Lebanese American University

Teachers' Perception of Students with

Disruptive Behavior and Poor Working Memory

By

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Teachers' Perception of Students with Disruptive Behavior and Poor Working Memory

Mirna Abdul Karim Jrab

Abstract

The present study investigated how teachers perceive children with poor working memory who exhibit disruptive behavior and whether disruptive behavior is associated with poor working memory. Four schools participated from the city of Beirut and suburbs including 115 students from grades one to three, and 12 teachers. The teachers completed three scales: Behavior Rating Inventory of Executive Functions (BRIEF), Student-Teacher Relationship Scale (STRS), and Teacher Child Rating Scale (T-CRS); teacher interviews were also conducted for teachers. Children were tested for poor working memory using the digit memory test (DMT). Results showed significant correlation between poor working memory and disruptive behavior and teachers perceive these exhibited behaviors based on their inner judgment. Future directions are suggested to guide teachers on how to professionally report students with disruptive behavior.

Keywords: Teacher's perception, Student-teacher relationship, Disruptive Behavior, Attention, Working memory, Executive function, Verbal memory

Table of Contents

Chapter	**Page**
Cover page	i
Thesis Approval Form	ii
Thesis Copyright Release Form	iii
Plagiarism Policy Compliance Statement	iv
Acknowledgements	v
Abstract	vi
Chapter One: Research Context	
I- Introduction ……..…….. 9	
1.1 Rationale … ……..…… 9	
1.2 Statement of the Problem ……..…….…….. 12	
1.3 Purpose ……..…….…….. 12	
1.4 Significance of the study …….……..…12	
1.5 Research Questions and Hypotheses ……... 13	
1.6 Definition of Terms ……..……... 13	
1.7 Division of Thesis ……..……. 14	
Chapter Two: Literature Review	
II- Literature Review ……. 15	
2.1 Definition of Disruptive Behavior ……. 15	
2.2 Teachers' Perception of Children with Disruptive Behavior……. 16	
2.3 Student-Teacher Relationship ……..…… 17	
2.4 Working Memory …….……19	
2.5 Overview of Working Memory ……..….. 20	

2.6 Working Memory and Learning …….…..... 22

2.7 Working Memory and Inattentive Behavior ……... 22

2.8 Working memory and IQ …… 24

2.9 The Lebanese Context …… 25

Chapter Three: Methodology

III- Methodology ……. 27

3.1 Research Design ……. 27

3.2 Sample …… 27

3.3 Instruments ……. 30

3.4 Procedures …….. 33

3.5 Data Analysis ……. 34

Chapter Four: Results and Findings

IV- Results …….……. 36

Chapter Five: Discussion

V- Findings Conclusions and Recommendations ……42

REFERENCES …….. 64

APPENDICES …… 75

List of Tables

Page

Table 1. Gender, age, grade-level, and school demographic characteristics ……..…… 29

Table 2. Correlations between working memory and disruptive behavior using DMT components and BRIEF subscales ……..... 37

Table 3. Correlations between student-teacher relationship and disruptive behavior using STRS subcomponents and BRIEF subscales ……. 38

Table 4. Correlations between teachers' perception of disruptive behavior using T-CRS subcomponents and BRIEF subscales ……. 39

Table 5. Correlations between teachers' perception of disruptive behavior and working memory using T-CRS components and DMT components ……..….. 39

Chapter One

Introduction

Rationale

Most teachers face difficult situations with children who exhibit disruptive behaviors in the classroom context. Obviously, these children cause frustration and stress for teachers, especially when teachers lack the understanding of the children's real problems. Teachers often report these children as being inattentive, hyperactive, impulsive, and forgetful (Shaughnessy & Moore, 2014). Usually teachers are the first to report behavioral problems, either through their own observations or through using checklists. McCarthy et al. (as cited by Jacobsen, 2013), relates teachers' classroom success to having children with challenging behavior; through student-teacher relationships, teachers can build certain perceptions regarding certain behaviors. Therefore, teachers' perception is critical in finding solutions to these students who exhibit disruptive behavior, because it can help in identifying students' problems and consequently contribute in finding appropriate solutions. However, teachers' reports alone are not always the final evaluation for such cases, because teachers are not specialized in diagnosing learning difficulties or behavioral problems. Eventually, these children should be referred to the school's psychologist for appropriate diagnosis.

Disruptive students tend to distract peers; therefore, teachers will most likely to face these problematic behaviors with regular students as well as those who are not suspected to have learning difficulties. Inattention, impulsivity, and aggression are the main concerns for the teachers who are asked to characterize children's problems when they detect lack of readiness for learning, and often these teachers

mention that these behaviors are exhibited by all students across the classroom (Myers & Pianta, 2008; Rimm-Kaufman, Early, Cox, Saluja, Pianta, & Bradley, 2002). Children with ADHD are found to exhibit behaviors typical to working memory problems (Alloway Gathercole, & Elliott, 2010) and the authors suggest early assessment to prevent further learning difficulties, since working memory is considered important for the development of general social and cognitive skills (Engle, Carullo, & Collins, 1991) allowing for better academic performance and school experience.

In Lebanon, most schools do not have a system for psycho educational assessment. Consider, for example, children with poor working memory. These children are unable to remember simple learning instructions or perform simple tasks and lose attention easily often ending up facing learning difficulties (Alloway, Gathercole, Holmes, Place, Elliott, & Hilton, 2009b). While teachers focus only on students' apparent behaviors, the main problem is left undetected, and teachers rely on their own personal emotions, feelings and limited knowledge and experience, labeling children as "hyper", "disruptive", or even go further to mistakenly label them as having attention deficit/hyperactivity disorder (ADHD). These children should be referred to the school psychologist to conduct the appropriate evaluation, but in the absence of such facilities on the school premise, these children end up with referrals to clinicians referred to clinicians for psycho educational diagnoses, with most of them being labeled as special education students. This in turn results in children being placed in following special education programs either in special schools or specialized education centers under the supervision of specialists and clinicians.

Statement of the Problem

Teachers perceive students with poor working memory as being disruptive and label them without professionally diagnosing them and in turn, refer them to special education services.

Purpose

The aim of this study was to examine whether teachers accurately identify children with poor working memory or only characterize them for being inattentive and distracted, for the purpose of guiding them to better understand and care for these children and provide them with effective behavior accommodations and learning strategies inside the classroom.

Significance of the Study

Recently in schools of Lebanon, more teachers report on students with disruptive behavior as having learning difficulties. As a result, in the absence of proper implementation of behavioral strategies, some of these students are neglected inside schools and out, and parents are not aware or well versed of proper procedures to follow in the attempt to solve the problem of their children. Consequently, and in the absence of professional diagnosis, students with potential for academic achievement are slipping through the cracks (Gathercole & Alloway, 2006). Therefore, teachers and parents need to be aware of the reasons behind disruptive behavior and provide early interventions for these children to adapt in school life

class work, and other school activities and practice and enjoy social relationships with peers and adults for better learning outcomes and academic achievement.

Research Questions

The current study seeks to investigate the following questions:

1. Is there a relationship between poor working memory and disruptive behavior?
2. Can poor student-teacher relationship lead to disruptive behavior?
3. Is there an association between teachers' perception of disruptive behavior and students with poor working memory who exhibit disruptive behavior?

Hypotheses

1. Poor working memory is related to disruptive behavior.
2. Poor student-teacher relationship leads to disruptive behavior.
3. Teachers' perception of disruptive behavior is not associated with students with poor working memory who exhibit disruptive behavior.

Definition of terms

- *Disruptive behavior:* a set of behaviors exhibited by a student to prevent him and his peer from learning (Nahgahgwon, Umbreit, Liauspin, & Turton, 2010).

- *Working memory:* is the capacity to store and manipulate information over a short period of time (Alloway, Gathercole, Kirkwood, & Elliott, 2009a; Baddeley, 1996; Baddeley, 2000; Baddeley, Emslie, & Duncan, 1998).

- *Executive function:* is an umbrella term for different cognitive skills required for socially appropriate conduct and goal-directed activities that are needed to flexibly adapt in new situations which learning constitutes one of these situations (Jacobson, Williford, & Pianta, 2011; Kloo & Perner, 2008; Van der Ven, Lroesbergen, Boom, & Leseman, 2012;).

Division of Thesis

The thesis is divided into 5 chapters. Chapter 1 introduces the topic. Chapter 2 includes the literature review. Chapter 3 includes the methodology and procedure of the study. Chapter 4 presents the results and findings. And chapter 5 discusses results and findings based on the literature review.

Thus, the current research study seeks to investigate teachers' perception of students who exhibit disruptive behavior in the classroom and who might have working memory problems, in relation to previous research studies and literature review.

Chapter Two

Literature Review

Disruptive behavior is a challenge for most teachers during instruction time. Recently, in the schools of Lebanon, complaints about these students is increasing, and teachers rush into labeling some of them with medical disorders without proper diagnosis. According to clinical practice, these children might have working memory problems, which is causing lack of understanding to school rules and school learning. Most of these students need learning accommodations and different teaching strategies and they can follow with their peers without lagging behind.

Disruptive Behavior

Disruptive behavior is globally defined as a set of behaviors exhibited by a student to prevent him and his peer from learning (Nahgahgwon et al., 2010). Normally, it occurs in the classroom during instruction time, when attention and focus are required from students; disruptive, noncompliant, and antisocial behaviors are exhibited by children with or without disabilities (Nahgahgwon et al., 2010). Obviously, teachers who lack classroom and discipline management are the first to find it hard to control the students, because these behaviors contribute to challenging experiences for any teacher. Consequently, poor relationships build up between behaviorally disruptive students and their teachers, causing teachers' additional stress and frustration (Madill, Gest, & Rodkin, 2014), especially during instruction time.

Teachers' Perception of Children with Disruptive Behavior

Some studies show that less educated and less experienced teachers report frequent classroom behaviors (LeBlanc, Swisher, Vitaro, & Tremblay, 2007). This clearly indicates that less educated teachers lack the knowledge and information of how to deal with students in general, and behaviorally defiant students in particular. Based on their own observations, these teachers tend to give biased reports and go even further to classify these students as clinicians and specialists would. They rely mainly on their personal feelings and emotions based on stress and frustration instead of judging professionally and objectively (Richardson & Shupe, 2003).

Research shows that the way teachers relate to their students is highly associated to the way they relate to themselves (Denham, Bassett, & Zinsser, 2012) in that they tend to minimize their students' emotions. Denham et al,. (2012) assure that teachers' emotional competence and socialization has a direct impact on students' social/emotional and academic success. Furthermore, we find that teachers relate differently with students who are more positive. They tend to address them in a friendly and assertive fashion, away from aggression and stress (Denham et al., 2012).

This leads to the interpretation that teachers relate to their students based on their own personalities and characteristics and even their temperament. Such a conclusion raises big questions on whether teachers are putting enough efforts in the attempt to improve their teaching methods and their relationships with their students. As educators, teachers are entitled to teach social and emotional skills as well as academic skills as they are strongly related to academic success (Denham et al.,

2012; Wight & Chapparo, 2008), provided they put effort in developing their own knowledge and intrapersonal relationships.

Student-Teacher Relationships

Positive student-teacher relationships contribute as a safety base for students, because they are able to better work and cooperate. They know if they are upset, they can count on the teacher to identify their problem and positively react to them; in addition, they get more engaged and motivated into academic activities, and build a great sense of belonging to their school community (Denham et al., 2012; Gest, & Rodkin, 2014; Hamre & Pianta, 2001; Hamre & Pianta, 2005; Madill et al,. 2014; Merritt, Wanless, Rimm-Kaufman, Cameron & Peugh, 2012; Myers & Pianta, 2008; Richardson & Shupe, 2003; Spilt, Koomen, Thijs, & van der Leij, 2012; Yager, Pedersen, Yager, & Noppe, 2011/2012). Thus, positive relationships with teachers can help enhance and regulate students' emotions, allowing them to connect with teachers on a more effective and productive level, and provides better engagement in classroom tasks (Denham et al., 2012; Smith & Ray, 2010).

Other studies show strong associations between positive teacher-student relationships and academic achievement (Denham et al., 2012; Myers & Pianta, 2008), because students who fail to form positive relationships and lack the support of their teachers are at risk for school failure (Myers & Pianta, 2008). Teachers who offer emotional support to their students and who are responsive to their needs, in addition of possessing effective behavior management, end up creating positive classroom atmosphere, whereas when placed in less supportive classroom, at-risk

students ended up with more conflict with their teachers and low achievement (Hamre & Pianta, 2005). Ahmed and Qazi (2011) found that teachers' motivational power and leadership style is capable of rising students to their optimal level.

