

The British University in Dubai

Institute of Education

**Science Education and Provisions for
Learners with Physical Disabilities in
Public Primary Schools in Dubai:
An Investigative Study**

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Dissertation submitted in partial fulfillment of the requirements
for the degree of Master of Education

in

Special Education

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March 2010

In the Name of Allah, the Most Gracious, the Most Merciful

Abstract

The educational system in the United Arab Emirates is moving towards including students with special educational needs (SEN) in public schools. Studies have examined the services offered for students with different special educational needs in the public sector .However; few studies have examined services offered to students with specific educational need in a specific subject area. This study was carried out in Dubai's cycle one government schools; the focus was on science education for pupils with physical disabilities (PD) in regular classes. It investigated the services offered to them by the educational authorities and the accommodations provided by the science teachers to meet their needs. In addition teachers' concerns about their competency in teaching science to pupils with SEN were explored. Mixed methods were utilized to achieve the study aims.

The findings demonstrate a number of areas of concern regarding the services offered for those pupils. The first area is the science curriculum where the standards are not aligned and sufficient learning materials that suit the specific needs for pupils with PD are not provided, whereas another area is the assessment. There is no evidence of precise guidelines for special considerations in assessing pupils with PD in science subject. Physical access was another area that provokes concern. Few modifications are done to facilitate accessibility. The pupils do not also receive any related services (e.g. physical & occupational therapies) which were considered essential to enhance their participation in school activities.

Moreover, the science teachers expressed their concerns about competency in teaching pupils with PD. Another finding was that science teachers in Dubai's government schools had never received any training concerns teaching methods, awareness or accommodations issues for pupils with PD. Finally, some recommendations to improve such provisions have been offered.

Key words: Physical Disabilities; Primary Science; instruction and physical accommodations.

This dissertation is dedicated to my Mother and Father

**"My Lord, Bestow on them Your Mercy as they did bring me up
when I was Young."(Surat Al Issraa 17:24)¹**

The translation of this verse of the Holy Koran is from:

Al-Qasim,A.M.,(2004).*Kindness to Parents* .Translated into English by :Jalal Abualrub. Riyadh:
Maktaba Dar-us-Salam.

Acknowledgements

All praise is for Allah. With his help and grace this work was completed. May the peace and blessings of Allah be upon His Messenger Muhammad.

My precious parents and family.... I am forever thankful for your support and prayers that gave me the power to continue...

My sincere appreciation and gratitude to my advisor Dr. Eman Gaad... Your guidance and encouragement made this work possible... Thank you.

Special thanks for all the children and parents who participated in this study. I am also grateful to all science teachers, school principals and their assistants and the science supervisor in Dubai cycle one public schools... Your participation enriched my experience and your willingness enabled me to complete this study.

I would also like to extend a special thank to the officials at the Ministry of Education and the Ministry of Social Affairs who offered help throughout the research. Their valuable help will always be appreciated.

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Chapter One

Introduction

Overview

The Federal Law No.(29) of the year 2006 is the first legislation in the United Arab Emirates (UAE) that concerns the rights of individuals with special needs. Its passage showed the country's accompaniment with international laws that pertain the human rights- especially education- for persons with disabilities such as the Convention on the Rights of the Child (1989), the Salamanca Statement and Framework for Action on Special Needs Education (1994) and the Dakar Framework for Action" Education for all" (2000) (UNICEF 1989;UNESCO 1994; UNECO 2000).This law is expected to bring a dramatic change to the provision of educating persons with special education needs (SEN).

Section two of this law emphasized the fundamental rights of education for individuals with special needs (SN). Article 12 indicated that: "The state shall guarantee to provide for an individual with SN equal educational opportunities in all educational institutions. Special needs do not represent an obstacle preventing an individual from applying to or joining any government or private educational institution of any kind" (Ministry of Social Affairs 2006: 5).Examining this article of the law entails that Ministry of Education (MoE) and Knowledge and Human Development Authority (KHDA) in Dubai are committed to offer them equal opportunities to access to general education as regular students.

The role of science in the education of learners with SEN is central and significant. Scruggs (2004) attributed this fundamental role to the capability of science to "encourage all of us to advance beyond the sensory and physical barriers that affect and challenge" .It develops our "thinking, imagination and probe for rational and logical explanations for the observed universe".

In addition, Cawley et al (2002) examined the science achievement and behavior of students with disabilities (SWDs) who were included in general science classes. The results showed that the passing rate of the SWDs in the district final exam was high compared to the passing rate of the other students. Moreover, the SWDs were well accepted by their peers and the science classes

were characterized by extensive interpersonal contact among the students and their teachers.

In order to identify the provisions of services needed for students with disabilities who are studying in (or expected to join) public schools it is necessary to recognize disabilities in a form of categories. It is not an approach to stigmatize those children but as Gaulin and Dunn (2005:4) asserted that "a person with a disability is not defined by their condition; each person is a unique individual. But a good place to start is an understanding of types of disabilities and their impact".

Going along with this perspective, physical disabilities (PD) include congenital and acquired conditions. According to Mastropieri and Scruggs (1998) "there are enormous variations in these handicapping conditions, from restively mild and short- lived, to progressive, incapacitating, and life threatening".

Physical disabilities may result from problems or impairments of the functional or structural body systems (e.g. the nervous system, the skeletal system) or a traumatic brain or spinal cord injuries (Alsaratawi & Alsamadi 1998; Stefanich 2007), therefore, the needs of the individuals with PD can vary from no limitation on basic physical activities (e.g. walking ,carrying) , learning and working to substantial limits in their activities and the requirement of medical and educational interventions . Venn (1989) identified the impact of PD on the students' education process by stating that "the physical problem can hinder student's mobility, coordination, communication and learning abilities to such an extent that educational objectives are difficult to be achieved and special education intervention is required".

Note In this study the term "physical disabilities will be" confined to the motor/ orthopedic disabilities and the health impairments will not be included.

From a focus of incidence, PD do not generally "exceed 1% of the school-aged population at any given time" (Jackson 2005).

1.1. Statement of the problem

The need for reform in science education, in primary stage in general and for the students with disabilities in particular, has been recognized all over the world since the implementation of inclusion legislations that undergo with the international developments in the human rights laws toward inclusion of persons with disabilities in all aspects of life.

Science education can offer valuable opportunities for the students with disabilities to promote their participation in inclusive classrooms, their thinking abilities and learning aptitude of the world (Mastropieri et al 1999).

Students with PD face multiple challenges in science classes that need accommodations if they were to be actively engaged in learning science and receiving the same experiences as their peers. However, providing appropriate instruction in the area of science to children with disabilities can be challenging for regular and special educators (Hamrich et al 2001)

Although there is a plenty of literature on science education for students with disabilities existing internationally, little is known about this issue in the public schools settings in the UAE. This study will shed light on science education as a fundamental component of curricula for all children in primary stage, the available provisions for students with PD and will offer recommendations of improvements.

1.2. Background of the research

The study was carried out in Dubai's cycle one (primary) public schools. The study focus was on science education for pupils with PD in regular classes', the services offered to them by the MoE and KHDA and the accommodations done by the schools' administrations and the science teachers to meet their needs. In addition, the teachers' concerns about their competency in teaching pupils with SEN were explored.

1.2.1. The United Arab Emirates

The United Arab Emirates (UAE) is a federation of seven individual states that was announced as an independent country on the 2nd December 1971. The

seven states are Abu Dhabi, Dubai, Sharjah, Ajman , Umm Al Qaiwain, Ras Al Khaima and Fujairah. The country is bordered by the Arabian Gulf , the Gulf of Oman, Oman and Saudi Arabia (Al Qassemi 1999; Annual book of the UAE 2006). The number of UAE population as counted in the census 2005 was approximately 4 million , the nationals form only 20.1 % of the total population ; where the 79.9 % are expatriates (Ministry of Economy 2006).

Prior the year 1971 the UAE was not a single state but a group of seven states that were called the "Trucial states" . This name was derived from the nineteenth century treaties between each of the Shaikdoms and Britain (Codrai 1990; Al Qassemi 1999). These treaties were "the cornerstone of the British domination in the Arabian Gulf until the withdrawal from the area in the 1971" (National Center for Documentation and Research 2009).

Since the discovery of oil in the 1940s, there has been tremendous development in the economic and the social aspects of life especially after the construction of the UAE. This prosperity was reflected on the expansion in the education sector qualitatively and quantitatively (Al Qassemi 1999).

1.2.2. Development of Education in the UAE

The transition from the non formal religious education to the modern systematic one started in 1953. The first school was opened in Sharjah in October 1953 with the collaboration with Kuwait government ; the first country that sent educational missions and offered the human and financial support (e.g. teachers , curriculum materials, teachers salaries) (Al Asi 1993; Al Qassemi 1996). During the period from 1953 to the establishment of the federal state there were tremendous increase in the number of students joining the modern educational system . The number of students in the school year 1953/1954 was 230 and reached 160217 students in 1970/1971 (Al Asi 1993).

The leap in the educational system sprang up with the construction of a federal state in December 1971. Following that, the constitution founded the federal ministries which were in charge of organizing civil life aspects. The constitution stipulates the citizens' rights and summarizes the educational philosophy in the UAE. Article 17 stated that:

Education shall be a fundamental factor for the progress of society. It shall be compulsory in its primary stage and free of charge at all stages, within the Union. The law shall prescribe the necessary plans for the propagation and spread of education at various levels and for the eradication of illiteracy.

(Federal National Council 1996)

The country has witnessed since its establishment huge expansion of the educational programs that are offered to students such as regular, technical, religious and agricultural programs. However, the special education program was not offered in public schools till the year 1980.

1.2.3 Education for children with SEN

The Ministry of Education (MoE) has the responsibility of the public and private sectors of education in general (Bradshaw et al 2004); while the special education is under the responsibility of the Ministry of Social Affairs (MSA) beside the MoE (UNESCO-IBE 2007).

