the answers was that Ash'ab would eat anything because he loves food. Munther said" I

think he will only eat the big fishes because they say in the passage that he loves to eat the best food." The discussion in the group continued and the teacher commended them for their work. When the teacher summarized the lesson, she asked the students about their opinions of the passage, and which story of the two they liked best, 'Juha and People' or 'Ash'ab and the Fish. Some students said that they liked both stories because they were funny and they knew some previous stories about the characters. Other students were very precise and chose one over the other. Othman said that he liked Ash'ab's story because he was smart. Munther agreed and added: I liked Ash'ab's story because he knew how to get the things he liked." Siwar said she liked Juha's story more because he is very funny and that she remembered jokes that are told about the character.

The above recorded observations from both conditions demonstrate the level of students' cognitive engagement in a text that is related to students' prior knowledge and culture about folkloric characters. Views expressed during the focus group interview validate students' tendency to value texts more that are culturally relevant. It can be observed from the students' responses to the question that prompted them to share their experiences about a passage or a text that they felt confident about reading, most students shared experiences about narrative passages. In particular, based on the answers that the students gave, the 'Story of Abu Eldahdah and the Prophet' was the most popular. It is not surprising, given the students knew that much about prophet Muhammad who is considered an essential part of their daily lived experiences.

Analysis for the Fourth Research Question

A thematic analysis was performed to answer the fourth research question: "*How* do the teachers value the 5MCS practices that differ from traditional culture-based instructional procedures?" The two teachers were individually interviewed, each in a separate allocated time for the purpose of capturing their opinions in-depth on the application of the 5MCS and its impact on students. The interviews were constructed in a semi-structured design, in which each interview included five key questions with follow-up sub-questions as needed throughout the interviews. The full interview protocol is presented in chapter three. All interviews were conducted in Arabic language, which is the first language of both, the teachers and the researcher.

Data stemming from the interviews were thematically analyzed following procedures used by Braun and Clarke (2006) as described in chapter three. Major ideas that emerged from the data were categorized into the following five themes, a) structure in the 5MCS, b) academic enablers, c) classroom dynamics, d) self-directed, and e) pedagogical shift. All emerging themes are related to the five questions presented at the interview. Each of these major themes was supported by key points that are described in the following section.

### Theme One: Structure in the Five Mediated Cognitive Strategies

Both teachers emphasized that structure was a unique character for the 5MCS. The teacher, while discussing this major point (structure), brought examples and connected several other key points to support their claim. These key points are subthemes that make the major theme (structure in the 5MCS) included a) organization and order of the strategies, b) small groups and collaboration, c) social roles within the groups, and d)

teacher's constructive feedback. The following section provides a discussion of the subthemes that form the theme structure in the 5MCS.

*Organization and order*. The teachers compared their previous teaching methods to the methods used in the 5MCS intervention and concluded that the way that the 5MCS was implemented brought organization and order to both the students and teachers. Jamila stated that compared to the 5MCS her previous strategies were not as organized:

What I discovered later that my strategies were so scattered with no clear directions. I used to teach reading comprehension and I had some strategies, but nothing was organized the same way similar to how the 5MCS were introduced to us with the deep knowledge that these strategies have brought to us (the teachers).

Wafa confirmed what Jamila had said: "there are other good strategies that I used before, some of these strategies, such as, the predicting and looking for new vocabulary were implemented, but not as structured and meaningful as they have been applied in the 5MCS". Wafa emphasized that these strategies helped her and her students to become more organized in her comprehension instruction:

The beauty of the 5MCS it included structure and organization that helped children anticipate the structure and work accordingly. We [the teachers] used some of these strategies before, but our strategies were not organized into procedures or any kind or specific order.

Wafa added that

[The] thing that the most amazing is that the structure and order which was applied in the 5MCS reflected on the children who became more organized in

their work, and became more engaged in the thinking process. They have become more strategic in their thinking and work. They became more independent in that they knew they would have to follow the appropriate steps by applying these strategies.

Not only students benefitted from the 5MCS structure, but also the teachers benefited from the same structure. Wafa summarized this point in her own words: "And to me as a teacher I become more organized that I have a structure and a clear line of thinking which was reflected on my working habit"

*Small groups and collaboration.* The impact of working in small groups was remarkably positive for students, especially for the poor readers. The teachers claimed it provided some privacy to the poor readers. Wafa thought that working in small groups minimized the differences among the students, especially among those with lower self-esteem.

Good things about the 5MCS are the group system which eliminated the differences among children. In a larger group some of the children were reluctant to read out loud and make mistakes in front of everyone. Now when they became in smaller groups, it gave them some privacy and comfort that not everyone is watching them fail or correcting them. This was true for the ones with low self esteem who were shy to read or answer knowing that he might get it wrong. In a whole class intervention, a student like Hind used to lower her head when answering any question, but in her group of three girls she acts differently.

Jamila, the teacher of the Extended Condition, added that in small groups all children have more opportunities to collaboratively share their work with their group members and that it allows for turn taking due to the nature of the group roles.

Often I marginalized students like Hani in a whole class instruction because the dynamic is that the strong ones raise their hands quickly and aggressively try to take over when there is a discussion. During the 5MCS, on the other hand, this tendency lessened because the children are in small groups already and there are several groups running at the same time. This provides them with more opportunities to work collaboratively and that everyone has a turn. The psychological aspect of being in a small group helped everyone but mostly the poor readers. They have become unified members in their own heterogeneous groups. They got used to the procedures and activity order. In a large group they were shy to participate.

*Social roles in the group.* Both teachers emphasized the significance of the group roles. Jamila stated that group roles were significant for many children, especially for the leaders who provided modeling for the less competent readers. She stated:

The way we used the 5MCS with the group roles worked perfect. We had the leader, first reader, and second reader. This gave them some significant roles to play. The group leader was so significant in that the other group's members benefited from her or him by apply the strategy correct and that was helpful in terms of providing a model for the less competent children.

Wafa, on the other hand, indicated that although the group roles were positive in general, she questioned the impact of the leader role, especially because it caused some students to rely heavily on the leader while engaged in the activities.

One thing here was related to the leader. I felt that the other partners often took the leader role as the one role that should take more responsibilities and thus has to do most of the job. Some of them occasionally withdraw from participation because of that.

*Constructive feedback*. Jamila brought an example for her role in providing constructive and continuous feedback to her classroom, especially to the students with tendencies for behavioral problems.

Two of my students posed a real behavioral challenge to the classroom, but throughout the continuous feedback they were able to restart from the beginning. Later they showed interest and were engaged in the activities. I am as a teacher; do not feel surprised by their behavior, because these children have complex issues, not only academic difficulties.

The teachers of both conditions considered that structure with its key components (i.e., organization and order, small groups and collaboration, social roles in group, and constructive feedback) was one of the main characteristics that represents the 5MCS. Other key points that the teachers brought to the discussion addressing social skills, study skills, motivation, and engagement are discussed under the second theme, referred to as academic enablers.

# Theme Two: Academic Enablers

Both teachers pointed in various comments to the attitudes and behaviors that helped their students to achieve better results in vocabulary and comprehension during the application of the 5MCS. Described attitudes and behaviors included engagement, motivation, social skills, and academic skills. These terms, are connected to a key term that has been well documented among researchers in the past two decades, 'academic enablers' (see e.g., DiPerna & Elliott, 2002; DiPerna, 2006; Elliot, DiPerna, Mroch, & Lang, 2004; Greenwood, 1991). Academic enablers (e.g., social skills, study skills, motivation, and engagement) are described as "student attitudes and behaviors that facilitate a student's participation in, and benefit from, academic instruction in the classroom" (Elliot et al., 2004, p. 3002). Academic enablers are described as prerequisites for academic achievement and as influential to the development and use of academic skills (e.g., reading and writing) (DiPerna, 2006; DiPerna & Elliott, 2002).

*Engagement*. Although it was never reported as a separate concept that stands alone, engagement, as viewed by the teachers was a key component in the 5MCS and was always connected to other essential key concepts. Wafa made a cyclical connection among engagement, motivation, and self-confidence. "The 5MCS gave them selfconfidence, strategies to use, to become more engaged, to be more motivated with a feeling that "I can"... it enabled them to show their abilities". Wafa added that:

The strategies are not 'fixed' in advance so that students would only apply them. Instead, the student feels like 'I work and I feel that I am actively engaged'. This point is very important, especially for the students who are independent or a little advanced in reading but needed some structure.

When the teacher was asked to describe the difference between the 5MCS compared to other previous teaching methods that had been used, she emphasized the connection between independence and engagement adhering to the structure that characterized the 5MCS.

I would see the independency and engagement as the two variables that the 5MCS have provided for the students the most. There are other good strategies that I used before, some of these strategies, such as, the predicting and looking for new vocabulary were implemented, but not as structured and meaningful as they have been applied in the 5MCS. In the 5MCS students became independent learners, engaged and active.

Jamila discussed engagement within the behavioral context. She described a case of two good readers who exhibited behavioral problems in the first half of the intervention, which negatively affected their engagement in the activities. Later and due to her continued support and feedback, these two students, according to the teacher, "showed interest and were engaged in the 5MCS activities".

*Motivation*. Once students in both condition felt they have some level of 5MCS mastery they were more motivated and showed an interest in the activities. Jamila, the teacher of the Extended Condition, expressed her observation of the change that occurred to her students: "I observed them working independently. This ability of self-ability and motivation to start working without any special prompt from the teacher did not ever exist before the 5MCS implementation".

The teacher added that the students were entirely different in the second half of the intervention, especially after introducing the games, in which students roll the dice and answer the questions that correspond with the number that comes after rolling the dice. These games were also connected to a time stopper which tells them when to stop. All these elements, according to Jamila motivated the students.

After the games it becomes more stimulating for the children which resulted in increased motivation. The students liked the stopper and were aware of its effect on their work. It helped them organize their time. Their value to the time has become more important. At the beginning we did not used the time efficiently, so they were not able to know how much time and effort they need to invest on every activity. After we have introduced the dice rolling they started to compete against the time and produce more work.

Jamila stated that even some of the poor readers showed interest in the 5MCS, and she gave an explicit example: "Hussein showed some interest and at some point he tried to compete with his group members in reading. Before that Hussein never showed interest in anything". Wafa talked about motivation in connection to the difference between girls and boys. She noted that the girls were more motivated than the boys. "I felt that the girls' group was more active, disciplined, and much motivated and organized".

*Social skills*. The teachers of both conditions expressed that many students have shown some changes due to the 5MCS intervention. Particularly, they talked about the social skills changes among both competent and poor readers. Social skills are "learned

behaviors that enable a person to interact with others in ways that elicit positive responses and assist in avoiding negative responses. Examples of such skills include sharing, helping, initiating communications, requesting help from another person, and giving compliments" (DiPerna, 2006, p. 10). Wafa noted that:

The psychological aspect of being in a small group helped everyone but mostly the poor readers. They have become unified members in their own heterogeneous groups. They got used to the procedures and activity order. In a large group they were shy to participate. Hani, for an example, despite the low influence of the 5MCS on him, he showed some progress in that due his social role in the group and cooperation among group members. At the beginning he was very shy in providing answers out loud, but when he started to work with his group, he was the first one to orally providing me with the answers. This gave him some confidence.

Wafa gave another example for a student who did not seem to show positive change in the standardized comprehension measures.

I want to add that Yasmin who was reluctant to participate in a whole class instruction, she had shown some positive progress lately and I felt that she wanted to get closer to the group members. Yasmin was not popular in class. Nearly everyone had rejected her. However, being in this small group of girls helped her getting closer to the group and softened their tendency to accept her more.

Jamila connected social skills through the social role which were developed for the group work. The teacher noted that "the group leader was so significant in that the

group members benefit from her or him to apply the strategy and that was helpful in terms of providing a model for the less competent children".

*Study skills*. The 5MCS is designed in a way that aims to improve students' reading comprehension skills. These skills are referred to as study skills. Study skills, according to DiPerna (2006), "include a variety of cognitive skills and processes that help students acquire new information efficiently and effectively" (p. 9). Study skills may include competencies, such as summarizing, organizing, synthesizing, and recalling data.

The teachers used several examples to illustrate how the 5MCS impacted their study skills. Jamila noted that competent readers "were able to tremendously benefit from the strategies, Othman is a good example, who showed a very rapid change once he learned the strategies and his behavior improved".

She gave another example of a student who is a competent reader and had no behavioral problems. "Siham, for example, right from the beginning, understood the ideas and became mature in using it. The impact of the strategy was strong on her". The teacher added that the 5MCS affected not only the competent students, but that poor readers were influenced as well. Here is one example of such a statement:

Hussein was extremely weak in reading from the beginning of the school year. He learned gradually, with some limited ability, how to use the strategies. He has improved in generating simple question, and learned how to use some help from his group to look for the meaning of some of the words.

Wafa referred directly to one of the 5MCS strategies to show how it helped to improve students' study skills:

In summarizing the passages it was helpful to understand the connection between the ideas and the main points. This strategy taught students that it is not merely a mechanical reading of a certain passage, but rather it is to dig deep and try to understand the main ideas. We modeled how to summarize main ideas on the board. The fact that students started to sort out key sentences and to point on supporting details gave them some tools to see what important and what is less important when trying to summarize an idea.

Academic enablers which include social skills, study skills, motivation, and engagement were discussed by the teachers as some of the behaviors that indicate students' interest and investment in the 5MCS. The teachers discussed other points that influenced the flow of the 5MCS. Such points included a) time needed for additional practice, b) students' behavior and c) marginalizing poor readers by the teachers in order to control the classroom. These key points are discussed next as part of the third theme 'classroom dynamics'.

#### Theme Three: Classroom Dynamics in the 5MCS

Classroom dynamics played a major role in the 5MCS application. Particularly, time and students' behavior interacted as two main components of classroom dynamics for the two conditions. As a result, the teachers tried to control behavioral challenges by marginalizing students who might need their attention as much as everyone else in the classroom. Students' behaviors, especially, resistant behaviors, including lack of cooperation were dominant at the beginning of the intervention in both conditions. Due to the complex nature of the strategies involved in the 5MCS, it took considerable time and

effort on the part of the teacher to model the strategies and train the students to practice the strategies and be in charge of their social role taking within their assigned groups. While engaged in these activities, some students who exhibited behavior problems caused delay and distraction in applying the strategies as planned.

*Time*. The teachers emphasized the importance of providing additional time to learn about the 5MCS for both themselves and the students. Students needed more time to practice and model the 5MCS, especially students with behavior problems. Wafa talked about children with behavior problems needing additional time to adjust to the strategies.

Children with behavioral issues needed more time to absorb the strategies. I think they needed more time for practice till their behavioral problems stop and for the strategies to start to work.

Jamila stressed the importance of allocating longer time for the teacher to practice prior to initiating the 5MCS with the students, and later to provide more time for the students.

We felt stressed with the time. Maybe these strategies should have been taught thoroughly to teachers before introducing the strategies to the students. Then we could have made more time available for practicing the strategies for the students.

*Students' behavior*. Both teachers indicated that students' behavior was an essential component in maintaining an optimal flow of the 5MCS instruction. Wafa asserted that "With no doubt, students' behavior is an essential part in allowing them to learn. Their readiness to learn is directly connected to their ability to sit and cooperate

with the teacher. This will positively impact the learning process and thus the results will be better".

For both teachers, behavioral problems that occurred while engaged in the first part of the 5MCS instruction, especially prior to mastering the strategies, posed a real challenge in the face of applying the strategies. Students' disruptive behaviors affected the flow of the activities which caused some delay for some students until they became engaged in the instruction. Wafa claimed that:

This issue [the behavior] took quite some time until the children became more disciplined and cooperative in the process. And here, I think, the gap existed between the ones who have behavioral problems and the ones who did not exhibit behavioral problems.

This claim was confirmed and illustrated with an example from the teacher of the Extended Condition:

I think it was [the behavior] an obstacle, because few children with behavioral problems affected the whole class. Othamn was very affected by Munther's behavior and they were stuck in that they were not productive. It affected the flow of the strategies. Munther had behavioral issues that posed a genuine obstacle to the class. He was a major influence on the classroom, especially on Othman, his friend. These two students in particular, when they should have been engaged in a particular activity and proceed to the other activities, they, instead, would have stayed in one step and not show any progress at all.