Gehlbach, Brinkworth, and Harriss (2011), insist that the relationship between student and teacher is important in all aspects of the entire school experience. In a study by Pianta, Steinberg, and Rollins (1995), students who were at risk for special education referral ended up being promoted because they had positive relationships with their teachers (Myers & Pianta, 2008).

In contrast, negative relationships may lead to stealing away children's resources to give more focus on learning (Denham et al., 2012), and more disruption is most likely to occur during instruction time. Furthermore, Spilt et al., (2012) state that negative teacher-student relationships tend to be characterized by conflict, helplessness and feelings of anger in teachers. Basically, the conflict derives from lack of interpersonal experiences in teacher training and consultation (Spilt et al., 2012). It is observed that teachers tend to be less sensitive and more controlling towards children with challenging behaviors (Spilt et al., 2012).

Working with students who have behavioral problems require teachers' self-awareness of their own behaviors, because students who experience stress are capable of locating and activating unresolved issues in any teacher's personal life, and few are able to prevent any conflict and face the situation calmly and reasonably without relying on conscious effort (Richardson & Shupe, 2003).

In a study by Hamre and Pianta (2001), the quality of relationship between student and teacher and school performance were found to be both persistent and

strong. It is widely known that disruptive behaviors tend to carry on along upper classes accompanied by low achievement and negative interactions with peers (Myers & Pianta, 2008), and peers tend to report disruptive behaviors as well, because they are addressed with violence and anger (Elias, 2004; Denham et al., 2012). In another study by Elliott, Gathercole, Alloway, Holmes, and Kirkwood (2010), classroom intervention was designed to help children with working memory difficulties and guide their teachers to enhance the capacity of children to learn. Despite the intervention, only dedicated teachers who were already using appropriate strategies spontaneously showed desirable results, correlated with superior academic performance of students.

According to McManus and Kauffman (1991), lack of administrative support has been consistently linked to stressed teachers and low professional commitment, and still, teachers rely on the principal's help in an attempt to discipline a behaviorally disruptive child, and remove him from class (Yoon & Gilchrist, 2003). Removing disruptive children away from class is not a final solution. It is a relief for teachers, but it might put the child in a more complicated situation and instead of finding solutions to the main problem, more problems come up in the way and start accumulating both on the educational and psychological level.

Working Memory

According to Baddeley and Hitch (1974), working memory is the capacity to store and manipulate information over a short period of time (Alloway, Gathercole, & Pickering, 2006; Baddeley, 1996; Baddeley, 2000; Baddeley & Duncan, 1998). Goleman (2005), states that the term *working memory* is used by neuroscientists to address the capacity of attention that the mind can hold for essential facts to

complete a given problem or task, whether it is a simple task to be accomplished at home or a reasoning for problem solving on a test. Furthermore, strong emotions, such as anxiety or anger are capable of sabotaging the prefrontal lobe's ability to maintain working memory. This is why continually occurring "*emotional distress can create deficits in a child's intellectual abilities, crippling the capacity to learn*" (Goleman, 2005, p. 31). Thus, children with working memory problems also have difficulties in retaining information. So, these children are not learning during instruction time. They spend time in the classroom without real engagement, eventually exhibiting disruptive behaviors.

Overview of Working Memory

Working memory is a multicomponent system, which is responsible for providing temporary storage of information for a short period of time (Alloway et al., 2009a). Working memory is also a component of executive function, which is an umbrella term for different cognitive skills required for socially appropriate conduct and goal-directed activities that are needed to flexibly adapt in new situations which learning constitutes one of these situations (Jacobson et al., 2011; Kloo & Perner, 2008; Van der Ven et al., 2012). One formal definition of Executive function, it is "*a set of processes that all have to do with managing oneself and one's resources in order to achieve a goal. It is an umbrella term for the neurologically-based skills involving mental control and self-regulation."* (Cooper-Khan & Dietzel, 2008). Gioia, Isquith, Guy, and Kenworthy (2000), made a list of the components of the Executive function: Inhibition, Shift, Emotional Control, Initiation, Working memory, Planning/Organization, Organization of Materials, and self-Monitoring.

The initiated model of working memory was first proposed by Baddeley and Hitch in 1974; it consisted of three components, which are the central executive, the phonological loop, and the visuo-spatial sketchpad. Later, the episodic buffer was added to the model.

The central executive system controls limited attentional capacity, which in turn is responsible for information manipulation within the working memory. The central executive controls the phonological loop and the visuospatial sketchpad, which are two subsidiary storage systems. The phonological loop's responsibility is to store and maintain the information in a phonological form, and the visuospatial sketchpad's responsibility is to store and maintain spatial and visual information. The fourth added component, the episodic buffer, *"is assumed to be a limited capacity store that is capable of multi-dimensional coding, and that allows the binding of information to create integrated episodes"* (Repovš & Baddeley, 2006, p. 7). In a study by Gathercole, Pickering, Ambridge, and Wearing (2004), findings showed that the structure of the working memory remains consistent throughout development (Alloway et al., 2006), but later a study by Evans & Schamberg (2009) showed that childhood poverty is a great contributor in working memory deficiency, and the authors stated in the findings that the greater the time of poverty is during childhood from birth until the age of 13 years, the worse the working memory in the life of a young adult.

Working Memory and Learning

Working memory has a limited capacity, which varies greatly between individuals, and it is closely associated in childhood with learning disabilities (Alloway et al., 2009a). A great body of research recognizes that in kindergarten, the cognitive development incorporates children's memory skills, various learning strategies, and kindergarten academic structure, specifically language arts, mathematics, and science (Alloway, 2011; Alloway & Alloway, 2010; Alloway et al., 2010; Alloway, Gathercole, Adams, Willis, Eaglen, & Lamont, 2005; Alloway et al., 2006; Archibald & Gathercole, 2006; Chrysochoou & Bablekov, 2011; Elliott et al., 2010; Smith & Ray, 2010). Thus, there's a strong link between working memory and learning. Working memory is associated with performing and remembering classroom and teachers' instructions (Engle et al., 1991), organizing and planning information (Alloway, Gathercole, Holmes et al., 2009b), problem solving (Swanson, Jerman, & Zheng, 2008) and keeping track and progress in increasingly complex tasks Alloway et al., 2006). Consequently, working memory impairments are associated with low learning outcomes and constitute a high risk for educational underachievement for children (Alloway et al., 2005).

Working Memory and Inattentive Behavior

Poor working memory has been greatly associated with inattentive behavior in particular and disruptive behaviors and behavior problems in general (Alloway & Alloway, 2010; Alloway, Elliott, & Place, 2010; Alloway et al., 2009a; Mulder, Pichford, Pichford & Marlow, 2011; Vuontela, Carlson, Troberg, Fontell, Simola,

Saarimen, & Aronen, 2013). In a study including a group of children with ADHD and a group of students with low working memory showed that behavioral inhibition of children with ADHD appears to have impact on working memory in the classroom (Alloway, Gathercole, Holmes et al., 2009b). In a comparison study between working memory and IQ, findings showed that working memory has a relation to mind wandering as well as self-discipline, which can greatly affect academic performance and can produce disruptive behaviors (Alloway & Alloway, 2010). Deficits in children's learning abilities are not always detected by IQ tests (Goleman, 2005). Thus, students who are inattentive and show overactivity in the classroom and give hard time for teachers are in fact incapable of learning due to their working memory impairments, and they are left undetected. Usually, these students are referred to clinicians to be assessed for IQ.

In a study on primary school boys who had over average IQ scores and who were achieving poorly at school, were found to be often impulsive, disruptive, and anxious, and in trouble through neuropsychological tests, and despite their intellectual potential, these children seem to be at highest risk for academic failure due to their lack of control and impaired emotional life. Apparently, students with working memory problems suffer from anxiety and stress. Additionally, and according to Shaughnessy & Moore (2014), Alloway states the following:

> …think of test anxiety or math anxiety—you may have a student with an average orking memory that should do well on that math test if they have that mathematical knowledge in place. However, if they have test anxiety or math anxiety, that could use up some of their working memory resources, which could then jeopardize their performance in the math test, so that's one theory

of how anxiety and working memory work together, if you will, work against each other when it comes to different kinds of classroom situations (p. 288).

It is also known that students with attention deficit/hyperactivity disorder (ADHD) have behavioral and attention problems in addition to working memory problems and put together, these problems add to impairment in learning (Shaughnessy & Moore, 2014).

Working Memory and IQ

In an interview with Alloway, she mentions that working memory shows how students learn and process information whereas IQ shows what they have learned (Shaughnessy & Moore, 2014). For educators, to rely on IQ scores whether verbal or non-verbal is not enough to predict learning outcomes for students with poor working memory, what is needed is a look at their working memory to find out how well these students are actually able to work with the given information (Shaughnessy & Moore, 2014).

Working memory and IQ are distinct cognitive skills even though they share psychometric properties (Alloway, 2011). Assessing working memory can be as early as the kindergarten period, provided the existence of specialists with effective assessment tools to identify at risk-children who might develop learning difficulties and behavioral problems (Alloway & Alloway, 2010; Alloway et al., 2010; Chrysochoou & Bablekou, 2011).

The aim of the current study is to investigate how teachers perceive students with disruptive behavior and poor working memory through the evaluation of their

social/behavioral competence and whether teachers are accurately assessing social/ behavioral competence of these students through their own observations and reports.

The Lebanese Context

To understand the reason behind any troublesome behavior, students need to be diagnosed for early intervention (Ciccantelli &Vakil, 2011). It is hard and challenging to diagnose children with disruptive behaviors, because the symptoms can vary depending on the situation (Alloway et al., 2009a) and teachers in general are incapable of giving the right diagnosis objectively, but formal assessment can. Teachers sometimes depend on checklists to guide them into identifying certain educational problems. In a study by Alloway, Gathercole, Holmes et al., (2009b), teachers rated a child with disruptive behavior as both inattentive and hyperactive, in spite the absence of attention problems on the part of the child. As a conclusion, the way these teachers are using checklists is still inaccurate, and such evaluations are prone to negative halo effect (Alloway, Gathercole, Holmes et al., 2009b), and children with real working memory may pass undetected using only teachers' reports and observations (Alloway et al., 2009; Alloway, Gathercole, & Elliott, 2010), in the absence of proper diagnosis conducted by specialists.

In Lebanon, some schools lack the resources to diagnose children and are in turn detected informally, through teacher observations. While considering students with poor working memory, these children lag behind their peers if prevented from appropriate intervention because low working memory is associated with poor learning outcomes and inattentive behavior (Alloway et al., 2009a; Aronen, Vuontela, Steenari, Salmi, & Carlson, 2005; Elliott et al., 2010;) misleading them to special education referral.

Chapter Three

Methodology

Research Design

The current study used a mixed methods approach to investigate perceptions of teachers on students with poor working memory and disruptive behavior. Interviews were used to understand how teachers perceive these students and how they approach them.

Sample

Contact was made with principals of 7 private schools. Four schools gave consent to participate in the study after being informed about the research study. Parent letters were sent for consent explaining the nature of study. A random sample of first to third graders were selected from participating schools, excluding special education students since they are enrolled in special programs, and the rest of the regular students participated based on their parents' consent (Fraenkel, Wallen, & Hyun, 2012). Students were informed about the study and the respective tasks to be administered.

School 1 is a small nonsectarian school located in the city of Beirut, and encourages diversity and embraces special needs programs for children with learning difficulties and physical disabilities. Some special students are in self-contained classrooms where they follow special programs. Others are either in the resource room where they attend for special lessons but go back to their grade class, and some are in full inclusion either alone once they become autonomous in self-care and if they become capable of coping with class level either alone or accompanied by

support teachers. The number of participants from this school was 13 students (11.30%) from grades 1 to 3 and 3 teachers.

School 2 is located in the city of Beirut, encourages religious teaching, national activities and competitions, and embraces a limited number of students with special needs, namely the students they can cater for and later include in the regular class programs. School 2 provides special teaching hours for the students with learning difficulties with special teachers in the learning center. The total number of participants from this school was 36 students (31.30%) and 3 teachers from grade 1 to 3.

School 3 is located in the suburb of the city of Beirut. This school is an elementary school that does not include special need services. All students follow the same regular Lebanese curriculum. School 3 withholds a day care center for infants and toddlers who later enroll to preschool then to cycles 1 and 2 eventually. The total number of participants this schools was 30 students (26.09%) and 3 teachers from grade 1 to 3.