The constitution has guaranteed equality of opportunities for all citizens (Federal National Council 1996 :Article 14), however, children with disabilities did not have the same opportunities in education as those without disabilities till the year 1979 when the Council of Ministries issued the ministerial decision No.(365) / 1979 which authorized the MSA and the Ministry of Health to be in charge of the welfare of persons with disabilities in all aspects .This decision was activated in the school year 1979/1980 by the MSA and the MoE by opening specialized centers for rehabilitation (Ministry of Social affairs 2008) ; while the MoE started to open special and resource classrooms in public primary schools (Hasoon and Al-suwaidi 1993 ; Abbod 2005).

Furthermore, the MSA is an effective partner in providing different services such as education for students with SEN/or disabilities. The ministry has several initiatives and efforts to implement the Federal Law (29) and to facilitate the inclusion of students with disabilities in the public education system .The latest initiative is "School for all" which is within the framework of the strategic plan for the federal government (2008-2010). It aims to include students with disabilities in the mainstream in consecutive steps; the first step has started since the

school year (2007/2008) by including students with visual impairment (VI) in public schools, and by the end of the school year 2010 all the students with VI would be shifted from the government rehabilitation centers to the public schools and no more students with VI will be educated in those centers. After this step students with other type of disability would be included in the public schools. The ministry is also in the final stage of preparing a manual for the technical specifications for inclusive schools .The manual includes standards for school buildings, the classroom environment, the laboratories and the lavatories. Moreover, it includes standards for curriculum and assessment for students with SEN (Appendix 7e, Q1).

1.3. The Research Questions

The aim of this study was to provide an overview of the services offered by the MoE and KHDA to the pupils with physical disabilities in Dubai public primary schools .Moreover, it was intended to address issues such as educational and physical barriers that face pupils with PD to learn science, the appropriate teaching strategies and the skills that are required by the science teacher to meet diverse needs of this group of learners.

The following questions will shed light upon these issues:

1) What are the provisions for pupils with Physical disabilities (PD) in the public primary schools in Dubai in the following terms?

- Science Curriculum learning material.
- Assessment.
- Physical Environment (or Accessibility).

2) What are the concerns for science teachers in public primary schools in Dubai in the following terms?

- Competency in teaching pupils with SEN/or PD.
- In –service training programs.
- Science teaching strategies for pupils with PD.

3) What could be recommended to improve the mentioned provisions?

1.4. Significance of the Research

In accordance with the Document of Science Curriculum Standards (Curriculum Department 2001) one of the basic goals of the science education is to "learners develop their understanding and capabilities in the process of scientific investigation" and "they design and carry out and convey their knowledge and evaluate its results". This indicates the importance of developing inquiry skills for the learners. However, based on the researcher's experience working as a science teacher for many years and reviewing many international studies showed that science teachers are "unprepared and uncomfortable" to use this approach in teaching as Levy et al (2008: 2) argued. In addition, they depend on textbook and lecture presentations (Kimmel et al 1996; Haskell 2000; Trowbridge et al 2000).

On the other hand, many students with PD lack significant abilities skills (e.g. mobility, sensory, writing) and as a result they can not benefit from the common strategies that are used by most science teachers. Moreover, those students may face many barriers in accessing classes and laboratories which require significant accommodations both in learning environments and instructions (Venn 1989; McCann 1998).

To make the inclusion of those students effective and make them gain the same scientific knowledge as their peers "there is a critical need to restructure the methodology of teaching science" (Kimmel et al 1996).

The uniqueness of this investigation is that it looked at the service delivery to pupils with PD in general science classes in UAE public schools. Research in special education domain and inclusion has given much attention to high incidence disabilities such as learning difficulties and mild disabilities. Low incidence disabilities should have the same attention as teachers are in need of acquiring the skills to respond efficiently to the diverse needs and abilities in today's classrooms; taking into consideration that low incident disabilities do not occur frequently in population, but can have a major impact on students functioning (Duquette 2001:104, Jackson 2005).

Research in the area of education for students with SN in the UAE has focused on different aspects. For example, some research examined attitudes of

teachers towards the placement of students with disabilities (e.g. intellectual disabilities) (Gaad 2001;Bradshaw et al 2004;Gaad 2004;Alghazo & Gaad 2004).Some research focused on the inclusion of students with disabilities in general settings(Alkhayal 2007).Another focus was on analyzing educational system (Arif & Gaad 2008).Furthermore, some studied the effect of the child's disability on educational decisions on gifted and talented children (Elhoweris 2008).

However, the researcher did not come across any research concerning science education for the children with physical disabilities in the UAE educational context.

Constructing this study is anticipated to provide the researcher (and hopefully the science educators and decision makers) with data about the actual situation of science education for children with specific needs such as PD in the primary government schools in Dubai. These data are essential to identify the deficiencies in science education for students with SEN and to work to overcome the obstacles towards an effective and productive inclusion for those children.

1.5. The Organization of the Research

Including this introductory chapter, this study is consisted of five chapters.

A review of the literature in Chapter Two provides the context and theoretical framework of the study.

Chapter Two consists of three sections .First; the search process of the literature is presented. Then it is followed by two other sections including a review about topics that are related to this study such as PD definitions, characteristics and their impact on children's learning. The chapter is concluded by a detailed review of science teaching strategies and accommodations for pupils with PD.

Chapter Three outlines the research design and methods employed. A description of data collection by both the qualitative and quantitative methods is included in addition to data analysis procedures. The issues of ethical considerations and the trustworthiness of the findings would also be discussed.

Chapter Four contains description of the findings and thoroughly close discussions .The findings are displayed in correspondence with the research

questions posed in chapter one .The results are compared to relevant findings from other published research or literature.

Chapter five summarizes the study's significant findings. Conclusions and recommendations for improving the services offered to pupils with PD are suggested. Furthermore, study limitations and future research directions would be discussed.

Chapter 2

Literature Review

Overview

Literature review is seen by Mertens (1998) as an important research tool in areas where populations (typically) yield small samples such as special education. According to her literature review "provide the reader with an overall framework for where this piece of work fits in the "big picture" of what is known about a topic from previous research".(Mertens 1998:34).

The search process for the literature is presented in the first **section (2.1)**. The second **Section (2.2)** includes a review about topics that are related to this study such as science education in public primary schools. The Third **Section (2.3)** includes PD types, definitions, characteristics and their impact on children's learning. Finally, **Section (2.4)** reviews the teaching strategies and skills required by the science teacher to meet the diverse needs of pupils with PD in inclusive classes.

2.1 The Search Process

The researcher adopted the procedures described by Creswell (2008: 90-104) for searching the literature, they are summarized in the next paragraphs.

Identifying the key terms

Some main terms in the research title were used such as "*Science education for students with PD*" , *Students with PD*", *Characteristics of PD*", "*Impact of PD on learning*" and "*accessibility for students with PD*".

Locating the literature

The main sources available were; the libraries and the on-line resources. I began the search in the British University (BUID) library (my institution). Many books were found about SEN in general .However, no references were found about PD or science education for SEN. Then I tried Dubai's Public Library where many books about PD and science education were found and most of them in Arabic.

The second source was on-line search .The researcher depended intensively on the internet by exploring the available literature on line. As the e-journals and books services were not available in the BUID for education students. The researcher depended on free literature available through using Google Scholar Engine and also through purchasing books and articles through some sites such as Amazon.

Evaluating and selecting the literature

The main criteria was to determine its credibility and its relevance to the study topic .Good literature was evaluated by using priority system .The priority was for refereed journal articles , then books , conference papers ,government publications and finally non reviewed articles posed to websites (Creswell 2008:104).

2.2. Science Education in Primary (Cycle one) Stage:

According to Keller.Jr et al (1983) the overall teaching goals for teaching science are alike for all students regardless their educational needs; whereas the modifications done by the science teacher to meet the diverse abilities differ. Educational standards "express the essential goals of pedagogical work in precise, comprehensible and focused terms as desired learning outcomes for students. They thus translate into concrete terms the educational mission to be fulfilled by schools" (Klieme et al 2004: 5).

From this perspective the Science Curriculum Standards in the UAE will be presented bellow to inform the reader about some of the objectives that are all students are expected to achieve in the primary (Cycle One) stage.(Notice: to see all of the Standards and Teaching Goals please see Appendix 1).

2.2.1 Science Standards

- Learners develop their understanding and capabilities in the following concepts and operations: Regulations and Analysis; Arrangement and Management; Guide, models and explanation; Change and steadiness and measurement; Patterns and expectation; Evolution and poise; Form and function.
- Learners develop their understanding and capabilities in the process of scientific investigation. They design and carry out and convey their knowledge and evaluate its

(Curriculum Department 2001, the National Science Education Document: 31)

2.2.2. Science Curriculum

The current science syllabus was introduced (on stages) in public schools in the school year 2002/2003 .It is the Arabic version of "*Harcourt*" Science for All curriculum series which was modified to the national science standards(Appendix7d -Q1; Appendix16). Further, primary level (grades 1-5) study scheme includes 3 periods of science a week. Teachers of grades 1-3 are class teachers who teach science and mathematics for the same section pupils. They are called "domain 2" teachers (Domain 1 teachers teach Arabic language and Islamic Studies).

2.2.3. Pupils with Physical Disabilities and Science education

As the researcher had the opportunity to observe a number of primary schools settings domain visits, all the pupils with PD who were attending public primary schools in Dubai were fully integrated in general classrooms and not in special classrooms .They receive the same curriculum as their peers of the same grades.

2.3. Students with physical disabilities

The review in this section seeks to explore the students' special educational needs from the perspective of the impact of the PD on their learning activities. In order to accomplish this aim an understanding of the characteristics of children with PD were examined .In addition to identifying the terms and definitions associated with the types of this disability.

2.3.1. Definitions

The number of students with PD in public schools was 148 in the school year 2008-2009 taking into account that including students with PD (and other disabilities) is a new procedure in the UAE public schools (Special Education Department 2009 b) .The definition of the PD by the Special Education Department as stated in the "*General Standards for Special Education Programs*" document, was:

"Students with health, physical, and/or multiple disabilities exhibit a chronic or acute health problem such that the physiological capacity to function is significantly limited or impaired. The term shall include, but is not limited to: health impairments due to asthma, attention deficit disorder or attention

deficit with hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, and sickle cell anemia, cerebral palsy, and/or any physical disability if such health impairment adversely affects a student's educational performance."