The teachers claimed that the students who exhibited positive behavior while conducting the 5MCS were among the ones who achieved the highest performance. Wafa noted that the "ones with no behavioral problems were able to transfer and adjust easily to the new 5MCS and thus they have improved academically the most".

*Marginalizing poor readers*. Both teachers expressed some level of frustration due to behavioral problems that erupted during the first part of the 5MCS implementation. Consequently, the teachers seemed to intentionally marginalize poor readers, who were not the major sources of problem behavior, in whole class instruction. According to Jamila, working with problematic students consumed her time and energy. As a result, the teacher made a decision to compromise and work with the students who had behavioral issues, in order to keep the whole class functioning. This comes on other students' time and needs, especially low performing students who might benefit from the teacher's interaction. Jamila stated that:

This is unfortunate, that I would not provide sufficient and fair amount of time to everyone's need it, but because I understand the circumstances I preferred to keep the troubling boys under my control, and provide them with continuous feedback, so I would not loose their cooperation.

Wafa, in agreement with Jamila, used the same strategy to keep the whole class functioning. The teacher used the term 'marginalizing' to indicate how the behavioral issue was overwhelming to her.

I often marginalize students like Hani in a whole class instruction because the dynamic is that the strong ones raise their hands quickly and aggressively try to

take over when there is a discussion. During the 5MCS, however, this tendency lessened because the children are in small groups already and there are several groups running at the same time. This provides them with more opportunities to work collaboratively and that everyone has a turn.

The behavioral problems were mainly an issue in the first part of the 5MCS application. It was especially true for the Extended Condition in the first half of the intervention and in the first two weeks for the Reduced Condition. Once the classrooms were more settled with the 5MCS applications, the behavioral issues were less dominant in both classes, which was reflected in Wafa's statement. Classroom dynamics, as discussed by the teachers, was influenced by the time that was needed to prepare students for the new strategies, and teachers' attempts to control students' behavior, which resulted in marginalizing poor readers. The influence of the 5MCS on students' independence and self-confidence is discussed as part of the fourth theme 'self-directed'. *Theme Four: Self Directed* 

Independence and self-confidence. Due to the premise of the 5MCS allowing students responsibility taking reciprocal roles within each group, students who were involved in the 5MCS intervention learned how to take control over their independent work. They were able, after they had been trained by their teacher, to run the activities independently by following the sequence of the strategies and cueing cards which were provided to them during the sessions. According to Jamila, the 5MCS "affected children's independence". She added:

Before the 5MCS was implemented, I used to give my students some form of independence, but not at this level that was introduced by the 5MCS. Now they can run the class independently, as you have noticed [referring to the researcher]. I enter to the class; the children start rolling the dice which will lead them to the strategy that suppose to be applied next, and all this happen before I even tell them to work. In the last two weeks, for example, I happened to sit for quite a sometime for part of the sessions with one student whose group members were absent while the rest of the groups are working, and I observed how the children worked from the side. I noticed they were working independently. This ability of self-ability and motivation to start working without any special prompt from the teacher never existed before the 5MCS implementation.

This independent behavior and the feeling of self-confidence, which were influenced by the 5MCS were also observed by the teacher of the Reduced Condition. She claimed they were strongly evidenced by the female group. "I felt that the girls' group was more active, disciplined, and much motivated and organized. The ability to feel more secured... their self confidence increased and this gave them independence".

When the teachers were asked to comment on students' responses to the 5MCS compared to other previously applied methods, the term *independence* was emphasized again. Wafa said:

I would go more on the independence and engagement that the 5MCS have provided for the students. In the 5MCS students became independent learners, engaged and active. They took responsibility on their learning. The student has a

bigger role and more active in the learning process. He is a learner, independent... not dependent on the teacher or others. Before the teacher is always in the picture and dictates what should be done at all times. Here, in the 5MCS, the student is relying on his abilities and forced to put more effort. This is the part that attracted me the most.

Both teachers attributed students' independence and self-confidence to the impact of the 5MCS on students. Students' tendency to work independently was not common prior to the 5MCS application. Consequently, students' confidence was improved. The teacher who reported that the students have shown remarkable change during the 5MCS also reported that this intervention affected their views as well. Both teachers talked about the change that they went through. This change is discussed under pedagogical shift the following theme.

#### Theme Five: Pedagogical Shift

The teachers demonstrated that they transitioned from doubts and disbelief in the value of the 5MCS at the initial implementation of the intervention to a more positive disposition by the end of the intervention, thus evidencing a pedagogical change. Jamila, the teacher of Extended Condition indicated that she did not value the 5MCS at the beginning of the intervention, but she acknowledged later she realized how important these strategies were to her students.

At the beginning I was thinking to myself, what possibly could these new strategies give us that we never had before? We already implement some of the

strategies. At first I wondered 'Are these strategies with their structure and order going to help my students better than what I have done before?'

Jamila added that she questioned the importance of the routine and repeated application of the strategies by the students on a daily level.

Also, I asked myself whether conducting these strategies at the same way every day with some routine will bring any good to the children! Surprisingly, I discovered that these 5MCS strategies helped students to internalize and deepen their understanding of what reading comprehension is. Later the children were able to use the strategies to help them understand the passages. This was obvious from the results and from their daily progress from the onset of the research till now.

Wafa, the teacher of the Reduced Condition, shared a similar view to that shared by Jamila. She illustrated her doubt about the potential of the 5MCS to help her students improve in comprehension compared to what she has done using her teaching methods. The teacher offered the case of Saleem, she did not believe in his abilities, or was not aware of how to bring him to the level where he could show his potential skills.

Saleem have become more initiative and independent. Theses strategies clearly raised him as a unique student who was vey hesitant and reluctant with low self esteem. But when he took the leader role he showed his abilities and quickly learned the strategies and applied them in his work and with his peers. This truly provided him with the opportunity to demonstrate his abilities in front of the class.

I was aware of his abilities, but did not know how to highlight them, but when he worked in his group as a leader he was able to show his leadership abilities. This made a big shift in my thinking. I could not imagine how he [Saleem] can flourish. I knew that he had some abilities but I did not know to what extent. Finally, when I saw that he is changing 180 degrees [in comprehension gains and social skills] then I became convinced that the 5MCS has an effect on him.

The teachers indicated that the 5MCS did not only make a change to the students, but also it changed their perspective on the importance of the 5MCS. Wafa stated that it helped her to become more organized and reflective on her teaching methods. "I have become more organized. I feel that I have a structure and a clear line of thinking which was reflected on my working habit". Jamila said "the 5MCS have changed my attitude towards the reading strategies and its importance to the children".

Jamila indicated that she liked the 5MCS model and that she would adapt it as a teaching method with some modifications:

This satisfies me, but I think there must be a continuation to this project and I would like to continue with the 5MCS on my own and maybe I would develop it more based on the children's needs. I think would keep the basic format of the 5MCS including the strategies, the way they were ordered, but may be I would think of introducing more ideas.

Although, it took the teacher valuable time and effort to be engaged in the 5MCS intervention, she believed that it should continue and be implemented with the students in the future.

It takes a lot of time and effort from the teacher to capture everything. I felt that I need to be more available but I had other things to do in school. This research took much time, even from my recess time were I felt that I should be available to discuss issues that arose during the intervention. This added more pressure. However, I was happy with the process and the results, and I would definitely redo this research in the future.

In their final comments, the teachers indicated that the 5MCS was very important to the students and helped them improve their skills. Jamila stated "these 5MCS strategies helped students to internalize and deepen their understanding of what reading comprehension is". The final comment made by Wafa summarizes this positive attitude:

The 5MCS intervention was extremely good for the children. It was a tool for progress and independence. It was a very successful technique. It deepened students' understanding. It gave them a method to apply their skills.

The five themes emerged from the interview with the teachers concerning their valuing of the 5MCS and its impact on students' comprehension and self-efficacy. Collectively, the themes indicate that the teachers considered the intervention successful, highlighting the importance of: a) providing the appropriate structure that organized students' and teachers' working environment within the 5MCS, b) providing a earning environment that strengthen students' academic enablers, including engagement, motivation, social and study skills, c) controlling classroom dynamics by providing activities that deal with students' behavioral issues and allow for sufficient practice time prior to conducting cognitive strategy activities, d) strengthening students' self

confidence by allowing more independent work and peer tutoring opportunities, and, finally, e) the teachers felt that the 5MCS changed the way they perceived comprehension instruction. The 5MCS, as evidenced by the themes, reflected a change from the previously applied instructional approaches and provided valuable resources and tools for students and teachers to use.

## Conclusion

The results of the current study indicate that Palestinian-Arab middle school students with LD benefit from mediated cognitive strategy instruction when culturally relevant texts are used. As evidence, their reading comprehension performance improved when assessed by both standardized and researcher made measures. Students' selfefficacy, which was measured by self-report surveys and focus-group interviews increased for most students when the sources of self-efficacy (vicarious experience, persuasive, mastery experience, and physical and emotional state) were considered by the teachers. These sources of self-efficacy, which were promoted by the 5MCS intervention, were varied in their effect on students. High performing students were able to demonstrate a higher level of self-efficacy in reading compared to their classmates who demonstrated poor reading abilities.

Using high-interest/low-level culturally relevant texts appeared to have positively impacted students' engagement in the intervention in both conditions, traditional and the 5MCS. Students reported more positive experiences using these relevant, readability matched texts than they did for previously used, above their ability, texts. The teachers of both conditions validated the importance of the 5MCS for the students. They emphasized

the importance of structure in the 5MCS, facilitating academic enablers, controlling classroom dynamics, and encouraging students for self-directed activities. The results from implementation of the 5MCS, in addition to its influence on students' performance and behavior, include an apparent impact on teachers' pedagogical practice and believe concerning the importance of applying mediated cognitive strategy instruction combined with continuous encouragement and support for all students.

## CHAPTER V

## DISCUSSION

This current study was designed to answer the following research questions:

- Does instruction in the mediated cognitive strategy (5MCS), when using culturally relevant high-interest/low-level texts, improve the reading comprehension of Palestinian-Arab middle school students with LD, a) when assessed by a standardized measure and b) when assessed by a researcher-made measure?
- Does instruction in the mediated cognitive strategy (5MCS) when using culturally relevant high-interest/low-level texts result in improved student self-efficacy for Palestinian-Arab middle school students with LD?
- 3. How does reading using culturally relevant high-interest/low-level texts impact the reading comprehension of Palestinian-Arab middle school students with LD?
- 4. How do the teachers value the 5MCS practices that differ from traditional culture-based instructional procedures?

Major findings from the research are discussed in this chapter according to their relevance to the four research questions that guided this study. Further, this chapter will conclude with critical implications and recommendations to policy makers, school administrators, and educators and researchers in the educational field. The results of the data analysis described in chapter four indicate that students of both conditions (Extended and Reduced) increased their performance in vocabulary and comprehension from pre to posttests using standardized measures. However, the data revealed significant gains in vocabulary, in favor of the Reduced Condition, and in comprehension, in favor of the Extended Condition from pre to post-testing using a standardized measure. Significant differences were registered at post test between group leaders and second readers on all measures, vocabulary and comprehension using both standardized and researcher-made measures. Further, group leaders and first readers reported greater efficacy in reading compared to second readers, who showed a decline in their self-reported efficacy at post intervention. It was also found that, students with high engagement in the 5MCS activities made greater success compared to students with low engagement.

Teachers of both conditions highlighted the importance of structure in the 5MCS intervention on students' performance in comprehension, including the organization of the activities, dividing students into small groups, assigning social roles, and providing constructive feedback to students on their performance. The two teachers stated that students' social skills, study skills, motivation, and engagement facilitated their performance and achievement in the 5MCS. Further, the teachers stated that students needed more time for practice on the 5MCS, especially the ones who exhibited behavioral issues. Those students as reported by the teachers appeared to have won the teachers' attention over the ones who needed their instructional mediation the most. Consequently, both teachers admittedly marginalized poor readers, which may have decreased their chance of benefitting from the 5MCS intervention to their fullest potential. Students' independence while engaged in the activities was perceived by the

teachers as an essential asset to the 5MCS. Finally the teachers expressed their satisfaction with the 5MCS results and their willingness to adopt the model for their future work with the students. Next, in the following sections a detailed discussion, for each of the four research questions, is provided followed by a discussion of key implications and recommendations to policy makers, professionals in the field and researchers for further investigation.

The Impact of the 5MCS on Students' Comprehension Performance

The first research question investigated the impact of the 5MCS intervention on students' performance in reading comprehension using standardized and researcher made comprehension measures. The results of the study indicate that both conditions improved in their reading comprehension and vocabulary performance, from pre to post intervention, on all measures, including researcher-made weekly progress tests, and standardized vocabulary and comprehension measures. However, mixed results were revealed for the standardized vocabulary and comprehension measures. Extended Condition students outperformed their counterparts from the Reduced Condition in comprehension at posttest, whereas, the results were in favor of the Reduced Condition in vocabulary at the posttest. The results for the comprehension weekly progress measure developed by the researcher indicated that both groups improved from week one to week eight. The Extended Condition, however, outperformed the Reduced Condition at post intervention.

When students' performance on all measures was compared by role in group and by engagement, the results indicate that group leaders, who were ranked the highest in

reading at pre intervention, maintained their status and remained superior to the other two groups. Further, first readers collectively, maintained their position above the second readers on all measures. Students' engagement echoed their reading performance on all measures (highly engaged students were also highly performing in reading, etc.). The following section discusses these findings in further details.

### Comprehension Performance by Condition

Although students of the two conditions improved in their comprehension performance from pre to post-test, students in the Extended Condition, however, outperformed their counterparts in the Reduced Condition on both measures, standardized and researcher-made comprehension tests. Particularly, the comprehension gain on the standardized measure for the Extended Condition was significantly higher than the gain score for the Reduced Condition. Applying cognitive strategies while reading the passages, including predicting, investigating for meaning, generating questions, telling the structure of the passage, and summarizing the main ideas of the content were essential components of the 5MCS.

Students of the Extended Condition were exposed for four weeks of intervention prior to including the Reduced Condition in the intervention for the remaining of the eight-week program. This extended exposure to the intervention might have influenced the outcomes for the comprehension performance of the Extended Condition. Further, the results suggest that it is possible for both conditions to have achieved higher levels of competence in reading comprehension had they received additional practice time and collaborative work among the group members. The teachers of both conditions confirmed

that additional time would have been more beneficial for all students, particularly to those who exhibited behavioral problems and were at lower reading comprehension level.

These positive results, for both conditions, resonate with the ample research conducted in the past two to three decades on the impact of cognitive strategy instruction on students' performance in reading (e.g., Fisher, Frey & Williams, 2002; Gersten et al., 2001; Manset-Williamson & Nelson, 2005; Mastropieri & Scruggs, 1997; Mastropieri et al., 2001; Palincsar & Brown, 1984; Williams, Nubla-Kung, Pollini, Stafford, Garcia, & Snyder, 2007). The results of the current study, particularly, validate earlier findings by other researchers who investigated the impact of employing multiple strategies with middle and high school students with LD (e.g., Gajria et al., 2007; Gersten et al., 2001; Guthrie et al., 2004; Liang & Dole 2006; Maheady, Mallete & Harper, 2006; Marzano, Pickering & Pollock; National Reading Panel 2000; Rosenshine & Meister, 1994; Sencibaugh, 2007; Swanson, 1999; Trabasso & Bouchard, 2002). Students who were involved in the 5MCS intervention were taught by the teachers using five cognitive strategies that have been validated as beneficial for students with LD at the upper elementary and high school grades (e.g., Gajria et al., 2007; Gersten et al., 2001; Guthrie et al., 2004; Sencibaugh, 2007; Williams, 2006).