School 4 is located in another suburb of the city of Beirut. School 4 also caters for children with special needs and empowers them with individual accommodations tailored to their needs through special programs in separate classrooms within the school setting and children with minor learning difficulties go to the special programs for support. These children vary in their learning difficulties but most of them were enrolled to the special program because of behavioral problems. The total number of participants from this school was 36 students (31.30%) and 3 teachers from grade 1 to grade 3.

Students

The participants were (*N=115*) regular students (males = 63; females = 52) from 4 schools in the city of Beirut and the suburbs, from first to third grade (Table 1). The mean age was 6.47 years (*SD* = 0.90). Students with special needs were excluded from the study since they have been classified and already follow special programs in special classes. Schools 1 and 2 are located in the city of Beirut, and Schools 3 and 4 are located in the suburbs. The majority of the participating students were from middle-upper socioeconomic backgrounds. All of the students were Lebanese with Arabic as their native language except for one student who was Turkish but born and raised in Lebanon; he spoke Arabic in the Lebanese dialect and was well accustomed to the Lebanese culture.

Table 1.
Gender, Age, Grade-level, and School Demographic Characteristics

		School 1		School 2		School 3		School 4	
		N	%	N	%	N	%	N	%
Gender	Boys	8	61.54	17	47.22	18	60.00	20	55.56
	Girls	5	38.46	19	52.78	12	40.00	16	44.44
Age	6 years	2	15.38	6	16.67	15	50.00	9	25.00
	7 years	5	38.46	19	52.78	6	20.00	13	36.11
	8 years	4	30.77	9	25.00	8	26.67	11	30.55
	9 years	2	15.38	2	5.56	1	3.33	3	8.33
Mean (SD)		7.46 (0.96)		7.19 (0.79)		6.83 (0.95)		7.22 (0.93)	
Grade	Grade 1	3	23.08	9	25.00	13	43.33	14	38.89
	Grade 2	4	30.77	17	47.22	10	33.33	10	27.78
	Grade 3	6	46.15	10	27.78	7	23.33	12	33.33

Teachers

Twelve teachers participated in this study; 3 teachers from each school, and each teacher represented a grade level and completed 3 scales. While the researcher wanted to recruit 1-3rd grade homeroom teachers, none of the participating schools had homeroom teachers; therefore the school principals assigned the "advisor" of each class from grade 1 to 3. Participating teachers were Lebanese female teachers who taught English, remedial English for special students, Math, Science, and Social studies for several grades. Their ages ranged from 22 to 46 years of age with teaching experience that ranged from 2 to 12 years. These teachers held Bachelor of Arts in Education, Sociology, Math, and Science from the Lebanese University, the Lebanese American University (LAU), the American University of Beirut (AUB), the Arab University, and the Lebanese International University (LIU).

Instruments

Using a mixed methods approach provided a more comprehensive understanding of the research problems rather than having used each of quantitative or qualitative alone, allowing for a more holistic analysis of the study (Fraenkel et al., 2012). The following instruments were administered:

The Digit Memory Test (DMT). The Digit Memory Test (Turner & Ridsdale, 2004), measures the verbal working memory ability. It is an assessment for specialized teachers to investigate memory difficulties in the process of children's learning (Turner & Ridsdale, 2004), especially verbal memory. The digits require the student to repeat numbers in serial order in both the forward and the backward parts (Archibald & Gathercole, 2006). It contains two parts: the digits forwards and

the digits backwards. In the digits forwards, the student is told to listen to a series of numbers and is asked to repeat them back in the same order. Each number is one second apart and said in a monotone voice. The digits forwards contain a set of 9 series. The digits backwards contain a set of 7 series. The first series contains 2 digits and they continue to increase until 8 digits per series. In the digits backwards, the student is asked to repeat the numbers backwards in the series. The test takes around 5 minutes to administer, and it doesn't require extensive training, it is effective in identifying cognitive concerns and it is suitable for language and multiple cultures.

The Student-Teacher Relationship Scale (STRS). The Student Teacher relationship Scale (Pianta, 2007) was developed to measure teachers' perception of their relationship with their students from preschool through Grade 3. STRS measures student-teacher relationship in terms of closeness, conflict, and dependency. The STRS is a self-report instrument which consists of a 28-item scored on a 5-point scale to indicate the student's interactive behavior with the teacher, and the teacher's beliefs about the student's feelings toward his/her teacher on a scale from 'Definitely does not apply' (1), to 'Definitely applies' (5). Some of the items included are: "I share an affectionate relationship with this child." "This child spontaneously shares information about himself/herself." "Dealing with this child drains my energy." STRS needs 15-20 minutes to of administer by the teacher. High reliability estimates have been found ranging from r = .76-.92 on a subsample of 24 kindergarten teachers. The STRS has also shown good internal consistency with Cronbach's alphas ranging from .64-.92 on the same subsample.

The Teacher-Child Rating Scale (T-CRS). The Teacher-Child Rating Scale (Perkins & Hightower, 2000) was developed from two social skills scales: The Health Resource Inventory and Classroom Adjustment Rating Scale. T-CRS is a 32-item instrument for a teacher to complete on a 5-point scale to measure four aspects of social-emotional behaviors and approaches to learning: Task orientation, Behavior control, Assertiveness, and Peer Social Skills, on a scale from 'Strongly Disagree' (1), to 'Strongly Agree' (5). Examples of the item included in T-CRS are: "Defends own views under group pressure" "Disturbs other while they are working" "Underachieving (not working to ability)" A study on validation of T-CRS showed high internal consistency, with Cronbach's alphas ranging from .85-.95, and 10 and 20-weektest-retest coefficients ranging from .61to .91.

The Behavior Rating Inventory of Executive Function (BRIEF). BRIEF (Gioia et al., 2000) assesses the associated difficulties with executive function in the school context (Alloway, Gathercole, Kirkwood, & Elliott, 2009). BRIEF is a form containing 86 brief item descriptions of the student's behavior problems, on a scale ranging from never (N), sometimes (S), to often (O). Examples of some items included in BRIEF are: "Resists or has trouble accepting a different way to solve a problem with schoolwork, friends, chores, etc." "Does not notice when his/her behavior causes negative reactions" "Has trouble thinking of a different way to solve a problem when stuck". Test-retest correlations reported for a 41 children sample were as follows across the 8 subscales: shift (.83), inhibit (.91), emotional control (.92), working memory (.87), initiate (.92), plan/organize (.88), self-monitor (.87), and organization of materials (.83).

Teacher Interview Questionnaires.

1. How do you define Disruptive Behavior?
2. How does a student's disruptive behavior affect class environment?
3. What consequences do you implement to adjust a student's disruptive behavior?
4. How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?

Procedures

Approval from the Institutional Research Board (IRB) at the Lebanese American University (LAU) was obtained. Official documentation of the approved Committee on Human Subjects on Research (CHSR) was presented to the principals of the target schools. After the principals received the documentations, each gave a written consent to allow their students and teachers to participate in this study. Teachers also gave consent to complete the scales, and finally a letter was sent to parents including a brief description of the nature of the research study, in an attempt to get consent to their children's participation. Schools that already had a mutual agreement with parents to allow research on their premises provided a written document addressed to IRB.

Date and time of visits to schools were scheduled upon agreement with the administration of each school. Administration of the Digit Memory Test took around 3 to 5 minutes for each student in a quiet room in each school. Interviewing each teacher took 15 to 20 minutes. Two visits were scheduled for School 1. The first visit was for testing students and that was done in two hours, and the second visit for

an hour and a half to interview teachers. In School 2, three visits were scheduled for two hours per visit and each time one teacher was interviewed. One visit was scheduled for School 3 where interviews and testing was done for four hours. Finally, for School 4, testing and interviewing were scheduled for two days for two and half hour per visit. The total testing time was around 18 hours for 9 separate days. Considerations were taken for students not to miss instruction hours for main subjects such as Math, English, or Arabic, or miss recess. The students were taken out of class during Art, Music, or Physical Education hours.

Teachers completed 3 scales for each student and answered 5 questions in an interview conducted by the researcher. For interviews, each teacher was appointed a 15 minutes time with the researcher by school's administration. Teachers were explained the type and nature of research and the content of the scales. Appointments were scheduled at convenient times suitable for each teacher's time schedule, except for School 4; they insisted that students' test and teachers' interviews be conducted in one single visit. Scales were completed by teachers and delivered to the researcher in sealed envelopes.

Upon submission the envelopes to the researcher by the administrations of schools, names were deleted and replaced with an ID number for each student participant, and data entries were done using SPSS (version 20).

Data Analysis

To examine the hypotheses, statistical analyses were conducted using SPSS (version 20). A T-test analysis was run to compare two means of the independent

and dependent variables. These two tests were applied because the subscales are ordinal variables.

Teachers were interviewed and completed three scales: STRS scale was completed to assess their student-teacher relationships, T-CRS was completed to assess teachers' perception of students with poor working memory who exhibit disruptive behavior, and BRIEF scales to assess students' behavioral difficulties associated with poor working memory. Students were assessed for working memory using DMT.

In reviewing the interviews, the researcher looked for common key words for each of the 4 questions. The purpose was to find key linkages. During data collection and analysis of interviews the researcher:

i. Collected for common descriptions in key terms
ii. Gathered data that were related to teachers' perception and defining disruptive behavior
iii. Made categorization of similar descriptions and definitions

This chapter included the description of research design of the study, the instruments used to collect data, how students were chosen, and how analysis of data was done. The researcher worked with 6 primary female teachers, and assessed 115 students (63 girls and 52 boys) from grade 1 to 3 in 4 schools. Each participant was met one time upon meeting scheduled by the administration of each school.

Chapter Four

Results

In this chapter, the results of the study are revealed. The chapter presents results of the 3 research questions including tables showing correlations between the variables, in addition to results of interviews.

Research Question 1:

To answer the first question "Is there a relationship between working memory and disruptive behavior?" Pearson correlation was run between *working memory* and *disruptive behavior*. Results revealed that students with poor working memory exhibit disruptive behavior.

DMT & BRIEF.

Table 2 below shows negative correlations found between DMT and BRIEF *working memory* subscale. For DMT Forward (r= -.21), DMT Backward (r= -.27), DMT Total Forward and Backward (r= -.32), where attention and verbal memory are combined. The strongest negative correlation was found in DMT Standard Score (r= -.41).

Table 2.
Correlations between working memory and disruptive behavior using DMT components and
BRIEF subscales

	Forward	Backward	Total	Standard	Percentile
Inhibit	-0.17	-0.18	-0.24	-0.30	-0.27
Shift	-0.13	-0.22	-0.20	-0.30	-0.31
EmotionalControl	-0.03	-0.14	-0.07	-0.20	-0.21
Initiate	-0.18	-0.33	-0.33	-0.40	-0.39
Working memory	-0.21	-0.27	-0.32	-0.41	-0.38
Plan/Organize	-0.19	-0.34	-0.34	-0.42	-0.40
Org. of Materials	-0.12	-0.17	-0.19	-0.31	-0.29
Monitor	-0.20	-0.34	-0.34	-0.39	-0.38

Org. of Materials=Organization of Materials

Research Questions 2:

To answer the second question "Can poor student-teacher relationship lead to disruptive behavior?" Pearson correlation was run between *student-teacher relationship* and *disruptive behavior* and results showed that poor student-teacher relationship leads to disruptive behavior.

STRS & BRIEF.

Table 3. shows a negative correlation between "Closeness" and *working memory* (r= -. 46), weak positive correlation between "Conflict" and *working memory* (r= .37), positive correlation between "Dependency" and *working memory* (r= .41), and negative correlation between STRS Score and *working memory* (r= -.55).

Table 3.
Correlations between student-teacher relationship and disruptive behavior using STRS subcomponents and BRIEF subscales

	Closeness	Conflict	Dependency	STRS Score
Inhibit	-0.46	0.52	0.22	-0.60
Shift	-0.38	0.50	0.44	-0.62
Emotional Control	-0.35	0.63	0.40	-0.68
Initiate	-0.44	0.38	0.38	-0.54
Working memory	-0.46	0.37	0.41	-0.55
Plan/Organize	-0.40	0.39	0.41	-0.55
Org. of Materials	-0.46	0.42	0.20	-0.53
Monitor	-0.53	0.45	0.27	-0.60

Org. of Materials=Organization of Materials

Research Question 3:

To answer the third and final question "Is there an association between teachers' perception of disruptive behavior and students who exhibit disruptive behavior with poor working memory?" Pearson correlation was run between *teacher's perception of disruptive behavior* and *student disruptive behavior*, and *teacher's perception of disruptive behavior* and *poor working memory.* Results show that teachers' perception of disruptive behavior is not associated with students who exhibit disruptive behavior and who have poor working memory. DMT Forward is related to attention, preliminary results showed no significant differences with gender, age and school.