(Special Education Department 2009 a)

The pervious definition includes health and PD. As this study is confined to PD and precisely to orthopedic and motor disabilities, there is a need to clear definition that manifest this disabling conditions. According to Algozzine & Ysseldyke (2006: 17) physical disabilities are "problems that result from injuries or conditions affecting the central nervous system or other systems and their related functions". They also consider the orthopedic disabilities as the most common PD.

Moreover, one of the most known definitions for the orthopedic disabilities is the one by the USA Federal law known as "the Individuals with Disabilities Education Act (IDEA)" .It defines it as: "a severe orthopedic impairment that adversely affects the child's educational performance. The term includes impairments caused by a congenital anomaly (e.g. clubfoot, absence of some member, etc.), impairments caused by disease (e.g. poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g., cerebral palsy, amputations)" (Knoblauch & Sorenson 1998; National Association of Special Education Teachers NASET 2006).

2.3.2. Prevalence

According to the statistics from the MSA there were 223 students with PD in the public and private rehabilitation centers .They consisted of 6 % of the total number of students during the school year 2008-2009(Ministry of Social Affairs 2009; Appendix 2).While their number in the public schools were 148 which consisted only of 2 % from the students with disabilities(Special Education Department 2009b; Appendix 3) .We must bear in mind that including students with PD (and other disabilities) is a new procedure in the UAE public schools. Figures1 & 2 illustrate the number of students with SEN / or disabilities in both the rehabilitation centers and the public schools.

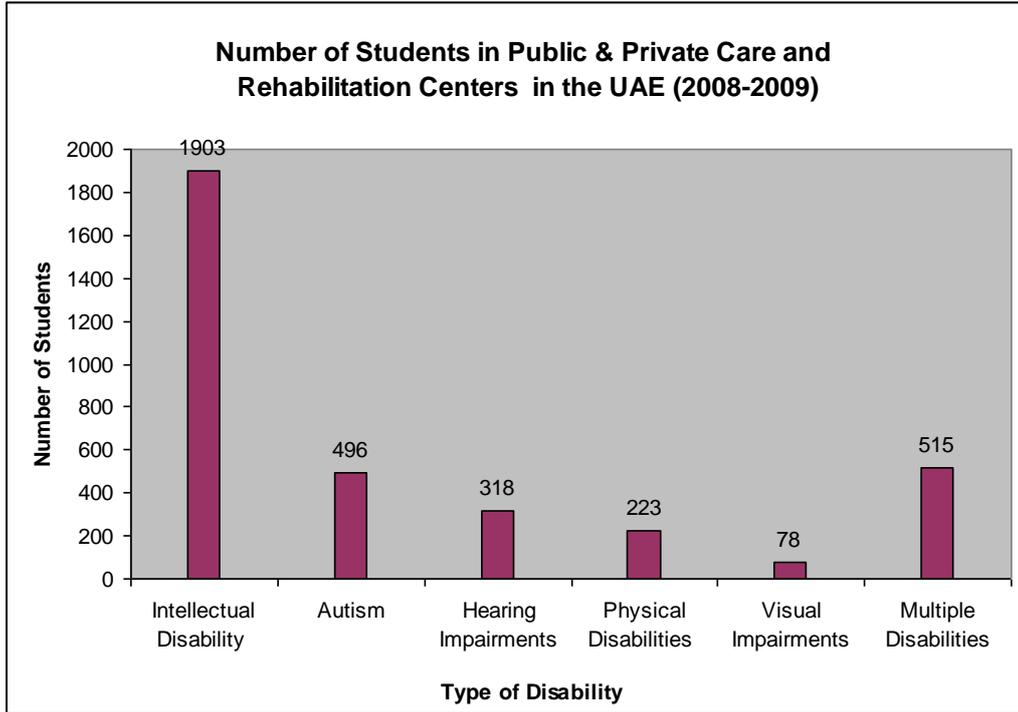


Figure1. Number of Students in Public and Private Care Centers in the UAE (2008- 2009).
 Source: MSA, Dubai: Department of Welfare and Rehabilitation of Persons with Disability.

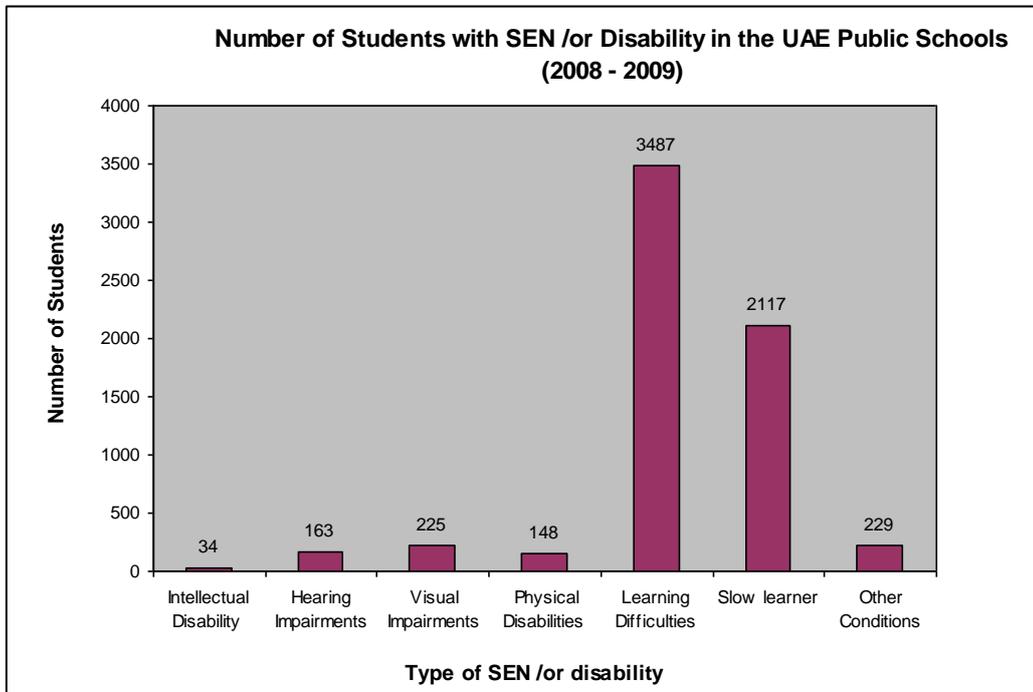


Figure2. Number of Students with SEN /or Disability in the UAE Public Schools (2008-2009). Source: MoE , Dubai: Special Education Department.

2.3.3 Types of physical disabilities and their characteristics

One of the ways to examine the PD which the researcher found more common and convenient was by dividing them into: **Neurological impairments** (e.g., cerebral palsy, spina bifida, Polio ,epilepsy ,spinal cord injuries) and **musculoskeletal disorders** (e.g., muscular dystrophy, Arthritis, limb deficiency)(Alsaratawi & Alsamadi 1998 ;Hill 1999 ;Heller 2001; Algozzine & Ysseldyke 2006 ;Hallahan & Kauffman 2006).

Example of the neurological impairments:

Cerebral palsy (CP) refers to a group of chronic conditions that affect the movement and coordination of the body. CP is "a permanent, non-inherited, nonprogressive motor function disorder resulting from congenital or postnatal injury to the motor cortex² cerebellum³ or basal ganglia⁴ of the brain" (Hill: 197). It is **caused by** damage to the motor control centers of the brain before (prenatal), during (perinatal), or after birth (Hill 1999 ; Algozzine & Ysseldyke 2006).This damage is associated to birth trauma ,or lack of oxygenated blood to the brain (ischemia) ,or inadequate oxygenation of the body cells (hypoxia).

CP impairments range from mild to profound and can be associated with other disabilities(e.g. intellectual disabilities, vision impairments) depending on which area of the brain has been affected (Alsaratawi & Alsamadi 1998 ; Hill 1999 ; Bowe 2000).CP is **classified into** four basic categories depending on the parts of the brain are affected; these categories and their characteristics can be summarized as following:

- "*Spastic*" CP is the most common. Mild form can not be detected only by a specialist while the severe spasticity leaves individual rigid, with muscles tense and contracted.
- "*Athetoid*" CP results in involuntary movements, grimacing, writhing and sharp jerks.

²Cerebral cortex : The outer portion of the brain , the neo-cortex consisting of gray-colored layers of nerve cells, and the interconnecting neural circuitry ,which is intimately linked to cognition(Segen 2006:127).

³Cerebellum: The front part of brain, responsible for thoughts, emotions and personality (Hornby 2000:189-190).

⁴Ganglia: A mass of nerve cells ((Hornby 2000:528).

- "Ataxic" CP is a rare form with characteristics including: lack of coordination and balance, underactive reflexes, constant involuntary movement of eyeballs, muscle weakness, tremor, and wide gait as the individual begins to walk (Algozzine & Ysseldyke 2006 :23-24).
- Finally, the "mixed type" is a combination of the previous motor impairments (Hill 1999). CP symptoms may also include limited movement, stiff /or immobile legs difficulty with articulation, epilepsy and vision problems (Farrell 2006).

Example of the musculoskeletal disorders

Muscular Dystrophy (MD) refers to "a group of some 40 genetic disabilities featuring progressive weakness and degeneration of muscles caused by deficiency in a protein called "dystrophin" without which muscle fibers can not regenerate".(Bowe 2000 :170).**Duchenne MD** is the most common and severe form while **Becker MD** is less frequent and less severe .Both types affect boys primarily (Bowe 2000 ; Deiner 2005 ; Farrell 2006).

As the parts of the body, the skeletal and voluntary muscles, are affected this leads to gradual weakness in the muscle strength and health with lower limbs which often get weakened before the upper ones. Moreover, children show "clumsiness in walking, tendency to fall, inability to run[...] weakness in the muscles that aids breathing can lead to respiratory distress often the immediate cause of death in Duchenne MD"(Bowe 2000 :171).

2.3.4. Effects of physical disabilities on learning

In many respects it is difficult to determine effects of PD on students learning process. The impact of the PD on the students depends on the particular impairment they have and its severity. However, some general effects are more frequent.