However, because this study was the first one, at least based on existing international recorded databases, to investigate the impact of mediated cognitive strategies on reading comprehension and self-efficacy of struggling middle school readers at the Arab regional level, it adds a valuable source for future researchers in the field of education and for researchers at the Arab states level. Previous studies were mainly

conducted for English language learners who migrate from their origin countries to English dominant language countries (e.g., Freeman & Freeman, 2002, 2004; Freeman, Freeman & Mercuri, 2005).

Further, this study highlights the importance of using culturally relevant materials to students that are connected to their social and cultural backgrounds. It provides direct data on these students performing in their own language. As mentioned earlier, students draw on their background knowledge when they read. Therefore, texts that connect to students' past experiences or are of high interest to them are more easily read (Freeman & Freeman, 2004).

These strategies (5MCS) were employed, first by the teachers, who modeled them for the students. The strategies were taught individually then they were all gradually combined with one another. Second, the teacher guided students on the application of each strategy using high-interest, low-level passages that were selected exclusively for the 5MCS intervention. At this stage the teacher worked with the students on the various segments of the passages and guided them in how to proceed from one segment to another. Third, the teachers gradually transferred the application of the 5MCS to the students, who were divided into small groups of three students each. Fourth, students were then able to apply the strategies independently as needed with the mediation of the teacher or their peers in the groups.

This gradual transition of responsibility from the teacher to the students has been adopted from a model proposed by Pearson and Gallagher (1983) 'gradual release of responsibility'. In a gradual release of responsibility model, the teacher gradually

transitions from assuming "all the responsibility for performing a task... to a situation in which the students assume all of the responsibility" (Duke & Pearson, 2002, p. 211). Fisher and Frey (2008) explain that the gradual release of responsibility model suggests that the cognitive load of any given task should gradually shift from teacher modeling, to joint responsibility where the teacher and the students work together on a given task, to independent application by the students. The gradual release of responsibility may occur over any period of time, depending on the teacher's evaluation and the complexity of the task (Fisher & Frey, 2008). Graves and Fitzgerald (2003), in agreement with Fisher and Frey (2008), see the gradual release of responsibility model as a progression where the teacher assumes less responsibilities as the learners demonstrate more competence and independence.

The gradual release of responsibility, as described by the teachers in the 5MCS intervention, was helpful to all students. Especially, it was beneficial for students in the Extended Condition, who were exposed to the 5MCS for a longer period of time. At the beginning of the intervention, their teacher was observed taking part of the class to explain and model how to employ each of the strategies either before reading, while reading, or after reading any segment from the assigned passages. The teacher, for example, used multiple examples about the weather conditions to demonstrate how the weather can be predicted based on some known facts and evidence in the atmosphere. The teacher, then, used some segments from the passage 'Parenting Amongst Birds' as a think-a-loud strategy while activating students' thinking and prior knowledge about the passage that they had.

Using her modeling techniques, the teacher in the Extended Condition allowed students to learn about the types of questions that they might pose while reading the passages. Further, they were taught to think about the content by connecting their previous experiences with the content at hand. Next the teacher asked her students to think about the next segment and discuss in their group what they think would be presented in the next paragraph that they will read based on their reading of the previous paragraph. By doing this activity the teacher was sharing the responsibility with the students and directing them with questions.

This type of teacher control over the activities and a shared responsibility with the students in the form of a whole groups think-a-loud activity continued during the first intensive week of intervention. Later, in the following weeks, the teacher, after receiving guidance from the researcher, was observed gradually and increasingly allowing for more time to the students to work independently. The teacher was observed guiding her students in the second phase of the intervention through individual support and feedback based on their needs and progress in the 5MCS. Students, after a while, understood their roles and what was expected from them, the teacher kept providing them with feedback and support they needed for applying the 5MCS activities. Jamila stated at the interview how this transition was distinct from her previously all-teacher controlled process:

Prior to applying the 5MCS in my classroom, I used to provide my students with some form of independency, but not at this level introduced by the 5MCS. Now, they can run the class independently, as you have noticed /referring to the researcher/. From the moment I enter to the classroom, the children, without being

prompted by the teacher, knowing what is expected from them, they immediately start rolling the dice, which tells them what strategy will be applied next. They are, now, able to work independently and discuss details about the text in hand and pose questions necessary for the activities.

Indeed, most students have reached to a level that they know what is expected from them, and seemed capable of running the activities with the mediation of their group leaders and guidance from the teacher. Although, according to the teachers, students should have been exposed to the 5MCS for a longer period of time, the results indicated, however, that students positively benefitted from the allocated practice time and managed to improve their comprehension and vocabulary scores at all measures.

Despite the fact that the overall outcomes indicate substantial progress for both conditions, it was not the case for everyone in each of the conditions. Due to the large differences in reading comprehension among individual students in each of the two conditions, which was evident prior to conducting the intervention, it would be of important value to follow up on these subgroups and revisit their improvement by both their designated roles and their pre-intervention comprehension levels, as well as the intersection of the two factors. Further, because one of the main goals for the 5MCS was to examine the impact of the 5MCS on students' self-efficacy in reading comprehension, students' engagement, which is strongly correlated with learning (Guthrie et al., 2004), was considered for analysis. Analyzing the data by these two components tells a different story. Group leaders and second readers in both conditions collectively have increased

their performance substantially which distinctly part them from second readers who were also identified by their teachers as poor decoders.

## Students' Comprehension Performance by Role in Group and by Engagement

The following section discusses students' performance by role in group and by engagement in comprehension using standardized measure. Particularly, students' performance by role in group and by engagement were two important variables that shown to be of interest to the 5MCS intervention due to their reciprocal relationship to students' performance, and thus outcomes in the intervention. Students' leaders, for example, were chosen for their role a) because they scored the highest in comprehension baseline and pretest measures, b) due to the uniqueness of the 5MCS intervention, which relies heavily on sociocultural theory (Vygotsky, 1978), group leaders were encouraged to take an active role in leading their group members while being guided and monitored by the teachers (Wigfield & Lutz, 2005), and c) group leaders poses higher decoding abilities which facilitated the role of modeling in oral reading which took place at the beginning of each assigned segment of reading (Fuchs et al., 2001; McMaster et al., 2005). Additionally, *engagement* was selected due to the strong relationship between engagement and reading (Guthrie et al., 2004).

The results obtained for students by role in group and by engagement show substantial gain for group leaders from pre to posttest on comprehension using the standardized measure (F [1,15] = 28.3, p < .001, ES = .99). Nearly all group leaders were observed as indicated by the teachers leading their groups following the sequence of the 5MCS, attempting to apply the strategies. Further, group leaders were observed initiating

the first steps in most activities that required their group members' cooperation. They, first modeled the reading of each given segment, then they monitored the reading of their partners in the groups and provided them with corrections on their reading. Next, group leaders led the discussion of the activities by either reading the cueing cards, or facilitating the activity while the first and second readers worked on the strategies. Group leaders worked closely with the partners by discussing with them their answers for the activities and sharing their answers too.

Being a group leader appeared to have influenced leaders' level of engagement and invested effort in the 5MCS activities in several ways. First, group leaders were among the first ones to master, or at least reach to a satisfactory level of applying the strategies, which obviously gave them the lead over their peers in the groups. Second, group leaders achieved high scores in the first few weeks of the 5MCS weekly progress tests. As the researcher observed and they themselves indicated in the interviews, their success motivated them to continue investing in the strategies. Finally, the responsibilities that the group leaders held as part of their role in their groups, according to the teachers, with the feedback they received from the teachers on their roles, seemed to have increased their invested effort in the strategies in both directions, quantitatively and qualitatively. Similar trend was also recorded observed for students who were ranked as First Readers in the 5MCS intervention. However, these students in the overall achieved less growth in reading comprehension using standardized measures.

Quantitative effort in academic tasks has been referred to as behavioral engagement, whereas, qualitative investment has been labeled as cognitive engagement
(Boekarts, Pintrich, & Zeidner, 2000; Fredricks, Blumenfeld & Paris, 2004; Linnenbrink & Pintrich, 2003). Although behavioral engagement, which may include both academic (e.g., effort, attentiveness, initiative-taking) and social behaviors (e.g., disruptiveness, working collaboratively with peers) (Jimerson, Campos & Grief, 2003; Johnson, Crosnoe & Elder, 2001), is considered an essential component for learning, other researchers (e.g., Linnenbrink & Pintrich, 2003), however, argue that it does not qualify alone for cognitive engagement.

Cognitive engagement, in contrast with behavioral engagement, requires a deeper understanding and involvement in tasks beyond the observed behavior (Linnenbrink & Pintrich, 2003). Linnenbrink and Pintrich (2003) state that cognitive engagement relates to students' thought processes, usually in relation to specific academic content. In cognitive engagement, students demonstrate deeper learning behaviors including thinking aloud about the content, generating questions, looking for clues in the text, and summarizing the main ideas (Linnenbrink & Pintrich, 2003). Both cognitive engagement and behavioral engagement involve effort and may be seen as overlapping (Fredricks et al., 2004). Their distinction lies in defining effort as simply doing the work (behavioral), compared to effort that results from motivation to truly master the learned content (cognitive) (Fredricks et al., 2004).

Group leaders in the 5MCS were perceived by their group members, according to the teachers, as the managers of their groups, and also demonstrated a higher level of strategy application and persistent effort throughout the weeks. Consequently, their behavioral and cognitive engagement in the 5MCS increased substantially from pre to

post intervention (Boekarts, Pintrich, & Zeidner, 2000; Linnenbrink & Pintrich, 2003). Most students who were first readers showed a similar pattern, but with less intensity. Some of the second readers (e.g., Hani and Hind) were considered poor readers and their abilities would be expected to be closer to the second readers', but due to grouping difficulties resulting from either lack of social acceptance in their original placement (Hani), or cultural norms, where females tend to work with females (Hind), their scores in all measures were grouped within first readers systematically. In contrast to the first two groups (leaders and first readers), second readers showed the least progress in comprehension using standardized measures. Additionally, their level of engagement in the 5MCS activities was minimal. Second readers were observed investing the least effort behaviorally and cognitively in all 5MCS applications. The researcher observations recorded many incidents where most of the first readers invested the least effort in attending to the tasks (e.g., Fulla, Yasmin, Taleb, and Hasan), engaged in disruptive behaviors in most of the sessions (e.g., Samer, Yasmin, Fulla, and Taleb), and resisted cooperation with their group members (Yasmin, Fulla, and Taleb).

Further, most of first readers showed the least interest in cognitively engaging in the tasks when the assignment was required of them. Particularly, when they were asked to think of generating thin or thick questions after reading an assigned segment, they were observed either watching their group members and waiting for them to generate the questions, or only participated in listening to what their peers would answer. They showed very limited effort in either behavioral or cognitive investment in most activities. Consequently, their outcome was reflected accordingly.

#### Vocabulary Gain by Condition

Although the 5MCS intervention focuses on cognitive strategies for the purpose of improving students' comprehension performance, vocabulary, however, was embedded as an integral part of the overall 5MCS intervention. Further, the standardized measure which was used for pre/posttests was originally designed in a way that had a separate section for vocabulary and a separate section for comprehension in which each has its own standardized measures and norms. Therefore, each test was conducted and analyzed as a separate unit in the data analysis.

The two conditions increased their scores at post test in vocabulary on the standardized measure. However, students in the Reduced Condition significantly outperformed their peers in the Extended Condition. Although, these results were not anticipated at pre intervention, they were, however, not surprising giving the nature of the intervention and the type of instruction which was provided in the Reduced Condition. The teacher in the Reduced Condition, while teaching in the first phase of the intervention, was observed by the researcher emphasizing heavily on vocabulary learning. Further, the teacher used her direct teaching techniques to explore nearly every possible new word in the assigned passages in the first phase of the intervention. She was observed writing the meaning of the new words on the blackboard, and asking her students to write and discuss the meaning of all possible new vocabulary words in their notebooks, after discussing the vocabulary in a whole classroom instruction. This, evidently, was part of the teacher's instructional method that she applied during her traditional literacy instruction. Consequently, this process possibly led to the higher

results that students of the Reduced Condition achieved over the Extended Condition in the vocabulary test. Whereas, the teacher of the Extended Condition, who might have used a similar approach to the one used by the teacher of the Reduced Condition, did not have the chance to engage in her usual teaching method due to her immediate participation in the 5MCS which began with the practice on the strategies.

This impact of the Reduced Condition's teacher has been widely discussed by researchers as a 'teacher effect' (e.g., Dunn & Mulvenon, 2009; RAND, 2007). The RAND Education (RAND, 2007) in its review of the value-added modeling (VAM) project, which attempts to determine the incremental effects of inputs into education, argues that "teacher effects on student learning are large, accounting for a significant portion of the variability in growth, and that they persist for at least three to four years into the future." (p. 2). RAND researchers concluded that teachers do have definite effects on student achievement and that these teacher effects persist across years (RAND, 2004).

Wafa, the teacher of the Reduced Condition, was well aware of the potential impact and implication of the research on students, due to the informal conversations that were held with the researcher prior to implementing the intervention. Although the teacher was not informed of the process and how each of the strategies was applied with the students of the Extended Condition, she was, however, observed by the researcher during the first phase of the intervention improving her instructional methods. In one of the observational records, the researcher in the third week of the intervention noted the following:

Wafa had made several changes in the past week. The first change was moving her teaching approach from a whole class frontal teaching to small groups approach. This approach was not observed in the first two weeks of the intervention. In the first two weeks, and in the baseline week were informal observations were conducted by the researcher, the teacher had all her students sit in a semi circle where she had her desk placed in the middle facing the students in the front raw. Arranging students' work in two large groups of 4-5 in group was done periodically when she had intended to activate students in specific activities. Later, especially in the past week, she kept her students placed in two groups the entire time.

The second noticeable change was the use of strategies. Wafa, who used to work on the passage as a one piece, now is segmenting the passages in smaller sections, similar to the way was practiced in the Extended Condition, but with larger sections. The teacher asked her students to predict the content that they expect to learn about from the title, visuals that were part of the passage. She eventually activated her students' prior knowledge and helped them being focused on the task. A third change was the use of questioning strategies. Wafa asked her students to answer questioned that she posed, but also to raise questions about the content they read. One common behavior that was observed in the overall process, that the teacher did not follow the exact procedures used by the 5MCS with Extended Condition. Especially, she never taught her students how to use the strategies, nor she provided them with explicit feedback on their work. Instead,

she prompted them to compete as two groups in answering the questions that she had on the passage. The overall approach, however, was substantially different than what was observed in the first two weeks suggesting a teaching approach change inspired by a research effect.

Further, it was hypothesized prior to engaging all students and their teachers in the intervention that both teachers do not poses any previous knowledge about the 5MCS components. This appeared not to be the case, at least for part of the strategies. The teacher in the Reduced Condition, for example, demonstrated some well structured knowledge about at least three of the strategies. Namely, she heavily emphasized the use of (a) predicting the content prior to read the passage, (b) engage students in looking for difficult words using a variety of activities, and (c) asking students to summarize the content using their own words. The teacher also, divided the students in two groups of four to five students in each group and handed them activity cards for independent work. These behaviors were not fully presented at the pre intervention observation phase. Although, because of differences in the way these strategies were implemented by the teacher, they were not applied the same way at the same procedures of the 5MCS.

Although a vocabulary component is embedded within the five strategies (investigating for meaning), it was, however, not the primary goal for the intervention. The 5MCS aimed at providing students with a set of cognitive strategies, accompanied with a mediated collaborative framework, which would help them increase their reading comprehension performance. This aim was definitely achieved for both conditions, but most specifically it was achieved for the Extended Condition.

### Self-efficacy in Reading Comprehension

Students' self-efficacy in reading comprehension was the primary goal of the second research question. Mixed results were reported in chapter four for students' self-efficacy in reading comprehension. Some students reported an increase in their 5MCS self-efficacy and general comprehension efficacy from pre to post intervention, whereas other students' self-efficacy decreased from pre to post intervention. Looking closer at the results of students by Role in Group, a distinction can be made between the results of group leaders and first readers, on the one hand, and the results of second readers compared to leaders on the other hand. Group leaders reported a substantially higher self-efficacy (90.0 and 96.7, respectively) compared to their lower reported score (70.0 and 88.3, respectively) at pre intervention. A similar pattern was observed for the first readers who reported an increase in their 5MCS self-efficacy and general comprehension efficacy form a mean score of (63.6 and 72.0, respectively) at pre intervention, to a mean score of (72.0 and 85.0, respectively) at post intervention.