For DMT Backward, which is related to verbal memory, no significant gender differences were found, but significant differences were marked for age (p=.026<α), grade level (p=.000<α), and school (p=.013<α). As can be seen, contrary to attention, poor working memory directly affects verbal learning and can be detected across the grade level years but not through gender.

T-CRS & BRIEF.

Results show strong negative correlation between how teachers perceive disruptive behavior and students with poor working memory who exhibit disruptive behavior in Task orientation (*r*= -.854) and Assertiveness (*r*= -.712), and weak correlation in Behavior Control (*r*= -.385).

Table 4.
Correlations between teachers' perception of disruptive behavior using T-CRS subcomponents and BRIEF subscales

	Inhibit	Shift	EC	Initiate	WM	Plan/Org	Org/Mat	Monitor
Task Or	-0.51	-0.70	-0.52	-0.84	-0.85	-0.85	-0.62	-0.70
Beh Ctrl	-0.60	-0.50	-0.57	-0.44	-0.39	-0.40	-0.38	-0.50
Assert	-0.33	-0.59	-0.40	-0.74	-0.71	-0.69	-0.49	-0.56
PSS	-0.63	-0.70	-0.64	-0.70	-0.72	-0.71	-0.63	-0.75

EC=Emotional Control; WM=Working memory; Plan/Org=Plan/Organization; Org/Mat=Organization of Materials; Task Or=Task Orientation; Beh Ctrl=Behavior Control; Assert=Assertiveness; PSS=Peer Social Skills

T-CRS & DMT.

Results show that "Assertiveness" was negatively correlated with DMT Forward (*r*= -.18), DMT Backward (*r*= -.25), and DMT Total (*r*= -.28). "Task orientation" was negatively correlated with and DMT Backward (*r*= -.26), and DMT Total (*r*= -.71). "Peer Social Skills" was negatively correlated with DMT Backward (*r*= -.71) and DMT Total (*r*= -.71). No correlations were found between "Behavior al Control" and all of DMT subcomponents.

Table 5.
Correlations between teachers' perception of disruptive behavior and working memory using
T-CRS components and DMT components

	Forward	Backward	Total	Standard	Percentile
Task Or	0.18	0.26	0.29	0.40	0.37
Beh Ctrl	-0.04	-0.05	-0.02	0.18	0.16
Assert	0.18	0.25	0.28	0.36	0.33
PSS	0.14	0.19	0.19	0.30	0.30

Task Or=Task Orientation; Beh Ctrl=Behavior Control; Assert=Assertiveness; PSS=Peer Social Skills

Teachers' Interviews

Results of teacher interviews about defining disruptive behavior showed variation in answers by each of the twelve teachers. Teachers gave personal opinions on apparent behavior characteristics without profound understanding of the reason behind the occurring actions and as expected; they gave general labels based on their own assumptions of the disruptive behaviors such as hyperactivity, misbehavior, disorganization, home problems, parent neglect, and short memory.

Some teachers blamed disruptive behavior on parents and school administration. They claimed that no intervention is possible without school support, and parents are neglecting their children. One teacher only gave several suggestions away from judgmental reasoning on why a student might be disruptive, and concluded that as a teacher she should understand his situation before she intervenes to take appropriate measures. This same teacher was always referring to her background in education at university and how she works on creating balance between theoretical work and professional practice.

When it came to controlling disruptive behavior in the classroom, all teachers mentioned that they conduct their own research, educating themselves and their

interventions and attempts to deal with children with disruptive behavior based on trial and error. Every teacher showed a different approach in taking assertive decisions toward stopping disruptive behavior during instruction time based on their own style and background regardless of relevance or irrelevance of the content.

One teacher acknowledged her lack of expertise in counseling claiming: "*I'm not specialized in the field of behavior therapy so I need support for some interventions – I search for solutions but it is like digging in sand – I need a specialist to guide me – consultancy will cut it short because my attempts do not always work."* Another teacher states: "*I work with certain behavioral cases but sudden emergencies at home interrupt my work only to find myself starting all over again – in this case I suggest referral to a specialist for an IQ test."*

As for defining working memory, most of the teachers related it to short term and long-term memory; some didn't know about it, and surprisingly others claimed that nothing such as working memory exists.

Moreover, the interviews revealed that teachers are not resourceful in finding real solutions for students with disruptive behavior and poor working memory, and schools have no specific implemented strategies for behavior correction. The current findings are discussed in the following section.

Chapter Five

Findings Conclusions and Recommendations

The aim of the current study was to investigate teachers' perceptions of students with disruptive behavior and poor working memory; this was achieved through evaluations of student's social/behavioral competence using various instruments that assess students' working memory, student-teacher relationship, and teachers' perception on disruptive behavior in addition to interviews with teachers. Of further interest was to see whether teachers accurately assess student's social/ behavioral competence through their own observations and reports.

The current study proposed three hypotheses: (1) poor working memory leads to disruptive behavior; (2) poor student-teacher relationship leads to disruptive behavior; (3) teachers' perception of disruptive behavior is not associated with students with poor working memory who exhibit disruptive behavior.

Working memory and Disruptive Behavior

The findings from the current study showed that poor working memory is negatively correlated with disruptive behavior as supported by current data results, and three findings were revealed supporting this first hypothesis.

In the current research, we investigated the students' clear and efficient use of relevant information in their learning experiences at school through observations during the DMT assessment performance. The DMT includes two parts: the digit forward and the digit backward. These two measures are commonly used to assess working memory's capacity.

The digit forward span measures attention, where the subject participant is required to store and reproduce the stored material without the need to transform it mentally; whereas, the digit backward measures verbal-memory and requires remembrance of the stored information and reversal of sequence; thus forming a challenging mental activity.

The first finding revealed negative correlation between *attention* and *working memory*. Considering these two variables, *attention* and *working memory* are related as such, forming an overlap of information processing which is clearly revealed by constant increase of relevant over irrelevant information (Awh & Jonides, 2001; Awh, Vogel, & Oh, 2006; Fougnie, 2008).

Teachers are usually troubled by students' lack of attention and for them this was seen as the sole factor they identified when students fail to follow instructions. What they don't realize is the presence of working memory as an overlapping factor which can cause failure in following instructions which often goes undetected in the classroom. Consequently, students become wrongly classified as having attention failures such as "being easily distracted" or "not listening" or even having lack of motivation such as "not interested"; whereas children with poor working memory usually start with a task at hand and then forget the main information needed to continue the activity (Gathercole & Alloway, 2008; Milton, 2008).

In fact, observations of students who were tested for DMT in the current research showed that some students could recall information faster than others or could retrieve acquired information differently from one another. This means that these students have the ability to pay attention to given instructions, but are unable to accomplish these instructions due to working memory problems. But, w*orking*

memory has a capacity limit which differs between individuals and it increases with time, due to carry out of mental processes by children until they reach the age of 14 and 15 where processing efficiency is at adult levels (Gathercole & Alloway, 2008). In fact, both authors state that the younger the children's age, the less the working memory capacity and vice versa.

While working memory is the temporary storage and manipulation of information (Alloway et al., 2009a), attention emphasizes efficient encoding of relevant information in spite of the overwhelming quantity of sensory information (Awh et al., 2006). These differences in definitions in working memory capacity and controlled attention explain why there are individual differences in school performance.

Unfortunately, teachers tend to compare differences in student performance in terms of scores, as reported in the teachers' interviews rather than seeing those differences in terms of various abilities. When students fail to maintain information in the working memory, information will be lost before they can be sent to long-term memory.

Therefore, when students lose information such as disciplinary rules and instructions, they will not abide by the teacher demands, and eventually lose motivation and, consequently, engagement in class activities that would eventually lead to class disruption (Alloway & Alloway, 2010; Alloway et al., 2010; Alloway et al.a, 2009; Mulder et al., 2011;Vuontela et al., 2013).

Teachers need to take into consideration that these children with poor working memory might not be students with special needs but rather require support

to help them minimize their struggle to meet every day demands of the classroom. They can do it through a variety of teaching strategies and techniques for students to receive proper learning, such as displaying picture cards to learn new vocabulary words with everyday rehearsal, or provide the student with the multiplication table for drill exercises to engage the student in class work, while providing him in parallel with special homework to enhance his learning of the multiplication table.

Proper learning allows information and material to be stored in the long-term memory. In fact, research conducted by Gathercole & Alloway (2008) shows that working memory and long-term memory can work together and can contribute to less reliance on working memory given the limited capacity of working memory especially during the younger years. This happens through rehearsal, which boosts recall. When students rehearse their learning material at a young age, this strategy enhances accumulation of information increasingly with development.

In fact, working memory requires recollection of previous basic information, which forms the storage from which students can build their new learning. This statement is supported by Cowan (as cited by Awh et al., 2006) "*who offers the view that the contents of working memory are best understood as "activated" representations from within long term memory that are currently within the focus of attention"* (p. 201) due to manipulation of information within a limited time span (Alloway et al., 2009a).

Thus, it requires considerations to students' early developmental stage of growth by teachers, and to consider the differences in working memory capacity among students. Teachers should be ready to provide students with differentiated instruction tools for support and possible preventions of learning gaps and ensure

proper learning. This step might prevent further complications and might stop regressive performance with some students. Should working memory problems remain unresolved with other students, then diagnosis is suggested through specialists in the field of educational therapy.

The second finding reveals also a negative correlation between *verbal memory* and *working memory*.

Verbal memory depends on the incorporation of children's memory skills along with various learning strategies in their cognitive development of a typically developing child, that sets the base for basic learning (Alloway, 2011; Alloway & Alloway, 2010; Alloway et al., 2005; Alloway et al., 2010; Alloway & Pickering, 2006; Archibald & Gathercole, 2006; Chrysochoou & Bablekou, 2011; Elliott et al., 2010; Smith & Ray, 2010). In contrast, the absence of memory skills and learning strategies might hinder the verbal memory function. If teachers are unaware of this challenge, finding ways to support the child's learning process given this challenge then, becomes misdiagnosed as a child being disruptive. In this case, it is no longer a working memory problem, but rather the teachers' lack of awareness of the issue and their inability to appropriately support students' learning.

Therefore, this finding sheds light on many underlying factors leading to child's "disruptive behavior" suggesting that students detected with poor working memory and disruptive behavior are not properly learning in the first place. There is lack of awareness of the core issue of the existence of working memory that in turn has implications in the way children are taught. Children with working memory problems are assumed to be learning the same way as their fellow classmates, disregarding the real problems and thus missing out on opportunities to properly

diagnose the existing challenges; this in turn hinders the implementation of effective strategies to support children's learning.

Treating and teaching a child with working memory problems as any other regular child or student is developmentally inappropriate. In fact, research shows that it can cause more damage to the child than good (Alloway, 2011; Archibald & Gathercole, 2006); this is just how children are misdiagnosed leading to further related psycho social issues.

Furthermore, in the presence of a strong link between working memory and learning (Alloway et al., 2009a; Archibald & Gathercole, 2006; Chrysochoou & Bablekou, 2011; Gathercole & Alloway, 2008; Smith & Ray, 2010; Swanson et al., 2008) and since working memory is associated with classroom performance and remembering classroom and teachers' instructions, it is assumed that students are most probably not learning properly, because as it appears, there is no consideration for differences in learning among students.

According to Alloway et al. (2005) working memory impairments are perceived to be associated with low learning outcomes and therefore constitute a high risk for educational underachievement for children. Based on the findings related to verbal memory, this study emphasizes the importance of checking previous learning before concluding deficiency in working memory.

Eventually, psycho educational assessments are used to detect whether there are working memory problems or not, but since the current study investigated teachers' perception of students with poor working memory, effective teaching

strategies should be implemented before teachers proceed to special education referrals or IQ testing outside schools.

In fact, another interesting finding, based on the teacher interviews, was an overwhelming majority of teachers suggesting that disruptive students should be referred to specialists or IQ testing as a solution to their disruptive behaviors. Teachers mentioned that this only happens after several attempts to address disruptive behavior have been made and when there is no support from school administration or parents.