Heller (2001) divided the impact of PD on students functioning at school into 6 categories which can result in many difficulties. Along with Heller study, many other studies were found (Heller et al 1996; Hallahan & Kauffman 2006; Stefanish 2007; Farrell 2008; Khoo et al 2009) that supported her classification and illustrated the same effects (despite their approaches in presenting them). She summarizes the 6 categories as following; each with sample problems:

- a) Poor motor skills: Difficulties in mobility may restrict student participation in different activities. In addition, arm/hand limited movement results in problems using writing tools and exploring items.
- b) Restricted language: Language difficulties can affect students' academic performance such as participation in learning activities and presenting their questions and ideas .
- c) Lack of experiences: Limited mobility abilities can result in lack of knowledge of common places.
- d) Individual factors: Many individual factors accompany PD such as pain, fatigue, discomfort, medication effects and absenteeism.
- e) Psychological factors: Some students with PD also have cognitive issues which affect learning performance. Moreover, some students may have motivational issues such as depression, poor self-concept or self-advocacy skills.
- f) Ineffective learning environment: Unrealistic or low expectations for the students with PD from some school personnel and limited acceptance by peers can lead to academic failure.

2.4. Science Teaching Strategies and Accommodations for Students with PD

Through learning science, there are great opportunities for children with PD to develop problem – solving and cause and effect reasoning skills that are necessary for safety and encourage them to work out adaptations for meeting their needs (Deiner 2005).In addition, MacCann (1998) asserted that science classes provide students with SEN with "opportunities they may not get anywhere else".

Teaching children with PD does not differ from teaching their peers without SEN as most of those children can get over many of the impediments they encounter using their own style (Closs 2000 cited in Hallahan & Kauffman 2008).Not every physical limitation require modification of any kind for the pupil, in fact some pupils with PD may need related services (e.g. mobility aids) but do not need any specific modification or strategies for learning.

On the other hand many pupils with PD require assistance to participate and have the same educational opportunities as their peers. The new regulations by the MoE require the school systems to develop an "Individual Education Plan"(IEP) for pupils with SEN through which the child abilities ,specially his strengths, are determined in order to maximize them .Suitable services are provided to insure his participation in the least restrictive learning environment (Special education Department 2009a : 17).

As the most of school systems are moving towards the inclusion of students with diverse abilities, Deiner (2005: 31) asserts a basic issue which is "it takes a team work to care for and to educate a child with diverse abilities".

Much of the literature reviewed concerning science education for students with PD emphasized the role of the team work in assessing the child's needs and determining the modifications required in the physical environment and the curriculum (Cheney & Roy 1999 ; Hill 1999 ; Bowe 2000 ; Garner & Davies 2001 ; Heller 2001; Deiner 2005 ; Luke & Schwartz 2007 ; Hallahan & Kauffman 2008 ; Farrell 2008).This team consists of educators (e.g. administrators; general and special teachers) and specialists (e.g. Physical Therapist (PT); Occupational Therapist (OT).

2.4.1. Accommodations and modifications

While examining the literature concerning educating students with SEN some controversy was noticed in using the terminologies of "Accommodation" and "Modification"; while they have been used as synonyms in some resources, they were precisely defined and used in other resources (Thurlow 2002; Thompson et al 2005; DO-IT /University of Washington 2009).

To avoid any confusion result of using the terminology of "accommodations " and "modifications " ;and as most of the definitions that were reviewed limited the accommodations to the instructional and assessment alternations; I found the definition for both terms presented by DO-IT /University of Washington as the most convenient and comprehensive one for using in this study .

DO-IT used the term "accommodation" to "describe an alteration of environment, curriculum format, or equipment that allows an individual with a disability to gain access to content and/or complete assigned tasks". For example, accommodations may include extended time for students with fine motor limitations or sign language interpreters for students who are deaf. In addition they made clear that "accommodations do not alter what is being taught" and the student shall not have different grading scale in assessment rather than their peers without disabilities (DO-IT /University of Washington 2009).

On the other hand, DO-IT used the term "modification" to "describe a change in the curriculum" which also includes assessment. It is used for students who may face difficulties in comprehending the content that is taught. For example, modifying and reducing the assignments for a student with cognitive impairment in regular classroom (DO-IT /University of Washington 2009).

There were **two themes** across the reviewed literature dealing with the accommodations for the students with PD. The first one is the **general accommodations** which help the students to overcome the limitations resulted from their specific conditions in the educational environment (e.g. buildings, equipments). The other topic is **specific accommodations for science** subject (e.g. instructions/or teaching strategies; assessment).

In the next sections, the *general accommodations* for students with PD will be reviewed followed by *specific accommodations for a science* class. Taking into consideration that students with PD demonstrate a broad range of conditions and abilities; therefore, accommodations vary greatly and are best determined on an individual basis.

2.4.2. General Accommodations and modifications

Physical Environment

An accommodation for the educational environment is a basic requisite to include students with PD in general schools. The educational environment includes the physical and learning settings.

The physical environment includes school building and transportation means.

One of the comprehensive resources that highlighted this issue is the publication of "Save the Children" organization (2002), consequently, I will refer to it in most parts of this section.

Building accommodations include physical access and the safety considerations. Most common accommodations are the modifications built in the existed buildings or included in the new ones such as ramps, handrails, gentle slopes, wide doorways with facilitations that make their opening easy (e.g. handles fixed at appropriate levels; automated doors), lifts, accessible and safe toilet rooms, classroom seating arrangements especially for the children who use wheelchairs and blackboard fixed at appropriate heights (Save the Children 2002; Farrell 2008).

Furthermore, traveling to and from the school is a critical issue (especially their safety) considered to facilitate including the students with PD in general schools. Children safety can be attained by using modified buses, for the use of individuals with PD, commercially available. Moreover, adult supervision on the children transportation should be planned by the school administration with parental cooperation (Save the Children 2002).

General Assessment Accommodations

The new document of the Special Education Department stated accommodations for students with PD focused mostly on assessment accommodations. They include using assistive devices during the assessment (e.g. prosthetic devices such as an artificial arm or leg); specific setting and timing schedule that suit the students' conditions; breaking down the test to be carried out in short intervals of time; using different alternatives in responses specially the writing (e.g. oral answers, using word processor, multiple choice tests) and performing one test a day not more (Special Education Department 2009 a).

2.4.3. Specific accommodations for science

There are many **accommodations** supported by research and proved to consolidate science learning for students with PD in general science classrooms and laboratories.

Teaching Strategies

In the studies conducted by Keller Jr et al (1983), Stefanich (2007) and Burgstahler (2008) several "mitigative" teaching strategies were offered. Stefanich (2007) asserted that classroom accommodations require only a "well-planned" adaptations without the need of complications. Keller Jr, Stefanich and Burgstahler listed many accommodations demonstrated by the following examples:

Accessibility to the materials/or learning resources and the student's movement must be examined. **Considerations of safety** should be applied especially in using liquids and heating sources as students who use wheelchairs or with mobility limitations may be exposed to spill-over or burns. Providing **assistive responding devices** such as computer with special hard – ware to record responses and observations. Supporting **collaborative learning**, group working and "a buddy – system" /or supportive peer assistant. Allowing **extra time** to finish activities and travel between classes. Providing **adjustable equipments** such as adjustable tables, special switches, equipments with special handles and modified microscopes.

Furthermore, through a project which lasted three years and studied effective inclusive science classrooms across grade levels Mastropieri & Scruggs (1994, cited in Mastropieri & Scruggs 2001) identified seven variables appeared to be associated with successful inclusion. A number of these variables can be considered as effective science teaching strategies for students with SEN. They included **support from special education personnel** which manifested the contribution of special teachers in "planning, instruction adaptations and co-teaching". Secondly, **appropriate curriculum** involves replacing the abstract presentations and over reliance on textbooks by concrete meaningful examples of the phenomena, frequent discursive explanations and relevant practical activities. **Effective general and disability-specific teaching skills** are associated with exhibit effective communication skills with students with PD. These skills were summarized as the SCREAM variables: structure, clarity, redundancy, enthusiasm, appropriate pace, and maximized engagement. Finally, **peer assistance** approved to be helpful for students with PD (Mastropieri and Scruggs 2000 cited in Mastropieri & Scruggs 2001: 266).

The findings of an empirical study conducted by Mastropieri et al (2006) examined the effectiveness of using differentiated hands-on activities method for students with mild disabilities in inclusive science classes, indicated that the differentiated curriculum enhancement statistically facilitates learning of science content on posttests and on state high-stakes tests for all students and they enjoyed using the activities.

In addition ,in two separate research studies conducted by Houtz & Watson (1998)and Haskell (2000) drawn upon models of **collaboration between science and special teachers** , the conclusions supported this type of collaboration and its effectiveness for all students .Within the educational team, the science teachers worked on science curriculum content area (e.g. objectives , knowledge content , modifying instructions to enhance understanding science concepts) while the special teachers planned the individualized learners goals, adapting instructions and alternative assessment (e.g. clarifying the language and the wording of questions, sequencing the activities procedure steps; illustrating the needed learning materials). The collaborated work resulted in designing lessons using alternative instructional strategies (e.g. cooperative learning, concept maps , peer tutoring) that were beneficial to both students with SEN and their peers.

Garner and Davies (2001:44) and Farrell (2006; 2008) suggest some basic strategies and approaches for the class teacher to assist the learning of students with PD such as: appropriate seating; flexibility in routines (e.g. offering a range of small tasks with clear learning targets; extended time); mixing individual and group work; the use of equipments and aids (e.g. alternative or augmented forms of communications; pencil grips); using developed programs with the help of the physical, occupational and speech therapists to engage students in learning and using **differentiation**⁵ by input, process and output.

Several strategies for teaching science were also recommended by Melber (2004). She suggested **hands-on science strategy** (which means activities oriented learning) and argued that "it is a good science instructions that are

⁵Differentiation refers to the extent to which the teaching caters for the needs of different levels of pupils' ability within the same class (Kyriacou 1997:59).

more than a modification, but rather an authentic way for any student to experience science".

In addition, Melber asserted on using the 5-Es Model⁶ by the science teacher to develop inquiry – based science lessons that believed to build skills that support all academic areas and call for active student participation.