Second readers, on the other hand, reported a decline in their 5MCS associated self-efficacy and general comprehension efficacy (54.3 and 60.0 respectively) at post intervention, compared to their reported scores (74.0 and 71.7 respectively) prior to the intervention. The largest decline for the second readers at post intervention can be observed on the 5MCS self-efficacy items. These results suggest that second readers, who performed the lowest on comprehension tests throughout the 5MCS intervention were

unrealistically overestimating their abilities in reading at the beginning of the intervention.

Lack of calibration between ones' efficacy and his or her actual performance has been the focus of many researchers who investigated this phenomenon among children and youth with learning disabilities (e.g., Antoniou & Souvignier, 2007; Graham, 1993; Klassen, 2002, 2006a, 2007, 2008; Klassen & Lynch, 2007; Nelson & Manset-Williamson, 2006; Pajares, 1996, 1997; Pintrich, 1994; Pintrich, Anderman, & Klobucar, 1994). The following section provides a discussion of these contrasting results of either underestimated or over estimated self-efficacy in reading comprehension.

### Increased Self-efficacy

The increased levels of group leaders' and first readers' reading comprehension self-efficacy can be explained by Bandura's (1986, 1997) four sources of efficacy. Bandura (1986) referred to this phenomenon of gradual increase in self-efficacy as an increase of students' mastery experience. Bandura (1997) argues that one's mastery experiences are "the most influential source of efficacy because they provide the most authentic evidence of whether one can master whatever it takes to succeed." (Bandura, 1997, p. 20). That is, an increase in students' current achievement in school would directly affect their self-worth or competence in future tasks that are related to the achievement.

Other researchers (e.g., Boekarts, Pintrich, & Zeidner, 2000; Taboada, Guthrie & McRae, 2008; Schunk & Zimmerman, 2007), in agreement with Bandura, assert that a high self-efficacy is built from successful encounters with learning. Schunk and

Zimmerman (2007) explain that self-efficacy is related to outcome expectations. Students who are efficacious expect that they will perform better in a specific task, i.e., receive high grades, if they invest some effort. However, self-efficacy and outcome expectations are not automatically connected. Students may expect positive results based on their previous experiences, e.g., success in a specific task (high grades or positive feedback from a teacher). This, may explain the increase in students' self-efficacy particularly, group leaders' and most first readers'.

Results of both comprehension performance using standardized and researchermade measures indicate that group leaders and first readers, collectively, increased their scores in vocabulary and comprehension from pre to post intervention. All students in the 5MCS were ranked based on their reading abilities and placed in small groups. Further, they were taught specific cognitive comprehension strategies that allowed them to improve their comprehension performance throughout the intervention. Group leaders and first readers' experience of mastery at the 5MCS intervention seemed to have positively contributed to the increase in their self-efficacy evaluation in reading comprehension. In addition to mastery experiences, other sources of self-efficacy may have also contributed to their increased efficacy in reading comprehension. These sources include, persuasive experiences from significant others, vicarious experiences, and experience of emotional arousal within the context of a given task (Bandura, 1986).

Verbal persuasive experience, in particular, was designed in a way that allowed for a teacher's constructive feedback for each of the students on an individual basis. Verbal persuasion was designed for the purpose of convincing students that success is

achieved through their hard work and not due to other external sources, such as, luck or by chance (McCabe, 2006; Pajares,1997; Pintrich & Schunk, 2002). This is referred to as attribution, "a perceived cause of an outcome" (Pintrich & Schunk, 2002, p. 402). Researchers explain that "some students struggle unnecessarily because they incorrectly attribute failure to ability rather than to lack of effort or undirected effort." (Bruning, Schraw, Norby & Ronning, 2004, p. 125).

The teachers in both conditions were instructed by the researcher to provide a constructive feedback for all students, each individually, and to discuss with them their progress in the 5MCS. These individual conversations with the students were accompanied with a point system chart in which students were provided with points and simple gifts on their progress. The teachers explained to the students how they were progressing in the 5MCS applications and weekly progress tests. Students were aware of this evaluation and the impact that these feedback conversations have on their progress. Some students explicitly mentioned that their parents were informed by the teacher on their progress and that boosted their positive feelings and might impacted their invested effort in the 5MCS intervention.

Vicarious experience was accomplished through the different roles that were applied by the group members. Group leaders, in particular, led the discussion in each of the sessions and mediated the reading and activities of their group members. The teacher initiated the instruction of each of the strategies by modeling each separately, and then guided students through a gradual process in which the teacher transferred the responsibility to the students. These opportunities provided modeling and scaffolding for

many students in the intervention. This feeling of responsibility and ownership of the activity, in particular, might have positively influenced group leaders and to some degree the first readers' level of engagement in the 5MCS activities. High level of engagement and invested effort, as described by researchers (e.g., Guthrie & Davis, 2003; Klassen & Lynch, 2007; Linnenbrink & Pintrich, 2003; Zimmerman, 1995, 2000), are strongly correlated with increased self-efficacy.

Students who demonstrated higher self-efficacy tended to invest more in academic tasks (Linnenbrink & Pintrich, 2003; Willson & Michaels, 2006). Such engagement among high performing students (e.g., group leaders in the 5MCS) indicates higher levels of emotional state among students. Emotional state is described as students' experience of emotional arousal towards a given task (Bandura, 1997). Pajares (2002, 2006) contends that people generally tend to engage in tasks where their efficacy is high, and avoid tasks that expose them to a lower efficacy. Pajares and Schunk (2001) pointed out that:

Self-efficacy beliefs influence the choices people make and the courses of action they pursue. Individuals tend to engage in tasks about which they feel competent and confident and avoid those in which they do not. Efficacy beliefs also help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will be in the face of adverse situations. (p. 241)

Highly engaged students in the 5MCS tended to be group leaders and first readers. Group leaders, in particular, demonstrated higher efficacy in their self-reported efficacy

at post intervention survey. Consequently, they were among those students who showed the highest scores in comprehension performance. This can be interpreted as part of their emotional state (Bandura, 1986, 1997) they felt during the intervention. In fact, as pointed out by the teachers, their distinguished role as leaders positively impacted their engagement, invested effort, independence, comprehension performance, and thus their efficacy. Further, as part of their role in the group, group leaders felt superior to other group members (first and second readers), whereas, first readers felt superior to second readers. This situation possibly impacted second readers' inferiority feeling in which they acted as that they had a little control over their group activities and that their group leaders are more responsible for managing the flow of the activities.

This dual increase in comprehension performance and efficacy for most group leaders and first readers was not the case for the second readers who were considered the least competent in reading comprehension. In fact, second reader, showed a very slight improvement in the 5MCS comprehension, and their reported efficacy declined from pre to post intervention. The following section discusses the case of second readers' efficacy decline.

### Decreased Self-efficacy

Researchers argue that students with LD tend to overestimate their abilities to perform academic tasks (Graham, 1993, Klassen, 2002, 2006; Nelson & Manset-Williamson, 2006; Pintrich, 1994). This overestimate of one's abilities is explained by Bandura (1989) as a gross miscalculation between self's belief of performing a task and actual ability which can create a problem. Although, a slight overestimate of one's ability

to perform a task, according to Bandura (1986, 1997), is a desirable behavior, an overly optimistic efficacy belief, according to Klassen (2006), however, "might reflect poor preparation, ineffective self-advocacy, or lack of awareness of one's strengths and weaknesses" (Klassen, 2006, p. 175).

In this study, students who were ranked as second readers reported a decline in their efficacy in reading at post intervention. Nelson and Manset-Williamson (2006) reported a similar pattern to those reported in the current study, in which middle school students with lower achievement reported unrealistically higher self-efficacy. The researchers examined the impact of two reading interventions on the motivational and affective characteristics of middle school students identified with reading disabilities. One group received explicit guided reading, whereas the second group received guided reading only. The first group, who received explicit guided reading strategy, significantly outperformed the second group who received less explicit guided reading strategy. When students of both groups were evaluated for their specific self-efficacy in reading, however, the group who achieved the least in the intervention reported a higher increase in their self-efficacy. Additionally, Nelson and Manset-Williamson (2006) reported that both groups of participants had a high score on the pre intervention reading self-efficacy measure indicating that they are "pretty sure" of their ability to answer comprehension questions based on the given texts.

In a similar vein, a study by Klassen (2006) indicated that early adolescents with LD, when asked to rate their reading self-efficacy, appeared optimistically efficacious. Although, their reported self-efficacy evaluation was lower than their non LD peers,

however, they overestimated their ability to perform specific tasks in spelling and writing by 52% compared to 19% for their peers.

The aforementioned studies suggest that students with LD perceived themselves as capable despite their deficiency in the given domains. Kruger and Dunning (1999) explained this phenomenon as a "dual burden" in that these students are unskilled, yet they are unaware that they lack the metacognitive ability to detect their own incompetence which inflates their self-assessments. In the current study, most second readers overrated their perceived ability in reading comprehension at pre intervention self-efficacy survey.

The same tendency was observed in the first focus-group interview. Students at the interview were asked how confident they feel about their abilities to read a text at their present grade level (seventh grade). All students, including the second readers, asserted that they can read a seventh grade-level text and answer most of its comprehension questions. Despite their high optimism, second readers and some first readers achieved very little improvement in the 5MCS that did not match their declared high efficacy at the beginning of the intervention. Consequently, their self-efficacy has declined substantially at the end of the intervention due to the continuous feedback and modest scores that they achieved throughout the intervention.

Researchers attributed a decrease in self-efficacy to students' previous experiences with failure (e.g., Margolis and McCabe, 2006; McKenna & Stahl, 2003; Schunk & Zimmerman, 2007). Schunk and Zimmerman (2007), for example, contend that students may doubt their ability to perform better if they previously received

negative outcomes including low scores on tests or undesirable teacher's feedback (Schunk & Zimmerman, 2007). McKenna and Stahl (2003) stated children's attitudes toward reading "are shaped by each and every reading experience" (p. 204). These decreases in self-efficacy, according to Margolis and McCabe (2006) can lead to negative consequences, such as, "self-fulfilling prophecies of failure and learning helplessness that can devastate psychological well-being" (Margolis & McCabe, 2006, p. 220).

# The Importance of Using Culturally Relevant Texts

The third research question aimed to explore the impact of using culturally relevant texts with middle school Palestinian-Arab students with LD. During the entire period of the study the reduced condition did not receive the 5MCS for 4 weeks. Students of both conditions were taught using culturally relevant passages. These passages, as described in chapter three, were purposefully selected by the researcher and approved by the participant teachers, with the intention they meet the students' expected readability level. The readability level for most students was estimated at the fourth grade level based on baseline observations, teachers' confirmation during the initial stage of communicating with the school prior to conducting the intervention, and students' school records in reading comprehension. Further, the 5MCS passages were chosen for having some level of interest to the students based on principles derived from High-Interest, Low-Level reading texts' approach (Spadorcia, 2005). The texts included narrative and informative passages. The informative passages covered topics that are familiar and related to

students' culture, including folkloric stories about famous Arabic characters, and religious related content.

Learning materials that are of interest, relevance, and cultural familiarity to students' needs and readability level are supported by a wealth of research (e.g., Allington, 2001; Guthrie et al., 2004; Palincsar & Brown, 1984; Palincsar & Klenk, 1992; Palincsar & Perry, 1995; Schiefele, 1999; Silvia, 2006; Spadorcia, 2005). Researchers argue that interesting texts provide mutual cognitive and motivational benefits to students (e.g., Guthrie et al., 2004; Guthrie & Wigfield, 2000; Schiefele, 1999; Schiefele & Wild, 2000; Silvia, 2006). Schiefele (1999) reviewed 36 studies related to motivation, interest, and learning, and found that personal interest had a substantial effect on text learning.

High level of interest in texts enhances memory for single sentences and paragraph summarizing for various types of texts, including informative and narrative texts (Sadoski, Goetz & Rodriguez, 2000). When students are interested in the material they read, according to Guthrie et al., (2004), "they process the material more deeply, gain richer conceptual understandings, and engage more fully with the text." (p. 416). Guthrie and Wigfield (2000) explain that instructional processes which include using real-world literature and texts that are of relevance to the learners influence reading motivation. Thus choosing texts that are of high interest, familiarity, and relevance to the students may motivate them to become engaged in reading and, consequently, improve their reading comprehension.

Silvia (2006) summarized previous and current research on the connection between interest and reading and found that there are three mechanisms that enhance

reading, interest might: a) increase attention to text, b) lead individuals to process material at a deeper cognitive level, and c) impact the use of reading strategies. Silvia (2006) stated that students who read, for example, interesting sentences, may need less time to attend to the meaning compared to boring sentences where the reader's energy would consume more time to process the sentence. Thus, the author concluded that it is easier to recall information from interesting texts because of the shorter time that it might take the reader to read and respond to the questions.

Further, Silvia (2006) adds that interest leads readers to process texts more deeply which intern leads to better comprehension and faster content recalling. Whereas, a lack of interest may lead to a superficial verbatim understanding of the text, such as, recalling factual events but not understanding inferential facts. Furthermore, Silvia (2006) claims that interest might influence learning by impacting how a reader applies strategies to comprehend novel texts and educational choices. Interest affects how readers choose to approach the reading and how much effort they invest in the reading. Middle school students who had an interest in certain topics, as reported by Silvia (2006), spent longer time working on the reading tasks, and showed more persistence in reading the content.

In addition to choosing interesting themes, researchers emphasize the importance of selecting materials that are of cultural relevance and familiarity to students' lived experiences (e.g., Abu-Rabia, 1996; Hadaway & Young, 2005; Feger, 2006; Wigfield & Lutz, 2005). Hadaway and Young (2005) report that students experience greater success when books are selected that incorporate some elements of familiarity and cultural similarity close to students' lived experiences. This may include, characters, settings,

events, and ways of talking that are similar to the ways of talking and interacting of the learners (2005). Feger (2006) stated that "culturally relevant literature and non-fiction, combined with a focus on collaboration and comprehension strategies, results in students' feelings of self-efficacy." (Feger, 2006, p. 19). Abu-Rabia (1996) found that high school Arab minority students achieved higher comprehension scores on texts that are of cultural relevance to their background compared to texts that were less connected to their cultural experiences.

Wigfield and Lutz (2005) contend that texts are better understood when a sociocultural perspective is taken into consideration. The authors argue that although the psychological process of reading, for example, applying cognitive strategies, is important, it is however, only one important aspect of reading. There are other social and cultural dimensions that should be integrated in the instruction of reading. Readers are more connected to the reading activity when their lived experiences, linguistic, social, and cultural backgrounds are being considered (Wigfield & Lutz, 2005).

This view about reading comprehension resonates with a sociocultural approach described by Vygotsky (1978) on the nature of development in different areas, including reading. Vygotsky (1978) posits that learner's cultural background and personal experiences should be integral parts for any learning to occur. A number of sociocultural theorists (e.g., Alverman & Phelps, 1998; Gee, 1996; 2004; Perez, 1998) who expanded Vygotsky's theory argued that reading cannot be entirely separated out from other learner's contexts (practices and lived experiences), including but not limited to, linguistic backgrounds, interaction with teachers and peers, and teaching contexts.

Instead, reading is an integral part of these practices and cannot be understood without these contexts. Perez (1998) contends that reading in a sociocultural context, emphasizes the social worlds and cultural identities of learners and perceives the act of making meaning as always embedded within a social context and cultural context of the reader.

Lasisi, Falodun and Onyehalu (1988) used culturally appropriate reading passages with seventh grader Nigerian students. The researchers reported on improvement in comprehension when culturally relevant passages were implemented compared to unfamiliar passages suggesting that the similar cultural values that those texts brought to the students helped them to better connect to the instructional materials. Similarly, Abu-Rabia (1998) reported that high school minority Druze students in Israel who were exposed to culturally relevant passages in both their first language (Arabic) and second language (Hebrew) achieved better scores on tests when the passages draw upon their cultural values regardless of the language of instruction (Hebrew or Arabic).