Note that no teacher suggested trying out differentiated instruction for any of the children who could potentially need it; the decision is based on an observed evident disruptive behavior without questioning the reasons as to why this might be happening. The teacher interviews further revealed that in general, teachers did not show clear behavioral strategies or classroom management, with the exception of one teacher. The others expected students to abide by their teaching methods, and to always respect the flow of classroom instructions regardless of children's learning difficulties that typically are identified as disruptive behaviors.

What most teachers in general are not aware of is that part of IQ scores relies on verbal skills. Therefore, results are not sufficient enough to examine what students know in the absence of proper learning, or in the existence of learning gaps; for example, Alloway (as cited by Shaughnessy & Moore, 2014) claimed that IQ shows what the students know in opposition to working memory, which indicates how students learn.

Thus, teachers need to develop further knowledge regarding working memory problems because chances are they will face similar cases in every class they teach. In addition, they need to realize that working memory problems have solutions that can be addressed inside the classroom even if diagnosis occurs through specialists. In the end, interventions are to be implemented by teachers through their daily interactions and close contact with students.

The third finding revealed another negative correlation between *verbal memory* and the subscales of the BRIEF assessment tool, namely *shift, initiate, plan/organize*, and *monitor* along with *working memory* as they are all different cognitive skills of executive functions. Executive function is used to describe the categories or cognitive skills necessary for goal-directed, purposeful activities, which in turn aid the student to plan, organize, reflect on, and persist to finish the work, and also it requires from the students to take decisions on a daily basis and to self-regulate his/her behavior (Cicantelli & Vakil, 2011; Jacobson et al., 2011; Kloo & Perner, 2008; van der Ven et al., 2012).

This study highlights the importance of working memory as an important component of executive functions. The term "executive functions" embraces behaviors that relate and/or affect learning, especially that disruptive behavior is exhibited by regular students and those with disabilities alike (Nahgahgwon et al., 2010).

With this in mind, when teachers suspect problems in attention or disruptive behavior, it is most probably due to problems in working memory. Thus instead of rushing to label the students as having ADD, ADHD, language impairment, or dyslexia among other labels' as these are considered to be secondary characteristics

of disorders on developmental disorders of learning (Gathercole & Alloway, 2008; Pickering, 2006), with no solid grounds to make such assessments, they are recommended to work on various teaching strategies in an attempt to support children. This then has implications on how teachers understand student's 'disruptive' behavior.

Eventually, this will lead to enhance teachers' (1) teaching strategies; (2) self-initiation and professional knowledge to address students' learning problems within the classroom context; and (3) follow up of learning outcomes in order to make sure that students are ready for new learning.

The second hypothesis examined the impact of student-teacher relationship on children's disruptive behavior. In the current research we investigated student-teacher relationship through teachers' perceptions of their relationships with their students. The STRS measures these relationships in terms of "conflict", "closeness", and "dependency". The findings from this study showed negative and positive correlations between student-teacher relationship and disruptive behavior, and three findings were revealed supporting this second hypothesis.

The first outcome for the second hypothesis revealed negative correlations between "Closeness" and all the BRIEF subscales: inhibit, shift, emotional control, initiative, plan/ organize, organization of materials, monitor, and particularly *working memory* (r=-.46). in this study we are discussing the correlation between "closeness" and *working memory* because the question of interest was to find out whether or not poor student-teacher relationship leads to disruptive behavior in the case of working memory problems.

A huge body of research emphasizes the important role of positive student-teacher relationships in the development of students' social, emotional, and academic competencies starting from preschool through elementary and middle school (Birch & Ladd, 1997; Bryan et al., 2004; Pianta 1999; Pianta & Walsh, 1996).

In the case of this study, findings are supported and further shed light on the great importance placed on the teacher as a major contributor to support and improve students' successful school life, particularly students in need of support. But this contribution is almost impossible in the absence of "closeness" between student and teacher. Subsequently, this leads children to lose their sense of trust and safety in the classroom and in turn, this is translated into less work and less cooperation by students, since they cannot count on their teacher to identify their problems to support them in the first place (Denham et al., 2003; Hamre & Pianta, 2001; Madill et al., 2014). This can further spiral into a vicious cycle where the student will experience negative reactions from teachers due to their weak school performance eventually leading them to disengage and lack in motivation in academics as well as lose their sense of belonging to school (Merritt et al., 2012; Myers & Pianta, 2008; Pianta & Hamre, 2005; Richardson and Shupe, 2003; Spilt et al., 2012; Yager et al., 2011/ 2012); in the absence of learning during instruction time therefore, these students eventually exhibit disruptive behavior.

Furthermore, current results show that lack of "closeness" between students and teacher might leads to *working memory* problems. This is probably due to anxiety caused by the lack of safety that could drift students' *attention* and focus away from class work. Thus, negative relationships with teachers will prevent students from regulating their emotions, and deprive them from connecting with

teachers on a more effective and productive level (Denham et al., 2012; Smith & Ray, 2010). Studies have shown that negative teacher child relations consequently, lead students to deal with emotional distress creating deficits in their intellectual abilities capable of hindering leaning capacities (Goleman, 2005), leading to school failure (De Lyssnyder, Koster & De Raedt, 2012; Hamre & Pianta, 2005; Myers & Pianta, 2008).

In fact, student-teacher relationship has an impact on all aspects of school experience according to Gehlbach et al., (2011). Other findings in this study reveal positive correlations between "conflict" and *working memory* (r=.37), along with *"*dependency" and *working memory* (r=.41). In fact, positive correlations are marked between "conflict" and "dependency" with all BRIEF subscales, with the highest correlation found between "conflict" and *emotional control* (r=.63); these categories are described as being cognitive skills required for appropriate social conduct and goal-directed activities that are needed to flexibly adapt to new situations with learning constituting as one of these situations (Jacobson et al, 2011; van der Ven et al, 2012).

Furthermore, we note that this finding suggests that academic improvement can be predicted based on student-teacher relationship. This is not surprising, since the educator is the one who facilitates and nurtures learning to students, and the approach can determine whether or not students are getting proper learning. But in this study, conflict and dependency on the teacher is revealed between students and teachers, which further affect the ability for students to control their emotions and eventually creating a disconnect between them. An important question is raised here:

Are these teachers aware of the educational damage caused to these students given the negative student-teacher relationship?

As a matter of fact, and based on teachers' interviews, teachers complained about the way students approach them. Almost all of the teachers mentioned that students sometimes do not like their teachers as reasons to why the students will not listen or comply; apparently teachers base their relationships with their students on an "either/or" relationship; whereas, more tolerance and effort should be put by teachers to make the relationship more productive and long lasting, taking into consideration the months spent at school in a single school year.

Also, based on the interviews, teacher's claimed that children's disruptive behavior stems from home; thus, relating it to domestic discipline; whereas, current research findings suggest that disruptive behavior sometimes is beyond simple discipline; rather, it strongly relates to social communication at school and to lack of organization on the students part (Dawson & Guare, 2004; Dietzel, 2008).

As previously mentioned, lack of organization is related to executive function skills, but social communication requires educators to reinforce it. Seemingly, teachers limit their role with students inside the classroom and specifically, during instruction time. Once the teaching session is over, they become detached from students. Thus the relationship revealed here is purely academic with very little, if at all, application of emotional and social approach to the children's challenges and if no effort is put by teachers to build a closer, conflict-free relationship and solid bonds, these students are prone to further regressive behavior. According to Richardson and Shupe (2003), dealing with students who have behavioral problems requires a lot of effort, mindfulness, and full awareness from teachers' side.

But teachers' responses here tend to show their detachment from the core reasons as to the children's behavioral problems when it comes to discipline and academic achievement. Some common responses were "*I keep the disruptive child busy – Whatever I do there's always a particular student who doesn't improve – If a disruptive student wants to speak, I postpone the talk until after the session – I place him at the library during recess time – I keep him busy during classroom time – I suggest rehabilitation".* And interestingly, research supports the fact that teachers rely on their personal feelings and emotions based on stress and frustration instead of professional objective judgment (Richardson & Shupe, 2003). But where does this lead the students?

It is evident here, that teachers vary in their ways and methods to calm the child down or redirect attention instead of investigating the core problems, either through their own tools such as meeting with parents, or simply in seeking to find practical solutions. Some teachers stated that the school's administration yield to parents' wishes instead of helping them seek solutions such as "*I try to set strict behaviors but the administration is afraid of parents' reactions towards these procedures because they are like customers and the administration seeks to please them".* Whether this statement is true or not, this particular teacher seems to put the blame on the administration as a final resort in spite of the presence of other alternatives and possibilities to find ways to help her students, but the question is: Does this teacher know how to implement behavioral strategies in an attempt to create closeness with the student? Future research is suggested to investigate whether or not teachers are following professional development seminars and

workshops to be aware on how to work on students behavioral issues, and whether these strategies are being implemented or not.

LeBlanc et al., (2007) claim that less educated and less experienced teachers tend to frequently report disruptive behavior, which indicates the tendency of giving biased reports. Teachers actually are relying on personal feelings and emotions out of stress; thus, acting judgmentally and unprofessionally (Richardson & Shupe, 2003).

So, we conclude that teachers relate to students based on their personal characteristics and temperament, even if we assume that administrations might be pressuring teachers in certain schools through exhausting them in extra duties; thus, future research is also suggested to investigate whether this is true or not (we mean the imposition of the administration), and whether it is actually affecting student-teacher relationship.

The strong correlation obviously marked by "conflict" and lack of *emotional control* is supported by Spilt et al., (2012), stating that negative student-teacher relationship tends to be characterized by conflict, helplessness and feelings of anger in teachers, assumingly because they can't control their temperament in the face of disruptive behavior. It is worthy of notice that the correlation was found in the four participating schools in spite of the variation in the number of participants. This finding clearly shows that poor student-teacher relationships hold the same characteristics across schools regardless of teachers' number of years of experience, university degrees, or socioeconomic status.

Consequently, poor student-teacher relationships not only leads to disruptive behavior based on the findings, but also, will contribute to school underachievement and eventually to learning difficulty, as one of the teachers mentioned: "*When they do not listen or abide by rules, we refer them to the special education program.*" These 'solutions' reveal lack of knowledge for the true needs of these children, reinforced by the lack of professional psychosocial and counseling support within the schools. This shows that special education programs differ across schools in Lebanon in the way educational strategies are implemented to address behavioral problems as compared to the actual practice of special education in general.

Also, and through observations conducted in the current study across the participating schools, we found that teachers see special education as a punishment for disruptive student rather than an alternative teaching approach to support children's learning and behavioral difficulties. Future research is also suggested to investigate special education practice across schools of Lebanon.

Thus, student-teacher relationship is critical (1) to form a safe haven for students; (2) enhance good social and communication skills and empower organization skills; and (3) motivate students for learning and work tasks.

The third and final hypothesis suggests no association between teachers' perception of disruptive behavior and students with poor working memory and who exhibit disruptive behavior as supported by data.

When teachers were asked: "How do you define working memory?" Teachers showed no clear understanding of what the term working memory indicates. For most of them, working memory relates to short term and long-term memory, and

surprisingly, some teachers in one particular school claim that there's no such thing as working memory. As for defining disruptive behavior, statements were based on teachers' personal information, observations, daily encounters with students inside the classroom, and apparent behaviors such as impulsive actions, lack of respect for teacher, constant laughter, chaos, and time wasting.

Furthermore, teachers tend to judge children's behavior and relate to their problems according to apparent behavioral outcomes in certain social situations. In fact, teachers tend to disregard their own contribution as educators in seeking solutions for these students. Teachers are entitled to find the reasons behind any behavior problem which stops the learning process of any student and help him/her enhance and regulate their emotions (Denham et al., 2012; Smith & Ray, 2010); instead, they simply report disruptive behavior and keep responsibility away from their boundaries; whereas, teachers are supposed to be the primary supporters for students before any other specialist is assigned. And, this support can lead to solving behavioral problems at early stages, provided that teachers are well prepared psychologically speaking.

But first, teachers need to understand themselves and the way they relate to others and seek to improve their intrapersonal skills in an attempt to deal with children without any emotional residues. Richardson & Shupe (2003), state that few teachers are capable of facing disruptive behavior calmly and reasonably. We noticed similar behaviors exhibited by teachers throughout different phases of the current research especially related to emotional control. In this case, we question teachers' executive function skills and working memory in particular in relation to emotional control.

Thus, future research is suggested to investigate the impact of teachers' lack of emotional control on students with disruptive behavior and its effect on working memory. It is expected that once they resolve emotional residues, or learn emotional control, then they can better understand the reasons behind students' behaviors and eventually create positive student-teacher relationships.