The 5-E Model consists of five phases which are: **engagement**, **exploration**, **explanation**, **elaboration** and **evaluation**, the model describes a teaching sequence that can be used in entire programs, individual lessons and other purposes (Bybee et al 2006).

Assessment

Assessment accommodations are categorized to five ways: **setting** (e.g. changing the location of the test), **timing** (e.g. extended time; multiple breaks), **response** (e.g. responding in test booklet; using calculating devices), **scheduling** (e.g. assessment in a specific time of a day), and finally presentation (human reader; repeat directions) (Thompson et al 2005; Thurlow et al (1998, cited in Thurlow 2002)).

An authentic assessment method is another strategy suggested by Melber (2004) (e.g. Projects; illustrations; performance of a task or a skill) which provides students with alternative means for assessment rather than written tests.

⁶For extended information you can refer to BSCS web site:
<http://www.bscs.org/curriculumdevelopment/features/bscs5es.html>

Chapter 3

Methodology

Overview

This chapter includes the research design, and the research methods which were used in collecting both the qualitative data (interviews; observations; documents) and the quantitative data (questionnaire). In addition it describes the procedures to gain access to collect the data and related ethical issues.

"Researchers should ask themselves which method is best suited to the task at hand and operate on the premise that when choosing a method for the collection of data, it is a matter of 'horses for courses' "

(Denscombe 2007:134).

3.1. Research Design

A descriptive method was utilized for this study. Seeking to answer the research questions, a number of qualitative and quantitative instruments were set up to achieve this aim. Nevertheless, the quantitative instrument (the questionnaire) was used to supplement the findings obtained from the qualitative tools (observations, interviews, documents). According to Creswell (2008) this is considered as **a mixed method design** classified as *"Embedded Design"*. In this design "one data set plays a supportive secondary role in a study based primarily on the other data type[...]where] the two sets of data may be collected at the same time or sequentially" Creswell & Plano Clark(2007,cited in Punch 2009 : 296). To illustrate, this study is primarily based on qualitative approach to provide the set of data required to answer the questions. On the other hand, the second question concerning the science teachers required a different type of data which were collected by a quantitative tool.

Mixed methods strategy in its simplest meaning refers to the use of qualitative and quantitative method (Denscombe 2007).Moreover, keeping in line with Gorard and Taylor (2004) belief of the possibility of gaining "fruitful" results from combining the methods, the "quantitative work here [in this study] is based on

numbers, but not necessarily on traditional statistical theory or the standard 'frequentist' approach"(Gorard and Taylor 2004:13).

The use of the mixed methods approach was aimed to benefit this study in many aspects. It helped in checking the findings from one method against the other from a different method (Denscombe 2007). In this research the survey data, especially in the part of training programs and accommodations for the pupils, were checked against the data obtained from the officials in the MoE and the supervisors of science and special education. In addition, using different methods provided "a fuller and more complete picture" of the provision of science education for students with SEN from the main stakeholders such as teachers, supervisors, parents and the MoE & KHDA officers (Denscombe 2007). Denscombe goes further to assert that the use of qualitative and quantitative methods together are "means of seeing things from alternative perspective and, thereby, getting a more complete overview of the subject"(Denscombe 2007: 110). As it will be presented in the findings (chapter4), the provision of science education and including pupils with PD in regular primary classrooms was examined from a panoramic perspective included the involved stakeholders in addition to the researcher.

3.2 Methods of data collection

The study took place in the second semester of the school year 2008/2009. The second semester was chosen as most of educational services are delivered to the schools (e.g. special education services and teachers training programs).

To identify the educational services offered by MoE and KHDA to accommodate pupils with PD in public primary schools, the researcher spent a total of five months (April 2009 to August 2009) collecting the data. Four data collecting methods were used. Using a variety of data sources or "**triangulation**" enabled the researcher to corroborate evidence from different types of data (e.g. observational field notes & observations) , individuals (e.g. principals; teachers ;pupils) and methods (e.g. interviews; documents) (Croswell 2008) . Cohen et al (2000: 112) point out that "triangular techniques are an attempt to explain more fully the richness and complexity of human behavior [or a phenomenon] from more than one standpoint".

In the following sections the four methods presented include: the interviews, the observations, the documents and the questionnaire. In addition to the procedures which were followed to gain access to the different establishments to collect the data.

3.2.1 Gaining Access

The first step was to get recommendation letters from the British University (BUID) [my institution] to the main personnel whom the access to all types of data can be possible and legal. The letters were addressed to the MoE, the School Agency in the KHDA, and the MSA and to the Ministry of Health (presented by Dubai's School Health District) (Appendix4).

Responding to the request the KHDA issued me a permission letter to all public primary schools in Dubai to facilitate distributing the questionnaire and to enter the schools for the purpose of interviewing the staff and accessing classrooms for observations (Appendix5).The KHDA was very cooperative in giving the permission ,however, there was a difficulty (and miscommunications) in locating the officer in charge of the service of distributing the Questionnaire for science teachers .This resulted to distribute it personally to most of the primary schools (22 schools); science supervisor helped the researcher to deliver it to teachers of four schools during workshops she ran at the same period. The appointments for interviews with officers from Department of Special Education and the science supervisor for cycle one stage were arranged.

In the MoE the "*Office of Chief Executive for Teaching and Learning*" staff helped in making the communication with Special Education, Curriculum, Assessment, and Research and Studies Departments to facilitate conducting the interviews and obtaining the relevant documents for the research .The same procedures were carried out in the MSA and Dubai School Health District.

3.2.2 Ethical Issues

Procedures for gaining informed consents

The first step was to have the **KHDA consent** to access the public primary schools (see previous section).

For this research I had to distribute the questionnaire personally; this unique situation (as all questionnaires known to be mailed or e-mailed) enabled me

meet school principals or their assistants personally and deliver the KHDA consent to access schools, and also to ask their oral consent to participate in the research. I requested their approval to meet science teachers and have observations in their schools. When the approval was gained from a school; I handed the administration an informed consents for the children's parents who were the expected candidates for observation in science classes (Appendix6).The aim of the study was personally explained to each science teacher who participated in the observations.

In addition, the researcher had to get parental approval, either verbal or written to photo pupils. In fact the KHDA primarily opened the way into schools. The schools principals gave their consent to attend classes. Teachers indeed had no objection displaying their photos taken in their premises. All the pictures used in this study were limited to those which represented the physical environment for the schools and the classes or specific accommodations.

Protecting the participant rights

The researcher insured to the participants in the interviews, observations and questionnaires the confidentiality and anonymity of the names and identities. Moreover, It was stated in the informed consent for the parents their right to withdraw from the research during the period of its execution (Appendix6). The researcher also assured the teachers who were involved in the observations that the purpose of these observations is "not to make any kind of personal value judgment" and the study and observation purposes are clearly explained (Wragg 1999:65). In Spasford and Abbot view "confidentiality is a promise that you will not be identified or presented in identifiable form, while anonymity is a promise that even the researcher will not be able to tell which responses came from which respondent"(1996, cited in Bell 2005:48) .The researcher adopted this view and worked with credibility to fulfill it. The returned questionnaires were not identified by any sign, the identity of all the respondents were not known by the researcher. Moreover, the Photoshop technique was used to make the identity of the children and teachers blurred. However, this could not be achieved in interviews as in questionnaires and observations. All the names of participants in the interviews were not revealed, moreover, the researcher handed them a

copy of the research aims and questions to be informed. And the interviews were constructed on time and at the place they were determined.

3.2.3. Sampling

Purposeful sampling was used in interviews, observations and the questionnaire. The samples were chosen on basis of "their typicality" for the specific purposes of the investigation (Cohen et al 2000). The individuals were selected intentionally for **two purposes**. First: to provide useful information about the educational services offered in the provision of educating pupils with PD in public primary schools especially in science classes; for this purpose the individuals were the officials in the KHDA and the ministries, the special education and science supervisors and school principals. Second: "to give voice to [people] who may not be heard otherwise" (Creswell 2008:213-214). Science teachers and parents of the pupils with PD were chosen for both purposes.

3.2.4. Purposes for choosing the qualitative & Quantitative methods in this study

Interviews

The main purpose was to gain detailed information about the services and accommodations offered by the MoE and KHDA for pupils with PD in primary schools. Other data were also sought from interviewing formal officials such as information about statistics and future plans concerning including students with SEN.

Observations

The main two purposes for the observations were to investigate science teachers' professional skills in accommodating pupils with PD in inclusive science classrooms. Another purpose was to explore the schools physical environment and the pupil's mobility in order to gain insights about the MoE efforts in modifying the school buildings and providing learning materials and related services. In addition, observations offered a good opportunity to examine the barriers that face those children. I found Morrison (1993, cited in Cohen et al 2000:305) summarizing the purposes for the observations in this study efficiently. He points out to four basic types of data that can be gathered by observations: the physical setting; the human setting (e.g. the organization of

people; characteristics); the interactional setting (e.g. the interactions taking place) and the program setting (e.g. pedagogic styles; resources and their organization). He goes further by stating that "good classroom observation can lie at the heart of both understanding professional practice and improving its quality"(Cohen et al 2000:17).

Documents

The documents in this study consist of public and private records (see section 3.3.3) which provided valuable information that helped in understanding a necessary background of educating students with SEN in public schools in the UAE (Mertens & McLaughlin 2004; Creswell 2008). Documentary data is called secondary sources of data.

Questionnaire

Science teachers play an essential role in introducing science literacy to students. Their role has become more significant and demanding when teaching students with SEN. Moreover, their beliefs, attitudes and qualifications are reflected on meeting the needs of the students.

The aim of this questionnaire was to investigate the primary science teachers' knowledge in teaching pupils with SEN and their experiences in modifying science curriculum .The questionnaire also explored the teachers' awareness of the current policy in the UAE concerning the rights of individuals with SEN, and the challenges they were facing in teaching pupils with SEN.

3.3. Qualitative Methods in the Study

Qualitative methods are concerned with the production of meaning through a research that is carried out in an interpretative frame (Brown & Dowling 1998).These methods can lead to "insights into [...] instructional practices and interpersonal interactions that influence special education practice" in addition to "provide [in depth opportunity] to look at different levels of social ecology" Peck and Furman (1992, cited in Mertens & McLaughlin 2004:99).The qualitative methods used in this study were :interviews, observations and documents analyses.