Finally, researchers (e.g., Allington, 2001; Guthrie & Davis, 2003; Schifini, 1999; Spadorcia, 2005) argue that struggling readers and students with LD at the middle school level find it difficult to read and comprehend texts that are at their grade level due to their poor decoding and comprehension for their grade levels. For example, if a seventh grade social studies textbook has a seventh grade readability level, a student with poor reading skills will experience great difficulty accessing the general core curriculum (Guthrie & Davis, 2003). Thus, matching the readability of the textbook to a level that students can manage at the instructional level may help them access the curriculum and possibly increase their engagement in the texts.

Indeed, the above body of research provides evidence to the importance of selecting appropriate texts that are culturally relevant, interesting to the students, and appropriately matched to their instructional reading level. Although the passages of the 5MCS intervention were not pre approved by the students, nor were the students asked to choose from a variety of selected passages, the selected passages were culturally relevant, especially the narrative passages, and had appropriate readability levels and were of high interest to the students.

It is worth noting here that high-interest/ low-level texts that are exclusively designed for struggling readers or students with LD at the middle and high school levels, do not exist in the current Arabic literature. Nor are there textbooks available at the curriculum level. Thus, the 5MCS passages were chosen from an existing curriculum, namely the Palestinian curriculum, which is different than students' current curriculum but of a similar readability level to those estimated for the students, and of familiarity and cultural relevance to the students' backgrounds.

Nevertheless, the chosen passages for the 5MCS, according to both teachers, seemed to have benefitted the students and assisted them to become more engaged while learning in both conditions, traditional and the 5MCS intervention. Both teachers expressed their satisfaction with the selected passages due to their familiarity to students, cultural relevance and matching readability level. The teacher of the Reduced Condition, for example, stated that all her students showed an interest to read the various passages that were used as part of the intervention. Further, the teacher explained that one of the reasons for her students favoring the 5MCS passages over previously taught seventh

grade passages is that they were familiar to students and matched with their readability level.

The above point was explicitly addressed by Guthrie and Davis (2003) as one of the main challenges for middle school struggling readers. Guthrie and Davis (2003) stated despite the fact that "middle school texts are more complex than elementary school texts... struggling students are rarely provided a diversity of materials that might enable them to learn content through texts matched to their reading ability." (p. 67). Wafa, the teacher of the Reduced Condition, shared examples of students who were shy to participate in reading when they had studied at the seventh grade literacy level. Views similar to those expressed by the teacher of Reduced Condition were shared by the teacher of the Extended Condition.

The teachers' perspective on the 5MCS passages were also shared, mostly, indirectly by the students who participated in the focus group interviews. Most students, at the second focus group interview, stated that they liked the 5MCS passages. They brought details about passages that they had learned during the 5MCS intervention. Nearly all students remembered either one or two passages and selected them as they shared experiences about passages that they felt confident reading them. This attitude was not present at the beginning of the intervention. In fact, most students who attended the first focus group interview showed some level of resistance to their formal Arabic literacy texts. Instead, nearly all students favored subjects other than reading in their first language, including English and Hebrew classes. There could be several explanations for students' alternative preferences.

One explanation for students' favoring subjects other than their first language literacy could be their difficulty in formal Arabic literacy which is highly demanding at the middle school level. This may have been an indicator of the real challenge they encountered in their official practiced curriculum. In their official curriculum, in order for these students to succeed they had to demonstrate some level of comprehension mastery at the seventh grade level, which is at a level beyond their zone of proximal development (Vygotsky, 1978).

Further, the Arabic language is unique in that it is characterized by diglossia (Abu-Rabia, 2000; Ayari, 1996; Hansen, 2008; Maamouri, 1998; Saiegh-Haddad, 2003, 2004, 2005). In a diglossic context, children grow up speaking a spoken Arabic vernacular, which is an exclusively spoken language at home for daily social functions, but later, upon entering formal schooling, these children learn to use another linguistically related form, modern standard Arabic (MSA) represented in the formal curricula and all written scripts (Maamouri, 1998; Saiegh-Haddad, 2005). Further, MSA is unique in that its written formal scripts are vowelized at the early school years, mostly at the elementary stage, while it becomes less vowelized at the middle and high school levels, thus, increasing the difficulty for the struggling less competent readers (Abu-Rabia, 2003; Ayari, 1996; Hensen, 2008). Consequently, Palestinian-Arab children with LD at the middle and high school stages are challenged by their own nonvowelized diglossic language (Abu-Rabia, 2000).

Other researchers argue that students tend to show negative attitudes toward reading due to repeated failures in previous school years (e.g., Ganske, Monroe, &

Strickland, 2003; Lipson & Wixson, 2003; Rasinski & Padak, 2000) or due to a lack of interest in the reading materials that are taught at school (Lenters, 2006). Chapman and Tunmer (2003), on the other hand, argue that students' negative attitudes toward reading are not necessarily directed to reading "rather, it is the attitudes about themselves as learners, the perception that they lack sufficient competence as learners, and the feelings of learned helplessness that are associated with ongoing failure" (p. 17).

Finally, self-efficacy researchers (e.g., Bandura, 1986, 1989, 1997; Klassen, 2002, 2006; Nelson & Manset-Williamson, 2006) may explain students' choices, for example, languages other that their first language, despite their difficulty for them, as a lack of students' calibration between self's belief of performing a task and their actual ability. According to self-efficacy theory, students with LD tend to overestimate their ability when asked to value their abilities in performing certain tasks (Bandura, 1986, 1989, 1997; Graham, 1993, Klassen, 2002, 2006; Nelson & Manset-Williamson, 2006; Pintrich, 1994). Researchers argue that children and youth with LD struggle with self-knowledge and task awareness, which may indicate that their ability to judge their efficacy may be affected (e.g., Klassen, 2008; Meltzer, Roditi, Houser & Perlman, 1998). That is, despite the fact that these students are unskilled, they are unaware that they lack the metacognitive ability to detect their own incompetence in a given context (Kruger and Dunning, 1999). This may explain why students who participated in the first focus group interview in the 5MCS favored subjects they deemed as easier to them, despite the fact that these texts at the middle school level tend to be of high difficulty, especially to students who originally struggle with decoding and comprehension in their first language. In conclusion, selecting reading materials that are of cultural relevance and at an instructional readability level that matches students' reading abilities may positively impact their interest and deepen their comprehension. Further, students' motivation in reading comprehension, and consequently, invested effort, and persistence in tasks seemed to increase when the texts are of interest to them. Students in the 5MCS intervention demonstrated an attitude and interest change toward the texts from the beginning to post intervention. This may indicate that the passages used for the 5MCS intervention were much more successful as reading materials compared to previously unmodified seventh grade texts.

## Teachers' Value of the 5MCS

The fourth research question was designed to explore teachers' opinions on the 5MCS intervention. Both teachers, who were interviewed individually at the completion of the 5MCS intervention, voiced their opinions about the impact which the 5MCS had on their students. The overall position of the teachers on the 5MCS intervention was positive and supportive of continuation with the model, with some modifications. However, there were also some critical points that the teachers made that have valuable implications for future applications of the 5MCS. The teachers highlighted a number of key points that they perceived as important components in the 5MCS intervention. Among these key points, the teachers emphasized the role of structure which included the organization and order of activities, actively engaging students within small groups that require full collaboration among group members, stimulating social roles and interaction

within the group members, and the importance of teacher's constructive feedback on students' performances in the 5MCS.

Both teachers pointed out that most students' positive attitudes and behaviors, including engagement, motivation, social skills, and academic skills during the application of the 5MCS activities enabled them to gain better skills in the 5MCS. Further, the teachers stated that classroom dynamics including the considerable time that was needed for students to become more familiar with the 5MCS, and students' behavior, especially resistant behaviors and a lack of cooperation among group members interacted as two main components and, according to the teachers, affected the way the 5MCS was implemented. Consequently, both teachers tended to marginalize some of their students, especially poor readers in order to claim control over their classrooms.

Due to its unique features, the 5MCS intervention, according to the teachers allowed for students claiming responsibility through a reciprocal role taking within each group. These responsibilities enabled students to independently run the activities following the sequence of the strategies and cueing cards which were provided to them by the teachers. Consequently, their self-confidence improved. Both teachers, who transitioned from doubts and disbelief in the value of the 5MCS at its initial implementation, felt that the 5MCS had a positive impact, not only on the children, but also on their own pedagogical practices, especially how they perceive reading comprehension. A detailed discussion of key findings that were either supportive or challenging to the application of the 5MCS follows. First, major promises of the 5MCS

will be presented, followed by a discussion of the challenges to the 5MCS model and its implementation.

### Promises of the 5MCS

The teachers, as described in the introduction of this section, identified a number of key points that were of relevance to the model. Both teachers identified structure, which includes organization and order, working in small group, and constructive feedback as one of the most influential factors in the 5MCS intervention. This major claim, was repeated by the teachers in different ways, and was selected as a unique promise of the 5MCS. Apparently, the teachers felt that the 5MCS influenced, not only how the students worked, but also impacted the teachers' instructional practice. The teachers stated that although part of the 5MCS activities were previously implemented in their instruction in various ways the 5MCS strategies brought new meaning to their pedagogical practice. They expressed their satisfaction with the way that the 5MCS activities were arranged and sequenced for the children.

The structure of the 5MCS, according to both teachers, facilitated students' working habits in that most students knew in advanced what to expect when they read the assigned passages. This was especially true for most group leaders and first readers who took significant roles in the activities. These students, according to the teachers, felt responsible to run their own groups, and thus be responsible for their own learning. Consequently, their self-confidence was enhanced, which was reflected in their increased self-efficacy at the post intervention survey.

Interestingly, the teachers expressed their appreciation for the importance of 5MCS structure despite the fact that both of them stated that they had doubts about the potential of the 5MCS to improve students' comprehension at the beginning of the intervention. This was especially true for Jamila, the teacher of the Extended Condition, who clearly expressed her doubts about the premise of the 5MCS, particularly the way it was delivered to students. Jamila thought that conducting the same strategies nearly every day with the students every time they have a new passage would be less effective. Apparently, the 5MCS intervention proved to be effective over time. Evidently, the positive results that their students achieved on both standardized and researcher developed measures were determinant factors in the shift in teachers' attitude towards their pedagogical practice.

Teachers' appreciation of the structure of the 5MCS, which emphasizes collaborative work in small groups, engaging in cognitive strategies, offering and receiving ongoing feedback from peers and the teacher, and multiple opportunities to interact with their peers resonated with finding by researchers of the PALS intervention. Fuchs et al. (2002) explained that PALS's structured one-to-one interaction has several advantages that help students. Among such advantages, Fuchs et al. (2002) pointed to are (a) frequent opportunities for students to respond, (b) immediate partner's feedback, (c) increased academic engagement time, and (d) students' social engagement and support.

In addition to the importance of structure in the 5MCS, the teachers in the present study highlighted the effect of the intervention on students' engagement and motivation in the activities. Obviously, students were directed by the daily flow of the strategies.

While engaged in the strategies, students received constructive feedback from their teachers. Obviously, this helped them to become more engaged and motivated. Consequently, their comprehension performance was improved. This reciprocal interaction between the reading and engagement in the tasks is supported by research on strategic reading and engagement. Guthrie et al. (2004) claimed that engagement in reading constitutes interaction with text that is simultaneously motivated and strategic, and that engaged reading correlates with achievement in reading comprehension. Thus, an instructional framework that merges motivational and cognitive strategy support in reading will increase engaged reading and reading comprehension (Guthrie et al., 2004).

Further, Guthrie and Davis (2003) argue that students' achievement in reading, especially in the middle school, is reciprocal to providing a supportive classroom context for reading learning. Supportive classroom context, according to Guthrie and Davis (2003) can be achieved by providing interesting materials and textbooks for reading, materials that are connected to students' lived experiences, teacher's support and feedback, teacher's monitoring and direct instruction for important reading strategies, and fostering students' collaboration rather than competition. In agreement with Guthrie and colleagues, the work of Palincsar and Brown (1984) in reciprocal teaching was based on the assumption that mediated collaborative work among students can create a positive learning environment.

### Challenges to the 5MCS

Clearly, not all steps that were planned to ensure the success of the 5MCS intervention worked for all students as they were originally planned. Consequently, the

outcomes showed some weaknesses in the model that need further review before future application of the 5MCS. One noted weakness to the current study, according to the teachers, was the minimum influence that it had on poor decoders' comprehension and a decline in their self-efficacy. Poor decoders are the same students who were assigned the role of second readers and some first readers from both conditions.

The reasons influencing those students' low outcomes, in both comprehension and self-efficacy measures may have been several overlapping factors that appeared to collectively impact their results. Such factors may include, but are not necessarily limited to: a) low engagement and minimum effort invested in the 5MCS activities, b) a rejection by group members, and c) teachers' deliberate marginalizing of those particular students. These overlapping factors seemed to reciprocally contribute one to another.

Low engagement. Poor decoders, mainly the second readers, had little engagement in the activities when they were assigned specific tasks to perform, such as, making effort to work on answering the 5MCS questions or working on the given task. These students were observed sitting in their groups with minimum effort invested in the activities. Their behavior was mostly characterized by withdrawal and lack of interest most of the times. Although, both teachers had mentioned in the interview that some of the low decoders (e.g., Yasmin and Hussein) were observed engaging and participating in part of the activities, their overall behavior, however, was disengagement and lack of cooperation. Nevertheless, their reading difficulties, especially their lack of ability to independently read and comprehend could have played a major role in their lack of interest in the demanding reading activities.

Rejection by group members. Poor decoders were less accepted among their assigned group members. Due to their very limited reading abilities, poor decoders were observed easily distracted and avoiding group work which was mainly centered on reading assigned strategies and answering comprehension questions. Although they were provided with modeling by the teachers and often by the group leaders poor decoders were asked to respond and discuss each of the assigned strategies. This situation may have contributed to their lack of engagement and thus, lack of invested effort in the assigned tasks. Consequently, these students demonstrated a lack of cooperation with their group members. Some of them were observed either engaged in arguments with their peers or the teachers for their disruptive behaviors (e.g., Fulla, Taleb, Yasmin, and Samer). Others, often were observed wasting valuable instructional time engaging in either coloring the activity cards and passages (e.g., Yasmin and Hani) while their group members were discussing the assigned tasks, or leaving their groups and wandering in the hallway or in the class (e.g., Fulla and Hussein) at the time when their group members were engaged in the tasks.

*Marginalizing poor decoders*. Both teachers stated that they intentionally marginalized poor decoders for the purpose of controlling other students who usually exhibit behavioral problems or were very competitive and succeeded to draw teachers' attention at most times. In addition to students' low results on the weekly tests, teachers' avoidance of poor decoders, who needed them the most, apparently was one of the major influential factors to play a role in lowering their self- efficacy.

All these factors, collectively, seemed to contribute to the second readers' low results in comprehension performance and self-efficacy. These negative consequences obviously left the second readers with very little incentives. Such conclusions have been explained by a number of researchers (e.g., Bandura, Barbaranelli, Caprara & Pastorelli, 1996; Pajares & Schunk, 2001). Bandora et al., stated "unless people believe that they can produce desired effects by their actions, they have little incentive to act." (p. 1206). Further, the results obtained from the 5MCS intervention for poor decoders echoed previous research on PALS with students of various abilities (McMaster et al., 2007; McMaster, Fuchs, Fuchs & Compton, 2005).

In their investigation, McMaster et al. (2005) reported on a number of students who exhibited very low decoding abilities. The researchers referred to those students as nonresponders who resisted the first PALS intervention. Later, these students were provided with a modified version of PALS for 13 weeks. The results suggest that most of those nonresponsive at the first program remained nonresponsive to the intervention in the modified treatment. An additional one-to-one treatment was offered to the remaining children in the program. The results, however, showed only a 50% improvement. The researchers concluded that the extended time was not as effective as expected, at least for half of the students. Thus, the researchers call for additional investigation that integrates an exclusive intervention for the non-respondent readers. Although the context of poor decoders in PALS and PALS modified are not exactly the same contexts investigated by the 5MCS, these results indicate that an additional individualized treatment must be considered for Palestinian-Arab middle school students with LD.