In this regard, research done by Dawson and Guare (2004) suggest for parents - and we suggest for teachers as well - to better understand their children's executive functions in terms of organization, flexibility, sustained attention among others, through testing their own executive functions. Such awareness might contribute to students' better social skills, school performance, and therefore better achievement. Because in spite of the absence of one unified definition for executive function, researchers have come to an agreement that it contributes to students' social and academic performance (Aron, 2008; Blankemeyer, Flannery, &Vazsonyi, 2002; Ciccantelli & Vakil, 2011; Dawson & Guare, 2004; Kloo & Perner, 2008; Landry, Miller-Loncar, Smith, & Swank, 2002; Wittke, Spaulding, & Schechtman, 2013). When teachers understand the categories and role of executive function skills, they can better plan behavioral accommodations to adjust students' disruptive behavior in the classroom, especially in schools where psychological support is lacking.

Thus, teachers can be better prepared to face challenges occurring in the classroom and ultimately they will (1) better relate to their students to create supportive student-teacher relationships; (2) they will create better judgments based on students' well-being away from biases; and (3) develop and acquire better knowledge and information on how to deal with defiant behaviors.

Limitations

It is important to state certain limitations after considering the findings. Data was only obtained from students and teachers from lower elementary grades. We would expect different findings should the study consider other grade levels such as upper elementary, middle school, and preschool for students and teachers. Difference in data is expected to be related to gender and age as these samples would have different developmental stages related to psychosocial factors. Also, the findings need additional research to determine generalizibility to other schools and other grade levels.

Also, parental involvement can add valuable resources and shed light on additional information needed to evaluate students' behavior outside the school context. This involvement would add value to investigate whether or not these children's disruptive behavior is based on real problems or simply as a student-teacher relationship outcome. In addition, it can help to decide on whether professional help is needed in terms of psycho educational assessment conducted by professionals in the field. Teacher-parent collaboration can enhance improvement and empowers students' sense of achievement.

Another important limitation of the present study was getting data from student scores. Based on a study conducted by Pianta et al., (1995), dysfunctional student-teacher relationship is related to conflictual and dependent student-teacher relationship in second grade (Blankemeyer et al., 2002) and it supports one of the findings in this study, whereas the first grade low competence couldn't be investigated or supported because most parents refused to share their children's

scores for confidentiality purposes. Awareness to parents in Lebanon is highly recommended to embrace the concept of research as a basic tool for student's life improvement at school and academic achievement, and for general education improvement in the country.

In addition, it is required from educators to understand and recognize that children with poor working memory face problems in the classroom, and thus home-school collaboration should be performed to seek solutions to help them.

Future Directions

This study sets the ground for further investigations regarding executive functions and disruptive behavior. In addition, early interventions for disruptive behavior can be critical in preventing negative relationships between students and teachers and improve school life and achievement (Carter & Van Norman, 2010; Mitchell, Bradshaw, & Leaf, 2010).

Furthermore, teachers are encouraged to follow professional development in their domain of teaching with students. It requires of them to be provided with and exposed to sufficient information about their students' particularly in social/emotional to give necessary help which in turn can lead them to be successful learners.

Also, proper diagnosis is needed in case teachers suspect uncontrollable cases. Collaborative efforts should be considered to implement diagnosis strategies whether inside the school or out with reliable experts specialized in psycho-educational therapy and treatment. These experts identify students' strengths and weaknesses and recommend services tailored to each case through individualized

education programs (IEP) to allow involvement of the student in the curriculum and offer them the needed progress (Ciccantelli & Vakil, 2011). In the absence of such services, teachers can accommodate teachings to students' needs within their own research and follow up with students.

Further research is suggested to explore more the subcomponents of executive function and the subcomponents of working memory in relation to learning and disruptive behavior (Holmes, Gathercole, Place, Alloway, Elliott, & Hilton, 2010; Klinberg, 2010). Getting to know how each subcomponent – or skill – functions, might contribute to help certain students through proper implementation on how they can think or behave differently (Dawson & Guare, 2009).

Recommendations

Teachers need practical solutions to support students with poor working memory and disruptive behavior in case of suspicion. Working memory propblems can be present when a child lacks the ability to follow two- or three-step directions in a complex task; whereas behavior problems can be detected when a child for example can't recover from a disappointment within a short time (Dawson & Guare, 2009) The authors suggested effective solutions to solve these problematic issues and offered designed checklists :"The executive skills questionnaire" (Dawson & Guare, 2009) suitable for all ages and grade levels, through which teachers can complete shortly after suspecting working memory problems and/or behavior problemsAfter score calculations, the checklists will reveal strength as well as weaknesses across various subcomponents of cognitive skills namely executive functions.

Strengths can be used to encourage children through practicing these skills allowing them to be active learners through interactive skills, and identify their weaknesses. Consequently, either tailored strategies can be applied in case teachers are capable of planning them, or most importantly, teachers will provide administrations and parents with reliable evidence of existing working memory problems or other behavior problems beyond school solutions, and suggest clinical referrals accordingly.

Conclusion

Despite the limitations of the current research study, findings of this research have important implications for teachers to improve their professional careers in an attempt to better understand reasons behind students with disruptive behavior. Results indicate that teachers across schools in Lebanon perceive disruptive behavior from the same perspective.

In the absence of strong correlations and since results do not indicate working memory failure, future research is suggested to allow educators in general and teachers in particular to allow for children's early detection of working memory deficiency for those who exhibit disruptive behavior. Some tools are available for teachers' usage without requiring psychometric training such as the Working Memory Rating Scale (WMRS) or the Automated Working Memory Assessment (AWMA) (Alloway, Gathercole, Kirkwood, & Elliott, 2008).

So, teachers need help to identify students' problems. Usually teachers give the responsibility to parents to go seek professional help from specialists outside school. Sometimes it takes longer than expected for parents to take initiative due to

lack of awareness and proper guidance, and time can be critical in detecting real problems and proceed with proper accommodations or interventions.

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Appendix A

The Digit Memory Test

DIGITS FORWARDS

Item	First trial	□ or X	Second trial	□ or X	Total
A	43		16		
B	792		847		
C	5941		7253		
D	93872		75396		
E	152649		216748		
F	3745261		4925316		
G	82973546		69174253		
H	246937185		371625948		
				Forwards score:	

DIGITS BACKWARDS

Trial one	□ or X	Trial two	□ or X	Total
83		29		
475		615		
2619		3852		
28736		59413		
624719		276391		
4183627		1586937		
52624197		94617385		
			Backwards score:	

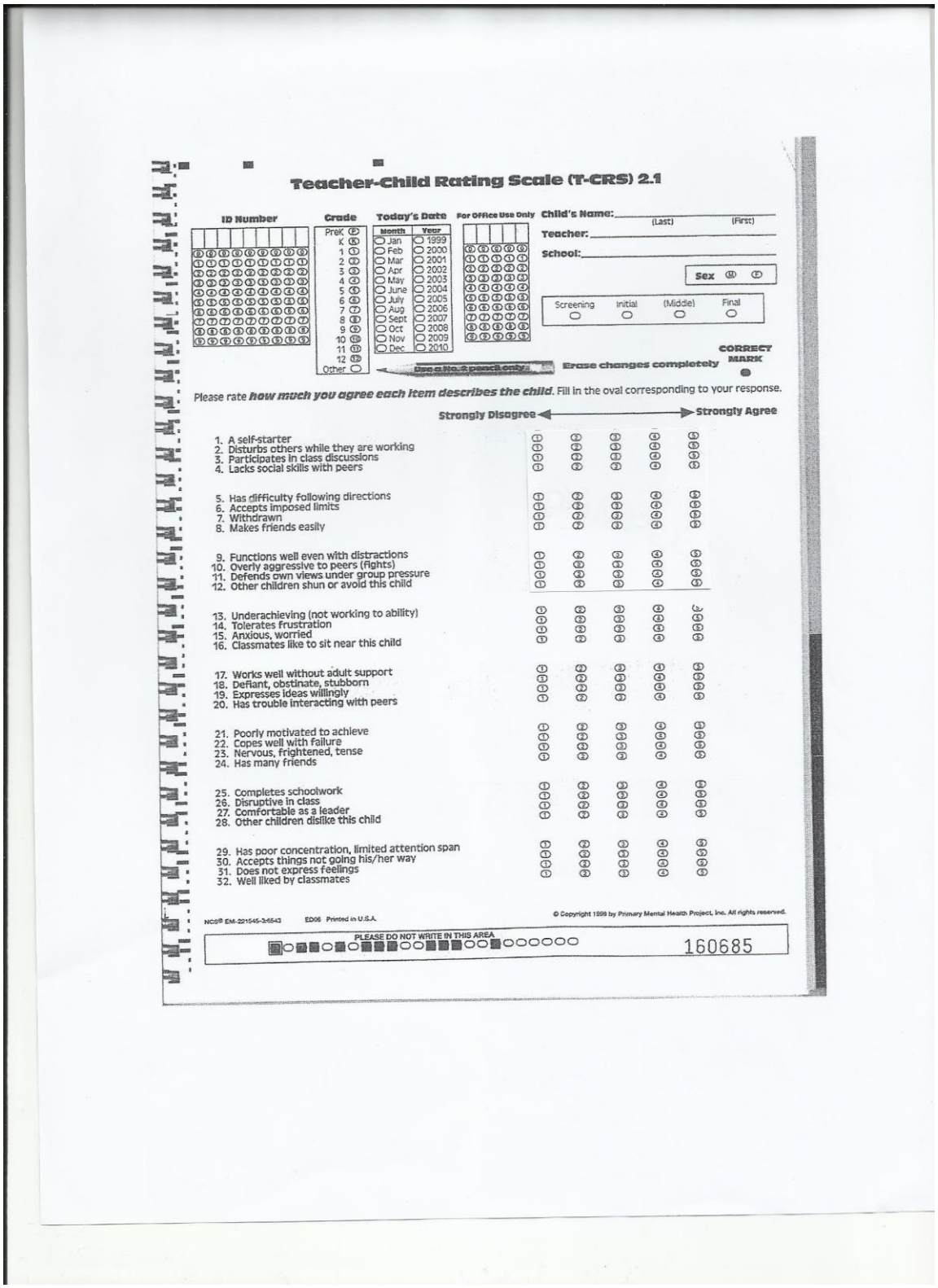
FINAL SCORE:

Total forwards and backwards:	
Standard score:	
Percentile equivalent:	

Martin Turner

Jacky Ridsdale

revised 6th October 2004



Teacher-Child Rating Scale (T-CRS) 2.1

ID Number | Grade | Today's Date | For Office Use Only

Grade: PreK, K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Other

Today's Date — Month: Jan, Feb, Mar, Apr, May, June, July, Aug, Sept, Oct, Nov, Dec; Year: 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010

Child's Name: _____ (Last) (First)

Teacher: _____

School: _____

Sex: M F

Screening | Initial | (Middle) | Final

Use a No. 2 pencil only. Erase changes completely. CORRECT MARK

Please rate *how much you agree each item describes the child*. Fill in the oval corresponding to your response.