3.3.1. Interviews

Types of interviews in this study

Semi-structured interviews

Semi-structured interviews were conducted with the major stakeholders in the sector of educating pupils with SEN in public schools. This structure is considered as a "compromise" between the unstructured and structured approaches where the interviewer has more control on the interview and flexibility in posing the questions, in addition to give the interviewee the chance to elaborate points of interest (Parson 1984 cited in Wellington 2000; Denscombe 2007). In this study 11 Semi-structured interviews were conducted with officials from the Ministries and school staff (Appendix 7).

Unstructured interviews

In conducting these interviews the researcher took the opportunities of meeting two of the children's parents who agreed of their children's participation in the observations. (Appendices 11 & 12). In addition to an interview conducted with a senior official at Dubai Health District (Appendix 8).

This type may be described as a conversation "with the interviewer working from a relatively loose set of guidelines" and the questions are open with flexible frame (Brown and Dowling 1998:73). However, the interviewer some-how brings some agenda and understanding of the objectives of the interview in mind.

Interviews Advantages and Limitations in this Study

Interviews with their flexibility helped in collecting valuable data about the different types of educational services that are available for pupils with SEN in public schools and the training programs for teachers. Moreover, they offered "insights into people's [e.g. parents and school staff] life experiences, attitudes and inspirations"; such information would not be accessible using other techniques like observation or survey (Rose and Grosvenor 2001:112 ; Denscombe 2007). In addition, as a researcher I explored many complex issues such as daily challenges that face parents in order to offer their children the opportunity to be educated in public schools and have the same choices as their peers ; another example is the way school administrators were carrying on the formal decisions of including pupils with SEN .

On the other hand, constructing interviews were time consuming especially that this study took place in Dubai where the public schools are actually under two authorities: the MoE and the KHDA, and this required investigating the educational services from many participants in both sides.

In addition, Creswell (2008) and Denscombe (2007) point to some disadvantages of face –to- face interviews which I tried to avoid .For example, the interviewer may affect interviewees responses and the data they provided are "filtered" through their views and from their perspective; on other words this may have adverse effect on the reliability of the information.

3.3.2. Observations

Types of Observations used in this study

Classroom observations were spaced over two weeks during the second half of April 2009. The researcher adopted the "non-participant" role in the observations where she tried to position herself unobtrusively within the classroom, and the pupils were not aware of any observation process. The length of each classroom observation lasted approximately 40 minutes.

Depending on the purposes of observations two approaches were used: semi-structured and unstructured observations. In the semi-structured observations a checklist consisted of categories of issues related to the purposes (e.g. types of mobility aids used; types of modifications occur) was prepared in advance (Appendices 9-12) .The checklist used to "illuminate these issues", codes were not used as no intention to generate numerical data from the observations. According to Cohen et al (2000: 305) semi-structured observations "will review the data before suggesting explanation for the phenomena being observed".

The unstructured observations were mainly narrative/free descriptions ones (Sharman et al 2007). They involved watching the targeted children and teachers during the science class periods, their interactions and participation; teachers' strategies to accommodate them and the school physical environment (Appendices 9-12).

There were five observations; four of them included science classes and the schools' physical environment (e.g. classrooms & labs locations; entrances; toilets).The fifth observation was limited to observing the pupil's movement within the school and the school's environment because the science teacher was absent .One of the first four observations was not included in the appendices because the pupil's mother showed hesitation during observing her son in the playground which made the researcher exclude the observation .

Note

As one observation was not sufficient to know the teacher efforts to accommodate those children, a brief interview followed each observation with the science teacher to explore this issue (Appendix7f).

Observations Advantages and Limitations in this Study

As a technique, observation in this study was a rich source and a direct way to obtain information, "You do not ask people about their attitudes; you watch what they do and listen to what they say"(Robson 2002: 310; Rose & Grosvener 2001). Cohen et al (2000) point to the "certain freshness" in the data obtained because of the unpredictability of the observed incidents. Moreover, the data obtained from the observations were contrasted to the data of the other tools for reliability, and offered a useful complementary source (Robson 2002). The observations provided also good opportunity to study individuals (young children with PD) who are often difficult to obtain information from them by other techniques such as interviewing (Creswell 2008).

On the other hand, it has been found from several studies that the observer existence has effects on the classroom interaction or bring a bout different behaviors (Wragg 1999 ; Cohen et al 2000; Robson 2002).In addition , the observations were limited only to the sites where I gained access to (Creswell 2008).

3.3.3. Documentary Data

Procedures

In this study the examined documents included : **First** : a number of formal policies and ministerial documents which were : Constitution of the UAE , the Federal Law No(29)/2006 for the rights of people with special needs ,The

National Standards of the Curriculum for the MoE, MSA & MoE reports and census of students with SEN in the school year 2008/2009, General Standards for Special Education Programs and Ministry of Economy Population Census of 2005 .In addition, the syllabus of science books for primary stage were obtained from Department of Curriculum.

Second: International reports concerning the education in the UAE were obtained from the UNESCO website. **Third:** Newspapers were an essential source to follow the ministerial decisions and developments in special education sector. **Fourth:** I obtained children parents' permission from to photograph them and read their medical reports.

Assessing the documents is an essential step to determine their quality and credibility. The researcher followed Scott (1990, cited in Wellington 2000:114 & Punch 2009:159) procedures in assessing the obtained documents. He suggests four criteria: *Authenticity* (evidence is genuine); *Credibility* (evidence is free from distortion); *Representativeness* (the evidence is typical of its type); and finally the *Meaning* of evidence is comprehensible.

Documents Advantages and Limitations

The documents provided "good source of text data" helped in gaining an understanding of the educational context in the UAE, moreover, the data did not need transcription as primary resources (Creswell 2008).On the other hand, many documents were difficult to locate and obtain especially from the MoE and KHDA which required the researcher several visits and negotiations and reminding e-mails.

3.4. Quantitative Method in the Study

3.4.1 Questionnaire

Questionnaire's Target Population

The researcher obtained from the KHDA lists of the names of cycle one schools and the number of science teachers in Dubai district. It was found that in the second semester of the school year 2008/2009 there were **29 primary** schools with **161 science teachers** (KHDA 2009).

In using surveys, the larger sample is the less margin of error (sampling error) occurs, which means "the less potential error that the sample will be different

from the population", and virtually the statically significant results are obtained (Creswell 2008:156; Munn & Drever 2004; Mertens & Mclaughlin 2004). The target population for this survey was science teachers in urban and suburban areas in Dubai; rural schools (3 schools) were excluded as it was difficult for the researcher to reach. The questionnaires were delivered to 148 science teachers in 26 schools.

Note: the detailed procedures and description of the questionnaire development, sample, piloting and administration are in Appendix13 due to the word count limitation.

Questionnaire's Structure

The questionnaire (Appendix14) consisted of three parts as following:

First part: A closed –ended questions developed by the researcher, consisting of nine *demographic questions* concerning teachers' background (e.g. age; years of experience; qualifications); according to Creswell (2008) the demographic questions assess the personal characteristics of the individuals in the sample.

Second part: A Likert scale measuring *teachers' feelings of competency and concerns toward inclusion of students with SEN*, consisting of 12 questions in two sections.

Firs section was adopted from a thesis's survey for Susan Ross in 2002 (see the citation in references); this section consisted of four questions that examined the feelings of competency of the teachers concern teaching pupils with SEN within the regular classroom (some replacement of disabilities terms were done to suit the UAE educational context (e.g. mental retardation was replaced by intellectual disability).

Second section was mainly from a thesis for Jack Alexander in 2001(see the citation in references); this section is consisted of eight questions measuring the teachers' concerns toward inclusion of students with SEN.

Third part: A closed –ended questions adopted from a questionnaire of the "Association of Secondary Teachers Ireland (ASTI)" titled "Schools and Students with Special Education Needs-questionnaire for teachers (2003)".I

used two questions from this survey in order to know the teachers view on the capacity of their schools to meet the needs with students with SEN (with some adaptations to suit UAE educational context).The third question in this part was added after the advisor recommendations. The questionnaire was in two versions Arabic and English (Appendix 14).

Response Rate

The response rate was very high. 148 questionnaires were distributed, 137 of them were returned. The response rate was 91.3%. This high retention rate can be referred to many factors in my opinion. It may be due to the personal communication with school administrators which helped in clarifying the aim of the study and make awareness of the importance of having the teachers' opinions in a controversial issue such as inclusion. Being a practitioner-researcher made it feasible for me to remind respondents (through their school administration) to complete the questionnaire (Munn & Drever 2004). Another reason may be due to the science teachers' desire to express their concerns about including students with SEN in regular classes; as this is one of the rare opportunities for them to make their voices heard.

Questionnaire Advantages and Limitations in this study

The researcher obtained a wide coverage of data concerning science teachers by using the questionnaire method (Denscombe 2007). In addition, one of the main advantages of using the questionnaire was to provide "standardized answers" because "the respondents were posed with the same questions with no scope for the data to be affected by 'interpersonal factors'" (Denscombe 2007:169; Munn & Drever 2004).It is clearly explained by Cohen et al (2000:128-129) statement "it [the questionnaire] tends to be more reliable; because it is anonymous".

On the other hand, the questionnaire questions may be interpreted differently by different respondents (Brown and Dowling 1998) and therefore we can not check the truthfulness of the answers (Denscombe 2007).Furthermore, although questionnaires are considered to be economical in terms of time (Cohen et al 2000; Munn & Drever 2004), the researcher found it time consuming (due to the distribution process).

3.5. Data Analysis Procedures Used in This Study

The mixed method research was considered to address the main aim of this study, which was investigating the educational service offered to pupils with PD in regular science classes. Moreover, in this study "the quantitative data [from the questionnaire] play a supportive role to the qualitative framework [...], and provide a richer description of the case [the services on offer for those pupils] in addition of qualitative descriptions" (Creswell et al 2006:8).