In summation, the role of structure which included the organization and order of activities, actively engaging students within small groups that require full collaboration among group members, stimulating social roles and interaction within the group members, and the importance of teacher's constructive feedback on students' performances in the 5MCS were highlighted by the two teachers as important components of the intervention. Further, the teachers stated that the positive attitudes and behaviors, including higher engagement, motivation, social skills, and academic skills that most students demonstrated during the application of the 5MCS activities helped them to improve their strategy skills in the 5MCS. Furthermore, the teachers considered that an additional time was needed for most students, especially the ones with behavioral problems and poor readers, to become more familiar with the 5MCS. Apparently, the two teachers marginalized poor readers in order to maintain control over their classrooms.

In addition, the teachers observed that the reciprocal role taking among students in the small groups' activities enabled students to independently run the activities following the sequence of the strategies and cueing cards which were provided to them by the teachers. This, according to the teachers, seemed to enhance students' selfconfidence. Finally, both teachers, expressed satisfaction at the completion of the 5MCS intervention which was a dramatic shift from a disbelief in the 5MCS at the start of the intervention to a pedagogical shift at the end of the 5MCS intervention.

One obvious conclusion that can be drawn from these results is the need for a more individualized approach where the teacher takes an active role in guiding struggling students and monitors their progress more closely. Poor decoders may benefit from more

explicit modeling and hands on experiences in which the teacher assigns small tasks and guides the students step by step through the process prior to fully integrating them in the group work (McMaster et al., 2007). This approach is supported by Vygotsky's ZPD in which an expert adult mediates the instruction to better match each student's social and academic needs. Finally, poor decoders may benefit from a more intensive oral reading approach in order to enhance their fluency which facilitates their comprehension.

## Limitations to the Present Study

There are several limitations to this study. One limitation was the small sample size of only 18 students, which makes it difficult to generalize the results for a larger population. Additionally, this study was conducted in a separate special education school which limits its generalizability in inclusive school settings in the Arab-Israeli context. Nearly all previous research inquiries on the impact of cognitive strategy instruction on the performance of students with LD in comprehension and self-efficacy at the middle and high school levels were implemented in inclusive general education settings and in English language instruction (e.g., Antoniou & Souvignier, 2007; Dion, Fuchs & Fuchs, 2005; Klinger & Vaughn, 1996; Mastropieri et al., 2003; Mastropieri et al., 2001; Palincsar & Brown, 1984). In particular, when students' self-efficacy in reading has been researched, researchers typically designed it as a comparison study between students with LD who struggle in reading and other groups of learners who do not have LD (e.g., e.g., Klassen & Lynch, 2007; Linnenbrink, & Pintrich, 2003; Willson & Michaels, 2006). None of the documented studies examined self-efficacy among only middle or high

school students with LD in an all-inclusive special education school in an Arabic language context.

Furthermore, this study might have been limited by the fact that it only had two classroom teachers, one for an extended implementation of the 5MCS, whereas, the Reduced Condition was provided with culturally relevant texts only at the first phase of the intervention. This may have affected the validity of results' results, especially for vocabulary. The vocabulary outcomes may have been skewed due to a possible teacher effect. The teacher of the Reduced Condition, as previously discussed, was observed making an effort to show advanced instructional methods by attempting to change her teaching approach over the first phase of the 5MCS intervention. As previously discussed, the teacher of the Reduced Condition included practices that were not part of her original practices, at the point prior to when the 5MCS intervention was implemented, such as, having students work in groups on looking for vocabulary words and answering questions related to vocabulary.

Another limitation was the duration of the study. Thirty-two sessions of the 5MCS might have generated positive gains for the participants in the short eight-week implementation for the experimental group on all dependent measures, but not as significantly as they might have been had the instruction been implemented for a longer duration. This point was also discussed by the teachers in relation to classroom dynamics which were influenced by the needed time to prepare students for the new strategies, and teachers' attempts to control students' behavior, which resulted in marginalizing poor readers. Although the 5MCS instruction yielded statistically significant gains on

measures of passage comprehension, additional consistent and systematic instruction may have served to strengthen and increase the differences between the two conditions in posttest scores for participants.

Further, this study may have been limited by the fact that a delay vocabulary and comprehension standardized measure was not performed. In the original study proposal, a delay test was scheduled for the purpose of measuring strategy maintenance. The delayed test, however, was not performed due to unexpected delay in initiating the intervention which resulted in a very limited time remaining between the posttest and the actual remaining time for the end of the school year. This delay test would have yielded a more accurate result on students' strategy maintenance a month upon the completion of the study.

Finally, this study may have been limited due to the lack of basal materials in Arabic language similar to the High/Interest- Low/Level texts available for English native speakers; thus, instructional materials developed or selected exclusively for the study may not be highly matched to the participating students' interests or academic requirements. In a similar vein, due to a lack of exclusively designed assessment tools for this population this study may have been limited by the fact that the standardized measures used to pre/posttest students' vocabulary and comprehension were originally developed for elementary first through sixth grade students in Jordan.

Implications and Recommendations for Research and Practice

The results of the present study indicate that the 5MCS intervention has a potential for implementation on a larger scale with various population targets within the

local Palestinian and regional Arab contexts. Due to the alarming scarcity of educational materials and pedagogical methodologies in the area of reading comprehension that meet the needs of Palestinian-Arab middle school students with LD, the following implications and recommendations are appropriate:

Cognitive strategy application at various settings and grade levels. The 5MCS intervention was adjusted based on current cognitive strategies models (PALS and Reciprocal Teaching) to meet the needs of Palestinian-Arab middle school students with LD. The setting and population of the intervention were purposefully selected due the characteristics of the participants who were identified and placed in a special education setting, which was exclusively established for middle school students with mild disabilities, mainly for learning disabilities and attention deficits disorders. However, further research is needed with a larger population of students with LD in various educational settings and other age group students within the local Palestinian communities, and possibly within other Arab states with similar linguistic, social, and cultural backgrounds. It would be of value to researchers, educators, and policy makers in both the Palestinian-Arab local communities and regional levels in the Arab states to examine the impact of the 5MCS intervention on struggling readers and students with LD beginning at the upper elementary through the school grades. Also, it would be of importance to simultaneously conduct the 5MCS intervention in comparison with non-LD students who are placed in inclusive settings.

Further, applying the 5MCS intervention or a modified version of the 5MCS within other Arab speaking populations, including the Arab states in large, may yield a
larger impact and implications for future development of instructional methods implemented in those countries. In its very recent publication about the state of global education, the Education for All [EFA] *Global Monitoring Report* (EFA, 2009) states that the global progress report on literacy is not encouraging due to a high level of illiteracy among adults who failed to attend formal education or dropped out of schools. The Arab States were among those countries with increasing numbers of illiterate young adults over the age of 15 as population growth continued (EFA, 2009). Given the very discouraging reports about the high percentage of high school drop outs and illiteracy among the Arab countries (EFA, 2009), this type of study is definitely needed to determine how to boost the literacy level among the Arab states. With this notion of a high percentage of illiteracy in mind, it is worth noting that the Arabic professional literature lacks appropriate materials that address special populations such as struggling readers at the middle and high school levels.

Addressing the shortage of texts and assessment tools. The materials that were applied in the 5MCS intervention were purposefully selected to meet the educational needs of struggling Palestinian-Arab readers at the middle school level. These students were identified with learning disabilities, and some of them had possible additional associated disorders, for example, attention deficits disorders. However, due to devastating scarcity in basal textbooks in Arabic literacy, and the complete absence of materials in the form of High/interest- Low/level texts, middle school students with LD will continue to lag behind in reading comprehension, unless a major change takes place at the policy and professional levels.

Policy makers should immediately provide the necessary tools and materials to overcome this shortage. Texts should be planned in a way that considers students' lived experiences, personal interests for early teens, cultural and religious values, and that are an appropriate match to their reading level. This can be achieved via various tracks, including, but not limited to a) establishing a working force that oversees the current curriculum for each of the upper elementary and middle school years and working out a plan in which some revisions can be made to accommodate their pedagogical needs; b) creating additional literacy texts at the readability level of struggling readers that are rich with relevant and interesting content to the readers, at the upper elementary through high school stages; and c) creating assessment tools that are sensitive to students' actual curriculum and sociocultural backgrounds (Ruffin, 2009; Vaughn, Gersten & Chard, 2000).

A longer exposure to the five mediated cognitive strategies. The 5MCS was implemented for only two months with middle school students who were significantly behind in their reading abilities, compared to their matching grade students in the general education system. Due to their low performance in reading comprehension, and other academic core subjects in the general schools, and due to the lack of pedagogical interventions at their previous elementary schools, those students were referred and thus placed in a special education setting. The purpose for their special placement was to provide them with appropriate instruction that matched their unique characteristics and needs. Therefore, they needed a longer time, as suggested by the teachers, to process the

strategies and become proficient in applying them across all subjects that require reading comprehension.

It would be appropriate to extend the duration of the program over a longer period of time, for example, four to six months at the minimum, but maybe to minimize the number of weekly sessions to three sessions in order to allow for other literacy content to be covered during each week and to allow for sufficient time to all students to adjust to the change that such a model brings to them. Further, this exposure to the 5MCS should be accompanied with sufficient training for the teachers who would implement the program. The training should include exposure to the guiding principles of the 5MCS and discussing the theoretical framework behind the approach, namely sociocultural theory.

Students' engagement, self-efficacy, and reading comprehension performance. The 5MCS intervention combined several concepts, namely engagement, self-efficacy, and reading comprehension that have been previously researched and found to be reciprocally correlated with each other, and consequently, impacting the learning outcomes of middle school students with LD (Guthrie, 1996; Guthrie et al., 1998). Engagement is one major dimension of motivation (Guthrie, 1996). Accumulating literature has made an advanced distinction between behavioral and cognitive engagement (e.g., Boekarts, Pintrich, & Zeidner, 2000; Fredricks, Blumenfeld & Paris, 2004; Linnenbrink & Pintrich, 2003). This distinction, however, was not made clear in the 5MCS intervention, in which some of students' behaviors were also looked at as engagement without any specific separation from behaviors that are mainly cognitive engagement. Therefore, it would be interesting to carry out a research that examines the

various degrees of behavioral and cognitive engagement in different levels of reading activities by students with LD of various age groups and placement settings.

Further, the concept self-efficacy is widely discussed as a situational concept, in that its effect is not global to all aspects of students learning (e.g., Bandura, 1986, 1997; Wilson & Michaels, 2006). That is, if a student is feeling less confident reading a certain text, possibly due to its complex vocabulary and rich context, it may not be the case when encountering a less complex text. Thus, low self-efficacy about certain texts is not yet automatically transferred to other texts. This finding indicates that students with LD, when receiving appropriately matched texts to their approximate ability, for example readability and cultural relevance, at their zone of proximal development (Vygotsky, 1978), may show a gradual increase in their self-efficacy.

At the 5MCS intervention level, this finding played a role in both directions. Second readers, who apparently, needed more help with the texts, due to their poor decoding abilities, showed very minimum improvement in reading comprehension compared to group leaders and first readers. Consequently, their self-efficacy declined from pre to post intervention. Thus, these students may benefit from a more tightly designed intervention in which individualized instruction that meet their limited decoding abilities is considered. Group leaders and first readers, on the other hand, were able to benefit the most from the 5MCS intervention which resulted in substantial improvement in reading comprehension. Consequently, their self-efficacy increased by the end of intervention. This may have been an indicator to the appropriate design for these students. Therefore, it would be of value to the field of learning disabilities to research

these two aspects (increase and decrease in self-efficacy) in various contexts and different grade levels. That is examining self-efficacy of middle school students with LD at different points of strengths and weaknesses associated with literacy, including reading fluency, comprehension, and writing. This investigation could be examined prior and after such an intervention in conjunction with other areas of interest, for example engagement in difficult tasks and engagement in more matched tasks.

Finally, concerning students' performances in reading comprehension including vocabulary, the findings of the 5MCS suggest that in order for a good instructional cognitive strategy implementation to succeed a multi-component educational approach must be considered. Should professionals, administrators, and policy makers consider implementing the 5MCS intervention within their schools and districts, it is imperative to consider an educational approach that: a) promotes positive attitudes for models that emphasize training students on applying cognitive strategies in reading, b) enhances the role of reciprocal mediation and collaboration among learners, c) provides students with intensive modeling and guidance through the learning of strategies, d) gradually releases responsibility from a teacher-only controlled instruction to a student control over his or her learning, e) provides authentic and constructive teacher feedback for the learners on their progress, f) provides appropriate instructional materials that match students' readability level and meet their sociocultural needs, and g) creates a positive educational environment that maintains and increases students' behavioral and cognitive engagement, motivation, and self-efficacy in learning.

## Conclusion

This study was designed to add to the accumulating body of research on the impact of cognitive strategy instruction on the reading comprehension performance and self-efficacy of middle school students with LD. The study's findings reveal a potential for use of mediated cognitive strategy instruction for Arabic speaking middle school students with LD. By middle school, many students with LD have already experienced a repeated failure which has reinforced their perceived lack of abilities. Thus, when middle school students with LD receive little incentives, such as minimum or no obvious improvement in their reading achievement despite their sincere attempts, they may conclude that their difficulties are the results of their innate lack of abilities; which may lead them to feel less competent. Consequently, their self-efficacy and motivation for learning decline accordingly.

In the 5MCS model students were taught in a supportive learning environment where their self-efficacy in reading comprehension was a major component in the instruction. They were provided many opportunities for practice and observing their teachers model reading and applying the strategies. The teachers provided a realistic feedback (persuasive experience) to each of the students on their performance in the 5MCS during the intervention on a weekly basis. Students were able to see their results immediately upon completing the weekly researcher-made comprehension tests which apparently resulted in enhancing the mastery experience for most of them. This provided them accurate estimate on their ability to succeed in the following similar tests. The learning took place in collaborative small groups activities with distinctive social roles

for each of the students. This shared experience which was purposefully planned to allow for sharing responsibilities between the teachers and their students strengthened their emotional and physiological states in which they felt confident and more responsible for their own learning.

With the acknowledgement to the overall limitations of this study, particularly its minimum impact on the poor decoders, it is however, a study that should be considered for expansion in both settings special education and general education schools, due to its impact on students who have some level of reading fluency but needed more appropriate strategies for comprehension. Group leaders, for example, could have been treated better, and thus succeeded to remain in their previously general education schools, had they received similar attention to the type of attention they received in the 5MCS intervention.

Indeed, middle school Palestinian-Arab students with LD benefit from a mediated multiple-strategy instruction that sincerely considers their academic, social, and cultural background needs. This study has just provided preliminary evidence to the impact of this mediated cognitive strategy approach on reading comprehension performance and self-efficacy of the participating sample. When middle school students with LD are provided with ample opportunities to practice applying cognitive strategies while reading, collaborating in small groups, and monitoring their own learning, their self-efficacy and academic engagement should increase. Further, ongoing constructive teacher's feedback on a student's individual performance and progress, along with careful planning for student success in comprehension at her or his instructional level are two determining components of students' self-efficacy in reading. Therefore, it is necessary for educators

and researchers, who design programs that target such similar populations, to provide students with tools and strategies needed for reading comprehension success at individually-appropriate levels.

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APPENDICES

#### APPENDIX A

#### A Request for Approval to Conduct a Research Project in Al-Fursan School

To: Mr. K,

Special Education Superintendent, Ministry of Education: xxx

#### Dear Mr. K,

My name is Muhammad Zayyad. I am a doctoral candidate in the Curriculum and Instruction Program in the Lynch School of Education at Boston College, Chestnut Hill, Massachusetts, USA. I work under the supervision of Dr. David Scanlon, a professor in the Department of Teacher Education, Special Education, & Curriculum and Instruction at Boston College and a specialist in the area of learning disabilities and strategy instruction at the middle and high school level.