	Strongly Disagree				Strongly Agree
1. A self-starter					
2. Disturbs others while they are working					
3. Participates in class discussions					
4. Lacks social skills with peers					
5. Has difficulty following directions					
6. Accepts imposed limits					
7. Withdrawn					
8. Makes friends easily					
9. Functions well even with distractions					
10. Overly aggressive to peers (fights)					
11. Defends own views under group pressure					
12. Other children shun or avoid this child					
13. Underachieving (not working to ability)					
14. Tolerates frustration					
15. Anxious, worried					
16. Classmates like to sit near this child					
17. Works well without adult support					
18. Defiant, obstinate, stubborn					
19. Expresses ideas willingly					
20. Has trouble interacting with peers					
21. Poorly motivated to achieve					
22. Copes well with failure					
23. Nervous, frightened, tense					
24. Has many friends					
25. Completes schoolwork					
26. Disruptive in class					
27. Comfortable as a leader					
28. Other children dislike this child					
29. Has poor concentration, limited attention span					
30. Accepts things not going his/her way					
31. Does not express feelings					
32. Well liked by classmates					

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PLEASE DO NOT WRITE IN THIS AREA

160685

Student's Name _____ Gender _____ Grade _____ Age_____ Birth Date ____/____/____

Your Name _____ Today's Date ____/____/____

Relationship to Child: ☐ Teacher Class Taught _____ ☐ Counselor ☐ Other _____

How well do you know this student? ☐ Not well ☐ Moderately well ☐ Very well Have known student for ____ months

N = Never S = Sometimes O = Often

1. Overreacts to small problems	N	S	O
2. When given three things to do, remembers only the first or last	N	S	O
3. Is not a self-starter	N	S	O
4. Cannot get a disappointment, scolding, or insult off his/her mind	N	S	O
5. Resists or has trouble accepting a different way to solve a problem with schoolwork, friends, chores, etc.	N	S	O
6. Becomes upset with new situations	N	S	O
7. Has explosive, angry outbursts	N	S	O
8. Has a short attention span	N	S	O
9. Needs to be told "no" or "stop that"	N	S	O
10. Needs to be told to begin a task even when willing	N	S	O
11. Loses lunch box, lunch money, permission slips, homework, etc.	N	S	O
12. Does not bring home homework, assignment sheets, materials, etc.	N	S	O
13. Acts upset by a change in plans	N	S	O
14. Is disturbed by change of teacher or class	N	S	O
15. Does not check work for mistakes	N	S	O
16. Cannot find clothes, glasses, shoes, toys, books, pencils, etc.	N	S	O
17. Has good ideas but cannot get them on paper	N	S	O
18. Has trouble concentrating on chores, schoolwork, etc.	N	S	O
19. Does not show creativity in solving a problem	N	S	O
20. Backpack is disorganized	N	S	O
21. Is easily distracted by noises, activity, sights, etc.	N	S	O
22. Makes careless errors	N	S	O
23. Forgets to hand in homework, even when completed	N	S	O
24. Resists change of routine, foods, places, etc.	N	S	O
25. Has trouble with chores or tasks that have more than one step	N	S	O
26. Has outbursts for little reason	N	S	O
27. Mood changes frequently	N	S	O
28. Needs help from adult to stay on task	N	S	O
29. Gets caught up in details and misses the big picture	N	S	O
30. Has trouble getting used to new situations (classes, groups, friends)	N	S	O
31. Forgets what he/she was doing	N	S	O
32. When sent to get something, forgets what he/she is supposed to get	N	S	O
33. Is unaware of how his/her behavior affects or bothers others	N	S	O
34. Has problems coming up with different ways of solving a problem	N	S	O
35. Has good ideas but does not get job done (lacks follow-through)	N	S	O
36. Leaves work incomplete	N	S	O
37. Becomes overwhelmed by large assignments	N	S	O
38. Does not think before doing	N	S	O
39. Has trouble finishing tasks (chores, homework)	N	S	O
40. Thinks too much about the same topic	N	S	O
41. Underestimates time needed to finish tasks	N	S	O
42. Interrupts others	N	S	O
43. Is impulsive	N	S	O

N = Never	S = Sometimes	O = Often
44. Does not notice when his/her behavior causes negative reactions	N	S O
45. Gets out of seat at the wrong times	N	S O
46. Is unaware of own behavior when in a group	N	S O
47. Gets out of control more than friends	N	S O
48. Reacts more strongly to situations than other children	N	S O
49. Starts assignments or chores at the last minute	N	S O
50. Has trouble getting started on homework or chores	N	S O
51. Mood is easily influenced by the situation	N	S O
52. Does not plan ahead for school assignments	N	S O
53. Gets stuck on one topic or activity	N	S O
54. Has poor understanding of own strengths and weaknesses	N	S O
55. Talks or plays too loudly	N	S O
56. Written work is poorly organized	N	S O
57. Acts too wild or "out of control"	N	S O
58. Has trouble putting the brakes on his/her actions	N	S O
59. Gets in trouble if not supervised by an adult	N	S O
60. Has trouble remembering things, even for a few minutes	N	S O
61. Work is sloppy	N	S O
62. After having a problem, will stay disappointed for a long time	N	S O
63. Does not take initiative	N	S O
64. Angry or tearful outbursts are intense but end suddenly	N	S O
65. Does not realize that certain actions bother others	N	S O
66. Small events trigger big reactions	N	S O
67. Cannot find things in room or school desk	N	S O
68. Leaves a trail of belongings wherever he/she goes	N	S O
69. Does not think of consequences before acting	N	S O
70. Has trouble thinking of a different way to solve a problem when stuck	N	S O
71. Leaves messes that others have to clean up	N	S O
72. Becomes upset too easily	N	S O
73. Has a messy desk	N	S O
74. Has trouble waiting for turn	N	S O
75. Does not connect doing tonight's homework with grades	N	S O
76. Tests poorly even when knows correct answers	N	S O
77. Does not finish long-term projects	N	S O
78. Has poor handwriting	N	S O
79. Has to be closely supervised	N	S O
80. Has trouble moving from one activity to another	N	S O
81. Is fidgety	N	S O
82. Cannot stay on the same topic when talking	N	S O
83. Blurts things out	N	S O
84. Says the same things over and over	N	S O
85. Talks at the wrong time	N	S O
86. Does not come prepared for class	N	S O

STRS Student-Teacher Relationship Scale™ Response Form

Teacher's name _____ Gender: M F Ethnicity _____ Date__/__/__

Child's name _____ Grade_____ Gender: M F Ethnicity _____ Age _____

Please reflect on the degree to which each of the following statements currently applies to your relationship with this child. Using the point scale below, CIRCLE the appropriate number for each item. If you need to change your answer, DO NOT ERASE! Make an X through the incorrect answer and circle the correct answer.

1 Definitely does not apply	2 Does not really apply	3 Neutral, not sure	4 Applies somewhat	5 Definitely applies

1. I share an affectionate, warm relationship with this child.	1	2	3	4	5
2. This child and I always seem to be struggling with each other.	1	2	3	4	5
3. If upset, this child will seek comfort from me.	1	2	3	4	5
4. This child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5. This child values his/her relationship with me.	1	2	3	4	5
6. This child appears hurt or embarrassed when I correct him/her.	1	2	3	4	5
7. When I praise this child, he/she beams with pride.	1	2	3	4	5
8. This child reacts strongly to separation from me.	1	2	3	4	5
9. This child spontaneously shares information about himself/herself.	1	2	3	4	5
10. This child is overly dependent on me.	1	2	3	4	5
11. This child easily becomes angry with me.	1	2	3	4	5
12. This child tries to please me.	1	2	3	4	5
13. This child feels that I treat him/her unfairly.	1	2	3	4	5
14. This child asks for my help when he/she really does not need help.	1	2	3	4	5
15. It is easy to be in tune with what this child is feeling.	1	2	3	4	5
16. This child sees me as a source of punishment and criticism.	1	2	3	4	5
17. This child expresses hurt or jealousy when I spend time with other children.	1	2	3	4	5
18. This child remains angry or is resistant after being disciplined.	1	2	3	4	5
19. When this child is misbehaving, he/she responds well to my look or tone of voice.	1	2	3	4	5
20. Dealing with this child drains my energy.	1	2	3	4	5
21. I've noticed this child copying my behavior or ways of doing things.	1	2	3	4	5
22. When this child is in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
23. This child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
24. Despite my best efforts, I'm uncomfortable with how this child and I get along.	1	2	3	4	5
25. This child whines or cries when he/she wants something from me.	1	2	3	4	5
26. This child is sneaky or manipulative with me.	1	2	3	4	5
27. This child openly shares his/her feelings and experiences with me.	1	2	3	4	5
28. My interactions with this child make me feel effective and confident.	1	2	3	4	5

LAU
الجامعة اللبنانية الأميركية
Lebanese American University

Institutional Review Board (IRB) لجنة الأخلاقيات

NOTICE OF IRB APPROVAL

To: Ms. Mirna Jrab
Advisor: Dr. Garene Kaloustian
School of Arts & Sciences

APPROVAL ISSUED: 3 Feb 2015
EXPIRATION DATE: 3 Feb 2016
REVIEW TYPE: EXPEDITED

Date: February 3, 2015
RE: ***IRB #:*** *LAU.SOAS.GK.3/Feb/2015*
Protocol Title: *Teachers' Perception of Students with Disruptive behavior and Poor Working Memory*

The above referenced research project has been approved by the Lebanese American University, Institutional Review Board (LAU IRB). This approval is limited to the activities described in the Approved Research Protocol and all submitted documents listed on page 2 of this letter. **Enclosed with this letter are the stamped approved documents that must be used. Please make sure to provide us copies of approvals from the schools.**

APPROVAL CONDITIONS FOR ALL LAU APPROVED HUMAN RESEARCH PROTOCOLS

LAU RESEARCH POLICIES: *All individuals engaged in the research project must adhere to the approved protocol and all applicable LAU IRB Research Policies. PARTICIPANTS must NOT be involved in any research related activity prior to IRB approval date or after the expiration date.*

PROTOCOL EXPIRATION: *The LAU IRB approval expiry date is listed above. The IRB Office will send an email at least 45 days prior to protocol approval expiry - Request for Continuing Review - in order to avoid any temporary hold on the initial protocol approval. It is your responsibility to apply for continuing review and receive continuing approval for the duration of the research project. Failure to send Request for Continuation before the expiry date will result in suspension of the approval of this research project on the expiration date.*

MODIFICATIONS AND AMENDMENTS: *All protocol modifications must be IRB approved prior to implementation, unless they are intended to reduce risk. Any protocol deviations without IRB approval must be reported to the IRB.*

NOTIFICATION OF PROJECT COMPLETION: *A notification of research project closure and a summary of findings must be sent to the IRB office upon completion.*

If you have any questions concerning this information, please contact the IRB office by email at christine.chalhoub@lau.edu.lb

Dr. Costantine Daher
Chair, Institutional Review Board

Institutional Review Board
Lebanese American University
03 FEB 2015
APPROVED

Lebanese American University FWA00014723
IRB Registration # IRB00006954 LAUIRB#1

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DOCUMENTS SUBMITTED:

Initial Protocol Application	Received 21 January 2015
Cover Letter	Received 21 January 2015
Digitspan	Received 21 January 2015
Letter to schools	Received 21 January 2015
Teachers Interview	Received 21 January 2015
STRS	Received 21 January 2015
Letter to Parents	Received 21 January 2015
Teacher's Intro	Received 21 January 2015
TCRS	Received 21 January 2015
BRIEF	Received 21 January 2015
NIH Training – Mirna Jrab	Cert. # 1429122 (Dated 15 March 2014)

LAU
الجامعة اللبنانية الأميركية
Lebanese American University

Chartered in the State of New York

To:
Address:
Beirut, Lebanon.

Date: / / .

Object: Consent to collect data for an LAU research study entitled "Teachers' Perception of Students with Disruptive behavior and Poor Working Memory".

To whom it may concern,

I am writing to request permission to be able to collect data from your school. My name is Mirna Jrab. I am a Graduate Student at the Lebanese American University (Department of Education) and would be visiting your facility only in order to complete a research project related to find the correlation between social/emotional problems and working memory.

The data collection will include two components:

Teachers:

The following instruments are to be filled by the homeroom teachers of Grade 1, 2, and 3.

- **The Student-Teacher Relationship Scale (STRS),** (Pianta, 2001). It takes between 15 and 20 minutes to fill out this questionnaire of 28 items.
- **The Teacher-Child Rating Scale (TCR-S),** (Hightower et al., 1986). It takes between 15 to 20 minutes to fill out this questionnaire of 32 items.
- **The Behavior Rating Inventory of Executive Function (BRIEF),** (Gioia, G. A., Isquith, P. K, Guy, S. C., & Kenworthy, L.). It takes between 30 and 40 minutes to fill out this questionnaire of 86 items.
- **Teacher's Interview.** I will be conducting a 10 minutes interview with homeroom teachers of Grade 1, 2, and 3, each according to teacher's free time at school.

Institutional Review Board
Lebanese American University
03 FEB 2015
APPROVED

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Students:

They will be asked to sit for The Digit Span Memory Test (Turner, M. & Ridsdale, J., 2004). The student will be asked to repeat digits count forwards and backwards in a sort of game with duration that ranges from 5 to 7 minutes inside a quiet place at school.

Also, a "Dear parent" letter will be sent for parents' approval of their children's participation in the research.

The research intends to cause no physical or psychological harm or offense and it abides by all commonly acknowledged ethical codes. Any collected data will be only under my personal surveillance. Once the questionnaires and the tests are collected, the names of the students will be replaced by ID numbers.

Please do not hesitate to contact me should you need any additional information.

Sincerely yours,

Mirna Jrab, Principal Investigator

Graduate student
School of Arts & Sciences
Department of Education
M. 03-337468
E-mail: mirna.jrab@lau.eu.lb

Acknowledgement

Name:

Signature:

Date:

Dear Parent,

A research project will be conducted at your child's school as part of a Master Degree in Education. The aim of this research is to find the correlation between social/emotional problems and working memory and its impact on achievement. Your child will be asked to count digits forwards and backwards.