3.5.1. Qualitative data analysis

The main approach in analyzing the qualitative data was the "**general inductive approach**"(Thomas 2003; Denscombe 2007; Creswell 2008; Punch 2009 ; Miles & Huberman (1994, cited in Robson 2002 & Punch 2009)). Thomas (2003:2) points out that using this approach can "allow research findings to emerge from the frequent themes inherent in raw data". According to him three main purposes can be achieved by using this approach:" to condense extensive and varied raw text data into a brief summary format; to establish clear links between the research objectives and the summary findings derived from the raw data and to develop of model or theory about the underlying structure of experiences or processes which are evident in the raw data".

The '**inductive**' data analysis process in this study followed (more or less) Creswell description (2008:244). The first step after data collection was to transcribe the interviews, observations and documents into word processing documents. Transcription facilitated translation from Arabic into English. The second step was to code the data by looking for similar phrases stated by the interviewees (interviews), incidences (observations) and statements or figures in the documents and brings them together. I did the coding manually after printing copies of the transcripts. The next step was to look for common themes in the data.

Some themes or categories in this study were "pre-established" (i.e., *a priori*) and linked to the study questions; and others were derived from the data (i.e., *a posteriori*).They were "a mixture of *a priori* and *a posteriori*" categories (Wellington 2000:142).

3.5.2. Quantitative data analysis

The quantitative method used in this study was a questionnaire.

The first step to prepare the data for analysis was coding all the verbatim responses to numeric codes (see appendix15) to facilitate the input of it in the computer program (Creswell 2008).

The researcher made use of Microsoft Excel software (for its availability) to summarize the data and conduct 'Descriptive Analysis ' by using statistics (Creswell 2008). Descriptive statistics are "ways of representing some important aspects of a set of data by a single number" (Robson 2002:407).

As the analysis was done by the researcher herself, there was a need to learn how to use Microsoft Excel in obtaining the descriptive statistics. Two resources were of a great help to conduct this analysis. The Jennifer Leahy (2004) publication: "*Using Excel for Analyzing Survey Questionnaires*" and Kardi Teknomo (2007) Tutorial website "*Numerical Microsoft Excel Tutorials, Data Analysis from Questionnaire*".

According to Creswell (2008) choosing descriptive statistics in an educational research helps summarizing the overall trends or tendencies in the data which was represented by '*Measures of Central tendency*' in this study.

In addition, this software was used in the first section of the questionnaire to display some data in **a graphical charts** and to calculate the **proportions** (percentages) to show the science teachers' academic and experience background.

For questions in the second section which were of rating scale (or ranking) type, I considered using the **Mode** for each question. Mode is one of the central tendency measures; it represents the most frequently occurring value (Robson 2002; Creswell 2008). Calculating the Mode helped in illustrating the level of the distribution of the teachers responds (*strongly disagree* = 1, *strongly agree* = 5) about their feelings and concerns of teaching pupils with SEN.

Finally, in the third section of the questionnaire where the responds were expressed in categories (*Yes, No, Do not Know*) **graphical charts** and **percentages** were used to display the science teachers' views on the capacity

of their school to meet the needs of students with SEN". The questionnaire analysis is in Appendix15.

3.6. Trustworthiness of findings

The trustworthiness of the findings of this study was assessed by using two techniques. The first was methodological triangulation by which the researcher contrasted the findings from the interviews to findings of the observations, the documents and the questionnaire (and verse versa) within the study .The second was comparing the study findings with the findings from previous research (Thompson 2003; Denscombe 2007).

Chapter 4

Findings and Discussion

Overview

This study aimed to explore the services offered by the MoE and KHDA to the pupils with PD in Dubai public primary schools and the teachers feeling of competency and concerns toward teaching those children. Moreover, it intended to address the appropriate teaching strategies and the skills required by the science teachers to meet the diverse needs of pupils with PD.

Three pre-established categories were revealed from the data analysis: "*Services offered to pupils with PD in the public primary schools*", "*Professional development programs*" and "*Science Teachers Awareness and Attitudes of Including Pupils with SEN*". On the other hand three other categories were emerged from the data themselves: "*Science Teachers' Background*", "*Related Services for pupils with PD*" and "*statistics discrepancy and miscommunication*". Taking into consideration that each of these categories consists of subcategories.

"When it comes time to present 'the fruits of your labor', you should make every effort to feature the data in your presentations" (Chenail 1995).

4.1. Current Services offered to pupils with PD in the public primary schools

The services include the curriculum accommodations and school building accommodations.

4.1.1. Science Curriculum Accommodations

This section demonstrates the research findings about the accommodations for pupils with PD in four areas of science curriculum:

- Content area which includes: Standards; learning materials & assistive technologies; and Assessment).
- Teaching Strategies/ or methods.

Curriculum Content Area

- Primary Science Standards

The Curriculum Department in the MoE is an authority responsible in constructing the materials in all the areas of curriculum (for all subjects). Through documentary search the department provided the researcher with *The National Standards of the Curriculum for the MoE* document which includes the Science Curricula Standards and the Teaching Goals (Curriculum Department 2001; Appendix1). I also received a number of science text books for primary stage (e.g. Pupil's and teacher's editions) (Appendix16). A senior official in the Curriculum Department confirmed that there are no modified or aligned standards for students with SEN.

Referring to the Special Education Department (this was in June 2009) they declared that standards for special education were expected to be released in September 2009 and the researcher can have a copy then (actually it was released in November 2009).

This document stated that it aims to construct a framework based on international standards and can provide suitable educational services for the students with SEN; and it introduced an inclusion philosophy with new vision in the UAE educational context .It implied **the involvement of all students with SEN ,regardless of the type and the severity of the disability they have, in suitable classrooms with their peers in the neighborhood schools and in the least restricted environment.** Furthermore, it provided definitions for all the special needs groups who would be able to join general schools, the special education programs, the assessment procedures, transition system, teachers qualifications and parents roles and rights (Special Education Department 2009 a).The new standards are expected to be activated through the current school year 2009/ 2010.

When the whole content of this document was examined, there were no modified nor aligned standards included for various subjects (Science, Mathematics, Arabic, etc.). This can be referred to the document which stated in its preface that it aims to construct scientific and practical standards in order to provide the adequate services to the students with SEN in accordance with the international standards (in general) .Further, the curriculum standards alignment

for SEN needs collaboration between the experts from departments of curriculum and special education was missing from the scene.

On the other hand, *"The School Agency of the KHDA does not have the authority on the field of curriculum; this is the responsibility of the MoE"*, this was the reply of the senior official in the KHDA when she was asked about the modifications in the educational standards of the curriculum for pupils with SEN (Appendix7b, Q1).

Discussion

This finding is in line with a research that focused on analyzing the SEN system in the UAE by Arif & Gaad (2008). They found that "there is no special curriculum developed for special needs education". They also indicated to unscientific procedure that was done by the special teachers in delivering the curriculum (deleting what they see difficult for the students) (p.116).

Further, Gaad & Thabet (2009:170) in a recent study asserted that there is a need of "developing flexible curriculum to meet the needs of students with SEN".

- Learning Materials and Assistive Technologies⁷ (AT)

Science in primary stage includes four science text books; two of them are for pupils (pupil's book & an activity book) and two for teachers (teacher's book & assessment book) (Appendix16).The first science supervisor gave a brief description of some learning materials. He pointed out that *"this curriculum is accompanied with many educational materials such as: text books (pupil's & teacher's books, Activity book, Assessment book, transparencies and videos"* and added that *"there are no special materials for students with special needs. However, there are some links included in lesson plans in the teacher's book for some activities for pupils with SEN"* (Appendix7d, Q1 & Q2).

The researcher has copies of grade 3, 4 & 5 teacher's books .When these books were examined, lesson plans were written to guide the standards-based instructional activities.

⁷AT is technology used by individuals with disabilities in order to perform functions that might otherwise be difficult or impossible. AT can include mobility devices (e.g. wheelchairs) as well as hardware and software that assist students in accessing computers and other IT (Do-IT Factsheet #1109, <http://www.washington.edu/accessit/articles?1109>).

In addition, lesson plans that include technology (e.g. using audio books or specific computer program) were not found. Also few links were found for students with SEN and were limited only to some accommodations for pupils with Vision, Hearing or Learning Difficulties. No other needs were mentioned in all the links that I came across (an example in Appendix17).

Furthermore, the researcher (from her observations) identified few AT used by pupils with PD .They were limited to wheelchairs and walkers. No other assistive equipments were seen such as pencil grips or computer word processor.

On the other hand, the Special Education Department (as stated by the official in MoE) distributed special forms for all the educational districts to determine various needs for the schools concerning pupils with SEN in all grades. These forms must be send to the Special Education Department by the end of the school year in order to provide the districts with equipments or accommodations at the beginning of the new school year. The order forms include four categories of needs considered to meet the students with SEN: "the educational alternatives", "Specific test committee accommodations", "spatiality accommodations "and "assistive equipment supplement" (details in Appendix7a, Q5 & Appendix18).

Discussion

Examining what is in offer for pupils with PD in science classes concerning the modifications in the subject content, the **learning material** and the **AT** can be described as **scarce** and **insufficient**. What was found in this study is in line with findings of a pilot research conducted recently by Gaad and Thabet (2009) in the UAE educational context .They also asserted on the importance of learning materials in facilitating inclusion.

It is recognized in the international literature that high – quality materials that meet the science curriculum standards are difficult to find (Lee & Luykx 2007). Nevertheless, learning materials for primary science such as tactile models, computers and computer programs and modified lab equipments are available with abundance in the market and with affordable cost for the MoE and the KHDA to supply schools with.

The current science book does not have sufficient materials or recommendations of links that can offer suitable learning materials for pupils with SEN. This finding is consistent with international literature. According to Pawmar and Cawley (1993 cited in Kumar et al 2001) "in most commercial textbooks suggestions for teaching students with disabilities are noted in isolation without reference to the concurrent activity of other students" which make these books of limited use for science teachers as a resource of suggestions for addressing the needs of students with SEN.

As far as the issue of learning materials for pupils with PD in science classes, not only the resources are considered to be essential for successful inclusion, but also their successful implementation (Avramidis et al 2000).

Inflexible curricular materials and methods are seen as barriers to students with SEN just as inflexible buildings with stairs as the only entry options are barriers to people with PD (Hitchcock et al 2001:9).