One of my areas of interest is the reading comprehension development of middle school students who have difficulties with learning. I am requesting your permission to implement an intervention project that evaluates the use of an experimental teaching method in reading instruction. I have developed a strategic learning approach to reading comprehension that integrates components of two previously validated comprehension processes for students with learning difficulties: Peer Assisted Learning Strategies (PALS) and Reciprocal Teaching (RT). Participation in this study may directly improve your students' reading comprehension performance and self-efficacy for reading.

In this project, we will conduct informal assessments that measure reading comprehension and formal assessments (*Diagnostic Manual of Reading Evaluation: Jordanian University Press, 1999*) that indicate each student's comprehension performance and self-efficacy. Students will participate in small group instruction that includes specific strategies for understanding what is being read. The sessions will be scheduled at a time designated by school personnel and will last for approximately 45 minutes during the school day. This project will be conducted in two seventh grade

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classes with the two main literacy teachers. The teachers will be trained prior to the intervention on how to implement the intervention and will be provided with consultation and daily feedback on their implementation of the project.

Although results of this project will be shared with colleagues in the field of education, for the purpose of confidentiality, your staff members and children's identities will be kept confidential to the extent provided by law.

Enclosed is (a) a copy of my proposal for the study, (b) a parent consent letter and a child assent letter, and (c) a form letter you may wish to use to reply to me. If you will agree to allow this study to be conducted in the Afaq School, kindly reply stating that you grant this permission and indicating whether the Ministry of Education requires the parents of participating students to provide written consent for their participation. Sincerely,

Muhammad Zayyad

Doctorate Candidate, Curriculum & Instruction Lynch School of Education, Boston College Chestnut Hill, Massachusetts, USA 02467 Tel: xxxxx

Also, for additional inquiry, please feel free to contact my advisor Dr. David Scanlon at Phone xxxxx, Fax xxxxx or Email: scanloda@bc.edu

#### APPENDIX B

## **Informed Consent Form for Teacher Participants**

# Dear Teacher,

In continuation of our previous informal phone calls and emails which took place between summer 2008 and November 2008, you are being invited to participate in a research project that is intended to investigate the impact of mediated strategy instruction on the reading comprehension and self-efficacy of seventh grade students identified with learning disabilities. The research will be conducted over three months starting mid February and ending mid May 2009. The research will include the following components:

- a) two intensive days of 3-4 hour training for the teachers on the application of the mediated strategy instruction prior to the intervention,
- b) discussing the selection of informative and narrative High-Interest, Low-Level texts that will be used for the research with the researcher,
- c) researcher in-class modeling of the mediated strategies for the first week with the teacher's collaboration,
- d) the teacher will read basic instructional guides prepared by the researcher and implement the intervention an average of 5 sessions per week (four sessions for the instruction and one session for the weekly progress tests)
- e) debriefing and weekly meetings between the researcher and the teacher on students' progress during the intervention,
- f) videotaping by the researcher of some of the sessions for the purpose of validating the data collection (once a week at random time intervals), and
- g) discussing the application of the intervention with the researcher for the purpose of modifying the instruction to meet the requirements of the research.

Your participation in this project is voluntary. You have the right to withdraw your consent or discontinue participation at any time. Although there are no financial compensations for your participation in the research, it is hoped that by participating in

this research, however, you will benefit from the strategies proposed and your teaching skills will be enhanced by learning the new strategies, in the best interest of all students.

This study may include risks that are unknown at this time. We will make every effort to keep your research records confidential, but it cannot be assured. Records that identify you and the consent form signed by you may be looked at by regulatory agencies such as:

-Federal Agencies overseeing human subject research

-Boston College Institutional review Board.

You are also welcome to ask questions at any time. Further, if in the course of any discussion we should pose a question you would rather not answer; you have no obligation to do so. This project is designed to protect you and your students' privacy in all published reports or papers resulting from this research. No one will be identified specifically in any written document. Further, identifiable information about your school will not be revealed in any official document.

Your willingness to give your time to this project is highly appreciated. If you have any questions about this research you are welcome to contact me by email at <u>zayyad@bc.edu</u>, or by phone at xxxxx. Further, you may contact the superintendent for special education, Mr. K. at Tel: xxxxx, Fax: xxxxx, or by E-Mail: xxxxx. Also, you may also contact my dissertation advisor at Boston College in the USA, Dr. Scanlon at: xxxxx. Thank you for your cooperation.

Sincerely,

I understand the information above and voluntarily consent to participate in this research. I have received a copy of this consent letter which I may keep for my personal records.

Signature of Participant Date
-------------------------------

Please initial here if we may videotape some of the sessions.

# Informed Consent Form for Teacher Participants (Arabic Version) نموذج موافقة خطية للمعلمة المشاركة

المعلمة العزيزة،

السلام عليكم وبعد،

استمراراً لمحادثاتنا السابقة التي بدأناها في صيف عام 2008، أنت مدعوة للمشاركة في بحث يهدف الى دراسة تأثير استر اتيجيات الوساطة في عملية التعلم على تحصيل فهم المقروء والمقدرة الذاتية في القراءة لدى الطلاب المعسرين قرائياً في المرحلة التعليمية الإعدادية. سيبدأ العمل على البحث ابتداء من شهر شباط وسيستمر لمدة ثلاثة أشهر. ستشتمل الدراسة على كل من المركبات التالية:

- أ) يومان مكثفان بواقع 3-4 ساعات لكل لقاء بهدف التدرب على مهارات البحث وطريقة تنفيذ عملية التعلم على الاستراتيجيات القرائية باستخدام الوساطة التعليمية.
- ب) مناقشة واختيار النصوص السردية والمعلوماتية المبنية على طريقة "إهتمام عال للمضامين ومستوى منخفض للمفردات" والتي ستشكل الجزء الرئيس من بنامج التدخل للطلاب.
- ج) تنفيذ نمذجي من قبل الباحث للمفاهيم والاستر اتيجيات داخل الصفوف في الأسبوع الأول من الدراسة (لاحقاً سيتم تبنى هذه الإستر اتيجيات من قبل المعلمات المشاركات استناداً للنماذج المقدمة).
- د) ستتابع كل معلمة المشاركة في عملية تنفيذ مهارات البحث من خلال قراءة ارشادات موجّهة للدراسة وكذلك تطبيق المهارات لمدة 5 حصص أسبوعية (حصة يومياً أيام الأحد، الإثنين، والثلاثاء، وحصتان متتاليتان يوم الأربعاء). بالاضافة الى حصة منظمة لتزويد الطالب بتغذية راجعة فردية حول تقدمه/ها في تنفيذ مفاهيم الدراسة.
  - ه) تلخيصات ومناقشات منظمة أسبوعية مع الباحث حول تقدم المشروع.
  - و) تصوير متقطع بأوقات متفاوتة لبعض الحصص لتأكيد المفاهيم والمعطيات الواردة حول المشروع.
- ز) مناقشة طريقة تطبيق الدراسة مع الباحث بهدف تعديل وتحسين طريقة التدريس حسب المستجدات والحاجة.

أود التنويه هذا الى ان مشاركتك في الدراسة طوعية وغير ملزمة. كما ولديك الحق في التوقف عن المشاركة في الدراسة في أي وقت. وبالرغم من أن هذه الدراسة لن تعود عليك باي مردود مالي مباشر، إلا أنها مبنية على أسس علمية حديثة ومن المتوقع ان تعود بالفائدة المهنية اليك من حيث تحسين مهارات التدريس وكذلك ستعود بالفائدة على أسس علمية حديثة ومن المتوقع ان تعود بالفائدة المهنية اليك من حيث تحسين مهارات التدريس وكذلك ستعود بالفائدة على أسس علمية حديثة ومن المتوقع ان تعود بالفائدة المهنية اليك من حيث تحسين مهارات التدريس وكذلك ستعود بالفائدة على أسس علمية حديثة ومن المتوقع ان تعود بالفائدة المهنية اليك من حيث تحسين مهارات التدريس وكذلك ستعود بالفائدة على جميع طلابك في الصف. يمكنك توجيه اسئلة حول اي نقطة تتعلق بالدراسة باي وقت تشائين، ويمكنك الامتناع عن الاجابة على أي سؤال قد يبدو غير ملزم بالنسبة لك. لقد صمم هذا البحث بشكل دقيق يشتمل على العديد من الضوابط العلمية التي ستحافظ على خصوصيتك وخصوصية طلابك في الصف، وبالتالي لن تستخدم أي معلومات أو أسماء تدل بصراحة على شخصك أو اسمك أو أسماء الطلاب أو تفاصيلهم

الدالة عليهم. هذا ولن تستخدم أي معلومات تدل على هوية مدرستك الا بما تقتضيه الأمانة العلمية في طريقة نشر المعلومات المتعلقة بالدر اسة.

أخيراً، أشكرك جداً على استعدادك للمساهمة بوقتك ومجهودك في هذه الدراسة متمنياً ان تعود بالفائدة عليك وعلى كل المشاركين في المشروع. إذا كانت لديك أية استفسارات، أرجو أن لا تترددي بالاتصال بي على تفاصيلى المدونة ادناه، أو الاتصال على الأستاذ أحمد كبها، مفتش التربية الخاصة لمدينة حيفا

هذا وبالإضافة الى أنه يمكنك الاتصال بمرشد الرسالة د. دافيد سكانلون من كلية بوسطن على العناوين المدونة ادناه

Dr. Scanlon, Boston College, Tel: xxxxx Email: xxxxx.

افهم جيداً كل المضامين الواردة في هذه الرسالة وأوافق طواعية للمشاركة في الدراسة. كما وأقر بأنني استلمت نسخة من هذه الرسالة للإحتفاظ بها في سجل ملفاتي الخاصة بي.

Signature of Participant	Date	2
Please initial here if we may	videotape some of the sessions	

#### APPENDIX C

# **Parental Informed Consent**

## Dear Parents,

My name is Muhammad Zayyad. I work closely with Mr. M., the School principal and Mr. K., the superintendent in your region. I am a doctoral candidate in the Curriculum and Instruction Program at Boston College, Chestnut Hill, Massachusetts, USA. One of my areas of interest is the reading comprehension development of middle school students who have difficulties with learning. I will be implementing an intervention project that evaluates the use of a specific teaching method in reading instruction.

Your child is being invited to participate in the research, based on a recommendation from the superintendent. Your child, now, is heading towards high school. At this stage, it is important to master comprehension strategies that are necessary to succeed in reading, at all content areas. At the high school level, students will encounter materials at the content area that requires high level of reading comprehension. Therefore, working with 7th grade students now is the right grade because there is sufficient time to practice on such skills. Participation in the study may directly help your child's reading comprehension and positive feelings about him or herself as a reader.

In this project, we will conduct informal assessments that measure reading comprehension and formal assessments (*Diagnostic Manual of Reading Evaluation: Jordanian University Press, 1999*) that indicate your child's current reading abilities. Students will participate in small group instruction that includes specific strategies for understanding what is being read. The sessions will be scheduled at a time designated by school personnel and will last for approximately 45 minutes during the school day. Your child's teacher will be the primary teacher for all reading strategy lessons. Although results of this project will be shared with colleagues in the field of education, for the purpose of confidentiality, your child's identity will be kept confidential to the extent provided by law.

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Participation or non-participation in this project will not affect your child's placement in any programs. You and your child have the right to withdraw consent at any time without consequence. There are no known risks, nor is there compensation for his/her participation in this project. This study may include risks that are unknown at this time. We will make every effort to keep your research records confidential, but it cannot be assured. Records that identify you and the consent form signed by you may be looked at by regulatory agencies such as:

-Federal Agencies overseeing human subject research

-Boston College Institutional review Board.

This project will last for about eight weeks. Results of the project will be available by October 30, 2009. If you have any questions or concerns about this project, please contact me at xxxxx. For any further inquiries or concerns about this study, please contact the superintendent, Mr. K. at: xxxxx or contact the school directly. You may also contact my dissertation director at Boston College in the USA, Dr. Scanlon at: xxxxx or xxxxx Thank you for your cooperation.

Sincerely,

Muhammad Zayyad, M. A.

Complete and return one copy to your child's teacher.

\_\_\_\_\_

I have read the procedures described above. I voluntarily give consent for my child, \_\_\_\_\_\_\_, to participate in Mr. Zayyad's reading study. I have received a copy of this letter which I may keep.

Parent/Guardian

Date

# Informed Consent Form for Parents (Arabic Version) نموذج موافقة خطية لأولياء الأمور

الأهل الأعزاء،

السلام عليكم ورحمة الله وبعد،

اسمي محمد زيّاد وأعمل على اعداد رسالة الدكتوراة في مجال التربية في كلية بوسطن بولاية ماساتشوستس في الولايات المتحدة. أعمل بشكل مكثف مع مدير مدرسة XXXXX، السيد XXXXX وكذلك مع مفتش المدرسة السيد XXXXX حول مشروع يسعى الى تحسين مهارات التعلم لدى الطلاب. مجال تخصصي يتمحور حول مهارات القراءة واستراتيجيات فهم المقروء لطلاب المرحلة الإعدادية ممن يستصعبون في القراءة وفهم المقروء. حالياً وخلال الأشهر الثلاثة القادمة من شباط الى أيّار 2009 سأجري في مدرسة آفاق دراسة حول أساليب تعليم استراتيجيات لتعلم القراءة وفهم المقروء في صفوف السوابع. من المتوقع أن تعود هذه الدراسة بالفائدة التربوية المباشرة على إبنكم أو ابنتكم في حال مشاركتهم في الدراسة، خاصة فيما يتعلق باكتساب خبرات في طريقة قراءة النصوص والاجابة على اسئلة فهم المقروء، وكذلك ستعمل على تحسين شعور هم العام نحو القراءة.

في هذه الدراسة سأقوم باجراء اختبارات اسبوعية غير رسمية في القراءة لقياس مدى تقدم الطلاب في القراءة من اسبوع لآخر، وسيتم إجراء اختبارات رسمية في القراءة في بداية ونهاية المشروع لفحص التغير الحاصل ما بين الطلاب والصفوف. كما وسيتم تقسيم الطلاب الى مستويات ومجموعات عمل صغيرة لتنفيذ فعاليات تساعدهم على تعلم استراتيجيات فهم المقروء. أحياناً سيتم تصوير أو توثيق طريقة عمل الطلاب بكاميرا فيديو لمراجعة المعلومات وتحليلها. ستقوم معلمة الصف، بعد أن تحصل على الإرشاد اللازم من الباحث، بتنفيذ الفعاليات في الصف. سيتم تلخيص نتائج الدراسة لاحقاً وستعرض امام خبراء في القراءة في الجامعة، وكذلك طواقم المدرسة ومسؤولين تربوبين آخرين؛ لكن المعلومات الخاصة المتعلقة بابنكم أو ابنتكم لن تظهر ولن يتم الإشارة اليهم بالاسم إطلاقاً بحيث يتم استخدام أسماء مستعارة فقط.

إن مشاركة ابنكم أو ابنتكم في المشروع طوعية، ولن تؤثر على عملية تعيين مكان تعلم الطالب في أي صف هذا ولا تتضمن هذه الدراسة أي خطورة أو ادخال الطالب في تجارب سلبية على الاطلاق، بل كلها تستند الى أنشطة جماعية داخل صف الطالب تحت اشراف المعلمة المباشر. كما وأن لديكم الحق في الانسحاب من الدراسة في أي وقت. كما وأود التنويه الى أن الإشتراك في المشروع لا يتضمن دفع أي رسوم مالية، ولن يكون هناك أي تعويض مالى نتيجة الاشتراك في الدراسة.

من المتوقع أن تعرض نتائج الدراسة في شهر أيلول 2009. ويمكنك عندها الاتصال بي على الأرقام التالية: هاتف البيت XXXXX الايميل XXXXX

كما ويمكن الاتصال بمرشدي في الجامعة د. دافيد سكانلون . Tel: xxxxx Email: <u>xxxxx</u>.