All data and measurements obtained from this research study will be stored confidentially. Student' participants will get an ID number and no names will be used during data collection. Only researcher will have access to view any data collected during this research.

The research intends to cause no physical or psychological harm or offense and to abide by all commonly acknowledged ethical codes. You voluntarily agree to allow your child to participate in this research project. You have the right to ask the researchers any question regarding this project. You also have the right to reject participation of your child.
This may take 5 to 7 minutes of your child's time at school. Please make sure that you sign for your approval or disapproval. .

- o Yes, I agree to the participation of my child in the research
- o No, I do not agree to the participation of my child in this research

_____

Student Name

_____

Parent Signature

If you have any questions, you may contact:

Name (PI)	Phone number	Email address
Mirna Jrab	03-337468	mirna.jrab@lau.edu.lb

If you have any questions regarding your child as a participant in this study, or you want to talk to someone outside the research, please contact the:

Office of the Committee on Human Subjects in Research,
Lebanese American University
3rd Floor, Dorm A, Byblos Campus
Tel: 00 961 1 786456 ext. (2332)

Teachers Interview (Prepared Questions). **To investigate teacher's perception of disruptive behavior in the classroom**

1. How do you define Disruptive Behavior?
2. How does a student's disruptive behavior affect class environment?
3. What consequences do you implement to adjust a student's disruptive behavior?
4. How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?

Degree/Institution: BA in Science Education / LIU

Years of experience: 2 years

Subject taught: Science and Math

Grades taught: Grade 1 through 5 / Remedial Math for both regular and special students

1. **How do you define Disruptive Behavior?**

- It irritates the whole class and stops the learning process. Disruptive behavior comes out of a cause from home, for example: social. The child might not like the teacher. Maybe the teacher's strategy doesn't work. Sometimes it is because of problems at home, or lack of expression released at school.

2. **How does a student's disruptive behavior affect class environment?**

- Students who are engaged will misbehave as well.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- I keep the disruptive child busy with extra sheets. Talk to him alone or get help from parents and administration (keep it as a last option). Whatever I do there's always a particular student who doesn't improve.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- We end up putting them in special programs. They should be taken to counselors to look up for their interests. Solutions should be found to the well-fare of the student.

Teachers Interview (Prepared Questions).

Teacher 2.

Nationality: Lebanese

Age: 33 years

Degree/Institution: Elementary Education / AUB

Years of experience: 12 years

Subject taught: English/Science/Math/Social Studies

Grades taught: Grade 2, 3, 4,and 7

1. **How do you define Disruptive Behavior?**

- When a student is not following classroom rules then impulsive actions that negatively affect classroom environment. It is not like they are doing one session in and one out. It is repetitive and constant.

2. **How does a student's disruptive behavior affect class environment?**

- It hinders learning directly. A student for example, if he does not want to learn the class does not learn anything. Everything stops. They curse. I try to follow a measure but the administration does not. They are afraid of patents. Private schools are shops. It is becoming like a business education. Parents are becoming customers. Small classes schools are in need for students when the size is small they disregard problems. Administration does nothing.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- Behavioral strategies. Then it did not work. Tried to fix it I was not backed up. The kid is like following elective courses. If I had the proper back up it wouldn't be the case. I try to set strict behaviors but the administration is afraid of parents' reactions towards these procedures because they are like customers and the administration seeks to please them.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- Direct reinforcement whether negative or positive. If I see something I don't like I just tell them. Sometimes I send notes to parents whether negative or positive.

Teachers Interview (Prepared Questions).

Teacher 3.

Nationality: Lebanese

Age: 34 years

Degree/Institution: BA in Sociology / Arab University

Years of experience: 3 years

Subject taught: Arabic

Grades taught: Grade 2 , 3, & 1 for remedial and intervention

1. **How do you define Disruptive Behavior?**

- The learner who talks with need and without it. Does not respect the teacher or the students when given comments. He/she does not work and keeps talking and laughing and cannot differentiate between studying and having fun.

2. **How does a student's disruptive behavior affect class environment?**

- Disturbs students' attention.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- If a disruptive student wants to speak, I postpone the talk until after the session. I postpone what he wants to say and talk about. I do not make them go out of class as a punishment. I convince them with nice talk. Students do not respond to punishment or strong words. Even class work they refuse to apply and I give them second chance.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- I apply a different strategy with each student alone, each according to personality and character. Some improve faster than others.

Teachers Interview (Prepared Questions).

Teacher 4.

Nationality: Lebanese

Age: 30 years

Degree/Institution: Biology & Math Education + Ed. Supervision / Lebanese University

Years of experience: 4 years

Subject taught: English

Grades taught: Grade 1, 2, 3, & 4

1. **How do you define Disruptive Behavior?**

- Background of the students and teacher.

2. **How does a student's disruptive behavior affect class environment?**

- A lot. A lot. Negatively in terms of education and behavior. More chaos. One sick student who needs special accommodations they follow him.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- I place him at the library during recess time.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- I speak a lot. Once he likes he stops bothering me. I adjust my lessons in a way they love it. It makes me feel restless.

Teachers Interview (Prepared Questions).

Teacher 5.

Nationality: Lebanese

Age: 30 years

Degree/Institution: English Education- Cycle 1 / Lebanese University

Years of experience: 7 years

Subject taught: Science/ Math/ English/ Computer

Grades taught: Grade 1 through 6

1. **How do you define Disruptive Behavior?**

- Natural reaction for the child's situation whether sick or annoyed or a certain psychological state or mood. I have to understand his problem.

2. **How does a student's disruptive behavior affect class environment?**

- They disturb and we stop the lesson for 5 minutes minimum. Some students do it on purpose. They are attention seekers.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- Usually voice tone use, then looks, then if repeated, comment to be the last chance. Later, if there are rules they will be punished according to the rules. Recess prevention or computer / I deprive from something they love.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- I show assertiveness towards the behavior exhibited. It is typically related to teacher's style. I studied it at university and did not believe it works but now I do.

Teachers Interview (Prepared Questions).

Teacher 6.

Nationality: Lebanese

Age: 31 years

Degree/Institution: Math & Science-Cycle 2 / Lebanese University

Years of experience: 10 years

Subject taught: Science and Math

Grades taught: Grade 3, 4, & 5

1. **How do you define Disruptive Behavior?**

- Continuous movement, lack of attention, short memory, disorganized and untidy. Given one to one direction.

2. **How does a student's disruptive behavior affect class environment?**

- He loses concentration on class work. Every now and then he stops the learning process and interrupts his peers, loses time, so I am driven to give comments.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- I give many tasks for those who move a lot. Some students are clever and studious in spite of over movement and disruptive behavior who cannot control his behavior. Students are set into groups and those around them are interrupted. Generally disturbed. Parents have role in this. Their life is disorganized. Many adults are responsible. Sometimes they do not go back home directly after school. Sometimes the reasons are genetic.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- Tasks. Ignorance. Give assignments. This is the best I can do

Teachers Interview (Prepared Questions).

Teacher 7.

Nationality: Lebanese

Age: 24 years

Degree/Institution: English Literature / Lebanese University

Years of experience: 2 years

Subject taught: English /Social Studies

Grades taught: Grade 3, 4 & 5

1. **How do you define Disruptive Behavior?**

- Do not answer to teachers, do not sit in their places and do not abide by rules. They reflect suppression from home, shouting, harshness from parents.

2. **How does a student's disruptive behavior affect class environment?**

- Management of the class is affected. I have to shut them up. They waste their times and that of others.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- Things do not work most of the time. I suggest rehabilitation to make things straight back again. Some feel guilty and don't repeat it.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- I punish them in detention. We at school are not allowed to do more than that. And we can't punish little children. We simply tell them to write a sentence for 100 times.

Teachers Interview (Prepared Questions).

Teacher 8.

Nationality: Lebanese

Age: 25 years

Degree/Institution: MA Biology / Lebanese University

Years of experience: 4 years

Subject taught: Science /Social Studies/ Citizenship

Grades taught: Grade 1 through 6

1. **How do you define Disruptive Behavior?**

- Anything that disrupts the flow of class in activities – graps the attention of others.

2. **How does a student's disruptive behavior affect class environment?**

- I stop – either I seize him / students do not follow up.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- Depends on the type of behavior. If it will hurt I physically interfere. I give the look for silly behavior or I can deprive him from participating in a certain activity.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- I try to talk to him/her to assess the disruptive behavior to know where it comes from.

Teachers Interview (Prepared Questions).

Teacher 9.

Nationality: Lebanese

Age: 23 years

Degree/Institution: Math / Lebanese University

Years of experience: 2 years

Subject taught: Math

Grades taught: Grade 1 through 6

1. **How do you define Disruptive Behavior?**

- A student who does not follow the rules.

2. **How does a student's disruptive behavior affect class environment?**

- Like a disease spreading all around.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- Verbal talk at first. They sit for a while to reflect on his behavior on the thinking chair (behavioral procedure). When does something good I praise right away behavioral chart. I work with certain behavioral cases but sudden emergencies at home interrupt my work only to find myself starting all over again – in this case I suggest referral to a specialist for an IQ test.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- Usually we follow the procedures of question 3.

Teachers Interview (Prepared Questions).

Teacher 10.

Nationality: Lebanese

Age: 46 years

Degree/Institution: BA in Social Work +TD in Math & Science/ LAU

Years of experience: 7 years

Subject taught: English & Science

Grades taught: KG2 + Grade 1

1. **How do you define Disruptive Behavior?**

- Neglect from parents as if parents are saying take away anything you want and let us be. And from what I see it is also life skills are absent plus no social skills. During my years of experience this has always been the case. Disruptive behavior in absence of rules in general due to parents' neglect.

2. **How does a student's disruptive behavior affect class environment?**

- No attention. Source of distraction – the whole link detaches – no link for learning process – no possibility foe assessment – no get easily distracted.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- The disruptive student. I try to put him/her aside from the group. I try to talk but not always I succeed. Some students do not understand from talk – no extra sheets - nothing is working some are put on the street at home – I am not specialized in the field of behavior therapy so I need support for some interventions – I search for solutions but it's like digging in sand – I need a

specialist to guide me – consultancy will cut it short – because my attempts do not always work – my ways are trial and error - I don't always get straight results – sometimes I work but sudden emergencies at home stop my work to go thru it all over again – I have a class which students are gathered together because they are disruptive.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- Not at home – no rules at all – I established classroom rules – some are working fine even with exception but others are not – and mostly because of parents at home – low SES plays a role. Very hard to accommodate between curriculum and students with disruptive behavior. Some students' problems are beyond disruptive behavior and goes to problems in intelligence – they need IQ tests and specialists to decide.

Teachers Interview (Prepared Questions).

Teacher 11.

Nationality: Lebanese

Age: 27 years

Degree/Institution: BA in Sociology / AUB

Years of experience: 10 years

Subject taught: Science and Math

Grades taught: Grade 1 through 6

1. **How do you define Disruptive Behavior?**

- So many things – talking with no permission – hyperactivity – disturbs, distracts attention from students – it's beyond students' control – physically it's beyond their control – domestic discipline plays a role.

2. **How does a student's disruptive behavior affect class environment?**

- It cuts off the concentration from class – I have to start all over and take every child's attention – eye contact is the most important – some students need to be ignored to go back to rules.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- There's a step strategy at school and we follow it. It's a help from administration because we need the solution – some students become violent – it's better to sart punishment with baby steps.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- There’s a punishment according to the behavior – ex: shouting /hitting/bad words => administration. It’s a rule among students that very bad behavior is detected by them.

Teachers Interview (Prepared Questions).

Teacher 12.

Nationality: Lebanese

Age: 26 years

Degree/Institution: Major English ed/minor art ed/Lebanese University

Years of experience: 2 years

Subject taught: English

Grades taught: Grade 2 & 3

1. **How do you define Disruptive Behavior?**

- I'm ok for students to be active. – but too much noise becomes annoying – not following the rules – disrespect of teachers.

2. **How does a student's disruptive behavior affect class environment?**

- Limits concentration – have to repeat the concept all over again – shift the focus away from instruction.

3. **What consequences do you implement to adjust a student's disruptive behavior?**

- A couple of verbal warnings then written warnings – on the long run they go to detention.

4. **How do you accommodate as a teacher the student needs to support his/her behavior in the classroom?**

- Implementing interactive teaching – they are not bored – tradition teaching may allow boredom.