هذا ويمكن الاتصال بمفتش التربية الخاصة XXXXX

هذا وبالإضافة الى أنه يمكنك الاتصال بمرشد الرسالة د. دافيد سكانلون من كلية بوسطن على العناوين المدونة ادناه افهم جيداً كل المضامين الواردة في هذه الرسالة وأوافق طواعية للمشاركة في الدراسة. كما وأقر بأنني استلمت نسخة من هذه الرسالة للإحتفاظ بها في سجل ملفاتي الخاصة بي.

مع الشكر،

محمد زيّاد

أرجو تعبئة الاستمارة وإرسالها في اليوم التالي مع إبنكم أو ابنتكم

لقد قرأت جيداً فحوى الرسالة وأوافق على اشتراك ابني/ابنتي: محمد زيّاد في المدرسة. لقد حصلت على نسخة إضافية من هذه الرسالة ويمكنني الاحتفاظ بها.

اسم ولي الأمر
التوقيع:
التاريخ:

### APPENDIX D

#### **Child Assent Form**

February, 2009

Dear

You are being invited to participate in a research study that will take place in your class. Your school principal has recommended your class for participation in the study. You are, now, heading towards high school. At this stage, it is important to learn comprehension strategies that are necessary to succeed in reading, at all content areas. At the high school level, you will be learning subjects that require high level of reading comprehension. Therefore, working with your class at the 7th grade level now is the right grade. The 7<sup>th</sup> grade will give us enough time to practice on comprehension skills.

Will you agree to be part of a research study being done in your class at your school's regular schedule? This research involves teaching you, along with your classmates, some strategies that will help you in reading comprehension and learning for other school subjects too. You will be asked to participate in the activities that are designed for the study and discuss your work with your classmates and the teacher in class. You will be asked to take tests in reading comprehension once every week and some reading tests will be performed once every month. These tests will not decide your grades in school or for any formal decision on your behalf. The only use for these tests is to measure your improvement in reading during the time that this research is being conducted. Also, you may be selected to participate in an interview for about one hour two times during this research period. Your progress in this research will be discussed every week with your teacher who will show you on charts how you are progressing in reading.

Both your parents and your teacher have agreed to you being a part of this study, if you want. If you say "yes," we will be observing your work in class, and sometimes

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watch videotapes of your class and will sometimes ask you how you think the program is working. You don't have to be part of this study if you don't want to, nothing bad will happen to you if you say "no." Please ask questions if there is something you don't understand before you say if you will participate; please talk to your parents about it. If you want to let us look at your work from these lessons as well as participate in the reading tests and videotapes along with other children in your class and have ask you some questions, please write your name and the date on the next page.

Thank you.

# **Child Assent Form**

I will take part in this study.

Sign your first and last name here

Print your first and last name here

Today's date

Signature of adult providing information and witness to assent

date

#### APPENDIX E

#### A translated version from Arabic to English of a weekly taught passage

#### Folkloric Stories of Ash'ab and Juha

#### 1. Juha and the people

Once travelled Juha and his son to the city. Juha rode on the donkey and let his son walk behind them. They passed by a group of people. When people saw them, some of them said: look at this man who has a hard heart riding on the donkey and leaving his son walking behind. Juha stepped down and started to walk letting his son ride the donkey instead of him. Soon they passed by a group of people. Someone in the crowd shouted, "Look at this impolite young boy who rides the donkey leaving his father walking behind him alone!"

Juha and his son, after hearing the people's talk decided that both of them should ride the donkey. Soon they met another group of people who were looking and talking about them. The people shouted at Juha and said: "what a mean man, rides on the donkey with his son, not caring for the donkey".

Juha, after hearing what the people said, decided to step down along with his son and to walk without riding the donkey. After a long walk, the both of them were tired and finally met a new group of people who start laughing at them. Look at these two stupid fellows who walk all this way without riding the donkey that is made for this purpose.

Juha kept walking for a distance, and shortly after they bypassed them, Juha asked his son to carry the donkey with him. They reached to the city's main gate, and there was more people who start laughing and pointing at them. Someone said: "look at these two crazy people carrying a donkey instead of being carried by the animal". Then, Juha put the donkey down and told his son: "listen my son; pleasing all humans is never achievable".

# 2. Ash'ab and the Fish

While some people were sitting and dining at one of the respected people of the city, Ash'ab, who is famous for loving food, walked in. one of the guests, wanted to laugh at Ash'ab told the others who were at the table: Ash'ab has a habit to eat the best food at the table. Let us place the big fish in the corner table so he would not eat from it, and let's invite him to eat the small fish with us and watch what he would do".

After doing so, the asked Ash'ab to tell them what he thinks of the fish. Ash'ab said: Oh, I swear to God that I despise the fish so badly; because my father died in the sea and the fish ate him".

The guests said: "let's eat Ash'ab. This is your chance to take revenge of the fish that killed your father". Ash'ab sat at the table and reached for a small fish. He looked shortly at it and shook it with his hand close to his ear. Ash'ab while making the fish look like that it was talking to him, he whispered something unclear while sighting at the large tray of fish which was placed at the corner table.

Ash'ab said to the guests: "Do you have an idea what this small fish just told me?" They said: no, we don't. Please tell us!

Ash'ab said: the small fish says that it never attended my father's death, because she was too young at that time when he died. It also told me that I should take care of the large fishes that are placed in the tray in the corner of the house. The fish told me that those were the fishes who attended my father's death, and they sure ate him.

#### APPENDIX F

# A translated version of a comprehension researcher made test followed by the original (Arabic version)

Folkloric Stories of Ash'ab and Juha A Comprehension Weekly Test

Name: \_\_\_\_\_ Data: \_\_\_\_\_

Circle the answer that best matches each of the following questions. Select your answers to the best of your knowledge based on the passage that you have read. You are only allowed to choose one answer for each question. However, if you make an error, you may cross the error answer and circle the next one that you have chosen. Please read carefully each question before you answer. Good Luck!

- 1. What was the people's opinion when saw Juha riding his donkey while his son is walking?
  - a. Were surprised by the son who does not want to ride the donkey.
  - b. Were surprised from the hard hearted father who did not want his son to ride
  - c. Were surprised by the donkey that refused to keep walking.
  - d. Were surprised by the father and son who only had one animal to ride.
- 2. Why did Juha kept changing his mind every time the people spoke about him and his son?
  - a. Because he wanted to show his respect to the people in the market.
  - b. Because he wanted to punish the donkey who refused to carry the two of them
  - c. Because he was stranger to the city and did not know anyone.

- d. Because he did not know how the people in the new city treat their animals.
- 3. What did Juha meant by the statement "pleasing all humans is never achievable"?
  - a. There are some people that you can't please no matter what you do.
  - b. The people don't like to see Juha being harsh on his son.
  - c. He could not understand what people want from him and his son.
  - d. You cannot please all people at once in everything you do.
- 4. What does the word "bypassed" them mean?
  - a. They beat them in running.
  - b. They came to them.
  - c. They avoided them.
  - d. They got closer to them.
- 5. The best summary to Juha's story is:
  - a. Juha likes to ride on the donkey. Therefore, he let his son to walk all the way.
  - b. The donkey has feelings like humans. Therefore, we should take care of it.
  - c. Juha was trying to please people all the time.
  - d. People were laughing at Juha and his son all the time.
- 6. What was Ash'ab habit when he was invited to food?
  - a. He would eat anything that is being served to him.
  - b. He would eat until he feels completely full.
  - c. He loves to eat fish.
  - d. He would eat the best food on the table.
- 7. What did the people do to direct Ash'ab away from the big fish?

- a. They placed the big fish away in the corner of the house.
- b. Placed the small fish on top so he would start eating the small ones first.
- c. People kept asking him to tell jokes so he would not pay attention to the food.
- d. The guests told him to get revenge from the fish that killed his father.
- 8. What was Ash'ab's trick to avoid eating the small fish?
  - a. Told the guests that he does not like to eat the fish because they killed his father.
  - b. He told them that the small fish do not fill his stomach and he would rather eat the big fish.
  - c. Told them that the small fish never watched his father's death.
  - d. Convinced the guests that the small fish make him sick.
- 9. What is meant by the word "attended him" which was mentioned in the story of 'Ash'ab and the Fish' mean?
  - a. Was present.
  - b. Recognized him.
  - c. Participated in his killing.
  - d. Never heard of him.
- 10. What is the purpose from talking about Ash'ab's story?
  - a. To learn a life wisdom.
  - b. To read a pleasurable folkloric story.
  - c. To learn about the history of Ash'ab with the fish.
  - d. To learn the manners of eating.

# APPENDIX G

## **Researcher Made Weekly Comprehension Test (Arabic Version)**

فحص حول مهارات فهم المقروء - النص الرابع عنوان النص: "نوادر وطرائف"

اسم الطالب/ة: ..... الصف: ..... التاريخ: .....

أَحِط بِدائرة رَمز الإِجابة التي تَعْتَقِد أنها صَحيحة. إذا أَخْطأت بإجابة فيمكنك شَطْبَ الإجابَةِ الأولى بِإشارة "X" ثمَّ أَحِطْ الإجابة الثانية الَّتي اختَرْتَها.

- ما موقف الناس عندما شاهدوا جحا راكباً على الحمار وابنه يمشي؟
   تعجَّبوا من الإبن الذي يمشي ولا يركب على الحمار.
   ب. استغربوا من الأب الذي قسى قلبه ولم يركب ابنه.
   ج. استغربوا من الحمار لأنه يرفض المشي
   د. تعجَبوا من الأب وابنه لأنهما يركبان على حمار واحد.
  - د. لماذا كان جحا يغيّر رأيه كل مرّة يتكلم الناس عليه وعلى ابنه؟
     أ. لأنّه أراد إظهار احترامه لرأي الناس.
     ب. لأنه أراد معاقبة الحمار الذي رفض حمل الاثنين.
     ج. لأنه كان غريباً عن المدينة ولا يعرف أحداً.
     د. لأنه لا يعرف كيف يتصرف الناس مع الحيوانات.
- .. ماذا كان يقصد جحا العبارة التالية: "لا تستطيع أن تظفر برضا الناس" ?
  - أ. أنَّه بعض الناس لا يمكن ارضاءهم مهما فعلت.
     ب. أنَّ الناس لا تحب رؤية جحا يقسو قلبه على ابنه.
     ج. أنّه لم يفهم ما يريده الناس منه ومن ابنه.
     د. أنّه لا يمكن ارضاء جميع الناس فى كل شىء.

4. ما معنى "جاوزاهم" التى وردت فى قصة جحا؟

ب. نزلا اليهم.	أ. سبقاهم.
د. اقتربا منهم.	ج. مرّا عنهم.

- أفضل تلخيص لقصة جحا هو:
   أ. أن جحا يحب ركوب الحمار لذا ابقى ابنه ماشياً.
   ب. أنّ الحمار حيوان يشعر مثل الإنسان لذا يجب الرفق به.
   ج. أنّ جحا كان يحاول إرضاء الناس طوال الوقت.
   د. أنّ الناس كانوا يضحكون على جحا وابنه كل الوقت.
- ما هي عادة أشعب في الجلوس الى الطعام "?
   أ. يأكل كل ما يقدم له.
   ب. يأكل حتى يشبع.
   ج. يحب أكل السمك.
  - 7. ماذا فعل الناس لابعاد أشعب عن السمك الكبير؟
    أ. وضعوا السمك الكبير في زاوية البيت.
    ب. وضعوا السمك الصغير فوق السمك الكبير لكي يأكله.
    ج. بقي الناس يسمعون الى قصصه حتى لا ينتبه للطعام.
    د. قالوا له خذ تأرك من السمك الذي أكل والدك.
- 8. ما هي حيلة أشعب لكي يأكل السمك الكبير؟

   قال للنّاس أنه لا يحب أكل السمك لأنه قتل أبيه.
   قال لهم أنّه لا يشبع من السمك الصغير وأنّه يفضل أكل السمك الكبير.
   خ. أخبر هم أن السمك الصغير لم يحضر موت أبيه.
   د. أَقْنَعَ الناس أنّه السمك الصغير يصيبه في المغص الشديد.
- 9. ما معنى كلمة "تدركه" التي وردت في جملة "إنها لم تحضر موت أبى، ولم تدركه" التي ذكرت في الفقرة الأخيرة من قصة "أشعب والسمك"؟

# ج. تشارك في قتله. د. تسمع عنه.

10. ما هو الهدف من التحدث عن قصة "أشعب والسمك"?

أ. التعلم عن حكمة من الحياة.
 ب. الإستمتاع بقصة مسلية.
 ج. التعرّف على تاريخ أشعب مع السمك.
 د. تعلّم آداب الطعام.

# APPENDIX H

# A Cueing Card Sample for Questioning Strategy in Arabic

إستراتيجية بناء الأسئلة

بطاقة مساعدة لإستراتيجية بناء الأسئلة

	*** 🖌 💈 👘 🕴
الإجابات	فعالية توجيه الأسئلة
القائد: دعونا نفكر بأفضل الأسئلة التي تناسب القطعة التي	
نقراها.	
	أي سؤال برأيكم يناسب هذه
	الفقرة؟
	أي سؤال برأيكم يناسب هذه
	الفقرة؟
	أي سؤال برأيكم يناسب هذه
	الفقرة؟

# APPENDIX I

A Cueing Card Sample for Schematic Visualizing Strategy

2. إستراتيجِيَّة التعرف الى مبنى النص: بطاقة مساعدة لإستراتيجية التلخيص

وصف المبنى	عنوان مبنى النص
أبا الدَحْداح هو صحابي عاش فترة وقد وصفه الرسول محمد (صلى الله عليه وسلم) لأنه	<ol> <li>.1 وصف المفهوم/ الظاهرة/ الشخصية</li> </ol>
Topic Theorem	
بدات القصة ب واستمرت ب تم انتهت ب Cycle ب 1 1 2 2	2. تسلسل احداث
أراد أن لكنه لذا وفي النهاية هدهم جوره جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جوره جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورهم جورمم جورمم حم حم حم حم حم حم حم حم حم	3. مشكلة/حل
وهما يشتركان في الصفة نفسها لكنهما يختلفان في	4. مقارنة/تناقض
	5. سبب/نتيجة

# APPENDIX J

# A Survey Report on Self-efficacy in Reading Comprehension

استمارة تقييم ذاتي حول المقدرة الذاتية

إقرأ الأسئلة المرفقة بالجدول التالي وأحط بدائرة رقم الإجابة المناسب لكل سؤال، حسب رأيك بكل صراحة. لن يتم تقييمك بعلامة على اجاباتك.

جداً	متأكد	د	متأك	د	يباً متأك	ً تقر		ر متأكد	غير	
1(	) 9	8	7	6	5 5	4	3	2	1	
										<ol> <li>هل يمكنك أن تتنبأ حدثاً</li> </ol>
10	9	8	7	6	5	4	3	2	1	واحداً، على الأقل، من نُصِّ
										قَر أُتَه؟
10	9	8	7	6	5	4	3	2	1	2. هل يمكنك أن تستخرج
										معاني كلمات بالإستعانة
										برموز من النَّص؟
10	9	8	7	6	5	4	3	2	1	<ol> <li>. هل يُمْكِنُكَ أَنْ تَسْأَلَ سوالين</li> </ol>
										مُناسِبَيْنِ، على الأقل، حول
										مضمون النّصّ الذي قَرَأْتَه؟
10	9	8	7	6	5	4	3	2	1	4. هَلْ يُمْكِنُكَ أَنْ تُمَيِّزَ مَبْنى
										النَّص، مثل: مُقارَنَة
										وتَناقُض، سَبَب ونتيجة؟
10	9	8	7	6	5	4	3	2	1	<ol> <li>.5 هَلْ يُمْكِنُكَ أَنْ تُلْخُصَ النّص </li> </ol>
										الذي تقرأه مع المُحافَظَةِ
										على الفِكْرَة المَرْكَزِيَّة؟
10	9	8	7	6	5	4	3	2	1	6. هل يُمْكِنُكَ الإجابة على
										معظم أسئلة فهم المقروع
										للنَّصّ الذي تَقْرَأَه؟

تغييمك بعرمة على الجابات. اسم الطالب/ة: ......