- Assessment

Interviews with special education supervisor in The School Agency (KHDA) and MoE official revealed that the accommodations must be related to the pupils' Individual Educational Plans (IEPs) which include their specific needs (Appendix7a, Q6 & Appendix7b, Q6). The official in the MoE provided the researcher with the letter sent to educational districts to construct IEP for each pupil with SEN which includes all of their educational needs (Appendix19). Moreover, the special education supervisor added that "*These plans include pupils from grade 1 to grade 3. All the pupils in grade 4 and 5 are assessed with general assessment from the school or the district and there are no modifications in the final tests*".

The researcher asked also five school principals about the IEPs of the pupils with PD who were observed. No IEPs were prepared for those pupils (Appendices 7g, 7h, 7i).

On the other hand, when the teachers were interviewed, one of them pointed out to a number of modifications that she found helping her pupil with PD. She stated "*I assign another pupil to help her in carrying out the assignment by writing for her; I also decrease the amount of homework*"... "*I always give extra*

time" (Appendix7f, Q2, Teacher2); while the others did not see that their pupils needed any accommodations. Furthermore, the principals reported very limited tests modifications such as "time modification, and reading the test for the pupil" and two of them had no answer (Appendices7g, 7h, 7i, Q2).

Discussion

The data in the previous paragraphs indicated the lack of awareness by the main stakeholders responsible of subject assessment for pupils with PD (Special Education Departments, Supervisors, Science Teachers and School Principals). There was no evidence of precise guidelines for special considerations in assessing pupils with PD/or SEN in science subject matter in Dubai public schools (e.g. special arrangements for tests, assignments and exemptions from assessment). Some personal efforts were observed by the school staffs who were compelled to deal with casual cases they had to solve.

Another prominent finding was the absence of the IEPs for the pupils with PD which are considered to be the cornerstone of assessing pupils with PD/or SEN in the area of curriculum knowledge and skills (See interviews with principals Appendices7g-i, Q2).

Teaching Strategies

One of the aims of this study was to examine the accommodations done by science teachers to meet the specific needs of pupils with PD. The accommodations include their teaching strategies and the classroom physical environment modifications.

Observations were one of the tools which allowed the researcher to explore the teaching strategies used by science teachers in inclusive settings that included pupils with PD.

In the following paragraphs a brief description of the findings from two observations for two different science teachers in two different classrooms, followed by observation excerpts (3 teacher observations were conducted. The third can be seen in Appendix11 due to the word count limit).

Observation 1: Teacher (T1) used a number of changes in the classroom setting to accommodate Pupil A. She also informed the researcher that she prefers to

have the science class in the classroom (in the ground floor) and not in the lab (in the first floor) .Moreover, she used various teaching strategies such as story reading, practical inquiry activity, questioning and discussion. She also varied the strategies to illustrate the same concept. In addition, she assessed their learning by asking questions and using the activity book.

Following some excerpts from Observation 1:

*"T1 made a wide space between the two lines of desks to enable **Pupil A** to move around freely in the class using his walker or wheelchair .He was also positioned in the front [...] to facilitate his movement and reduce the obstacles on his way to the teacher's desk(Appendix9 ,Lines 2-6).*

*"No modifications were noticed or seen in the activities conducted by the pupil .I asked T1 about this issue she confirmed that **Pupil A** does not need any modifications as he functions at the level of his peers (does not appear to have any cognitive difficulties) and has good fine motor skills and uses his hands and fingers efficiently" (Appendix9, lines: 140-149).*

Observation 2: Teacher 2 (**T2**) made a number of accommodations in the classroom setting .She made a space between the desks and positioned Pupil B in the front so she could reach her easily when she needs assistance. In addition, **T2** assigned a classmate pupil to work with **Pupil B** and help her hold the materials as needed by the activity.

T2 mostly used a questioning strategy, and a lecturing. The researcher could not recognize or see any differentiation in the learning activities which may make the pupils more engaged .Limited learning materials were used (only the activity instruments). The children actually did not investigate. They were told what to do. Unexpectedly T2 only used one set of materials for all the groups, while those materials could be easily provided *"the materials were in the teacher's hands and she was waving from a distance to the pupils to see the different materials"* (Appendix10, lines 58-59).

Following some excerpts from Observation 2:

*"**Pupil B** did not receive any instructional modifications, although she needed many modifications when performing activity. The child had obvious difficulties in fine motor skills and in communication, it was clear*

that she could not speak clearly (actually I did not hear her answering any question or talking to her peers)"(Appendix10, lines: 135-143).

From another perspective, **the questionnaire** was used to probe the teachers' views about the requirement to modify science curriculum .Questionnaire question: "*What do you think modifying the science curriculum would require?*" (Appendix14, Part 3,Q3). 83.9 % of the teachers think that modifying curriculum would need "*training*"; where 86.8% think that "*Extra human resources*" is needed; and 56% think modifying assessment and 63.5% think modifying materials are needed.

Discussion

The findings showed that science teachers were doing few accommodations with their instructions not only for the pupils with PD, but also for the whole class whom (without any doubts) had diverse abilities. Observed science teachers were relying most of the time on reading text books and lecturing strategies .Very little inquiry activities for pupils were noticed or differentiated instructions were employed. In addition, teachers did not include any assistive technology in their presentations (transparencies, videos, using computer activities).

This finding has been supported by many studies findings. For example, Norman et al (1998) point out that science teachers show continuous "lack of responsiveness" to adjust the learning environment to help students with SEN to feel and accomplish success in science classes. Another study by Kumar et al (2001) indicated that "students with disabilities are not adequately accommodated in science instruction and the condition of science education for these students remains very discouraging".

On the other hand, the science teachers teaching methods can be referred to the lack of in-service training/or information they received about how to differentiate the instruction for learners with diverse abilities (Norman et al 1998; Singh 2002; Scott & Spencer 2006; McGinnis & Stefanich 2007; Arif and Gaad 2008).

4.1.2. School building accommodations

The MoE announced that 10 public school buildings in all of the Emirates "except for Abu Dhabi & Dubai" will be modified for the school year 2009/2010 as an initial step to modify all the public schools. Some of these modifications include assistive technology equipment aids which will be installed in the classrooms (e.g. FM audio aids for pupils with HI) (Naeem 2009; Ameen 2009 ; Appendix7a, Q5).

In Dubai, there is another initiative to develop the schools building .In the interview with the senior officials in the KHDA; she stated that *"The KHDA does not have the authority on the designs of the school buildings. However, the KHDA through Princess Haya initiative to develop the schools has the responsibility of the construction of the new schools in Dubai district. There are 5 schools under construction and one of them will be ready for the next school year (2009/2010). The new schools [...] will be equipped with lifts to facilitate the children's movement especially those with PD"* (Appendix7b, Q1).

Except for the ramps and one modified lavatory room, there are no accommodations in the school buildings which were observed by the researcher at the end of the school year 2008/2009. Most of the primary school buildings in Dubai are relatively old buildings .These school designs have laboratories in the first floor and not in the ground floor, and the buildings are not equipped with elevators (see the pictures in Appendices11&12).Laboratories have fixed desks and narrow aisles .What was concerning that the laboratories have only one door and a high step in their entrances .Safety is an issue for all the users.

From another perspective, when the science teachers (who participated in the questionnaire) were asked about their views of their schools accessibility to students with PD, 72% (99 teachers) of the sample find their school building not accessible, 21% (29 teachers) find the schools are accessible ,and 7% do not know (Appendix15 , Part 3 /Q 1), Figure3.

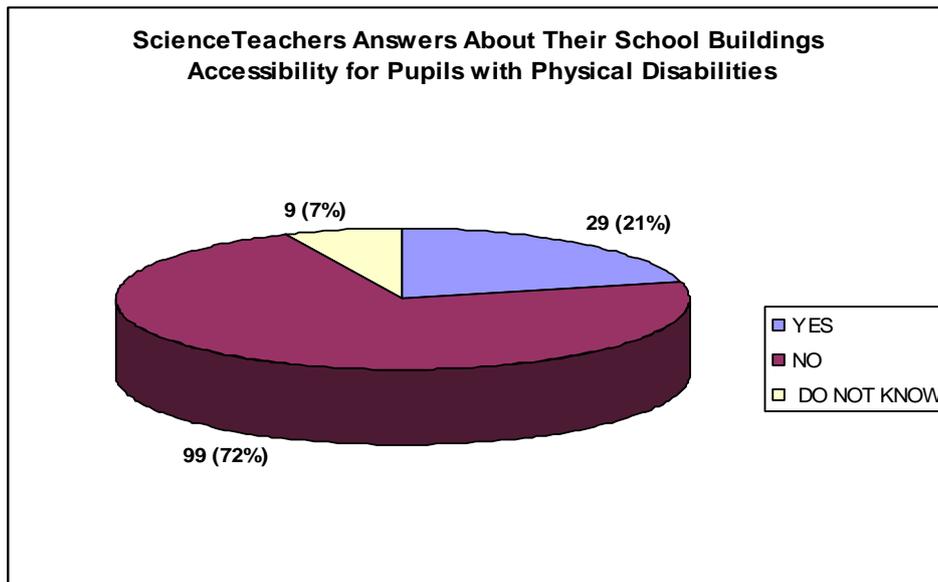


Figure 3. Science teachers views about their school buildings accessibility for pupils with PD (Questionnaire: part 3, Q1).

Discussion

The school buildings as the finding revealed are not accessible for pupils with PD. Some modifications were done to eliminate the architecture barriers (e.g. stairs, heavy doors, high doorsteps, suitable washrooms) that face children with mobility difficulties. The children were struggling to reach their classes or laboratory rooms. Some of them are with serious movement problems (Pupil C and Pupil D, Appendices 11&12). The researcher found that the four observed schools had only ramps for pupils with PD, while one of those schools also added a single lavatory. Fourth and fifth graders have to use the stairs to reach their classes. They were deprived from playtime and joining their peers in the recess or have meals together. Parents stated their daily suffering to take their children to their classes (Appendix 11&12 interviews with parents, also see the pictures).

Although this study was specific to services offered in public schools to pupils with PD, many of the physical barriers reported by the researcher and parents were in consistent with previous research examining environmental barriers for students with PD. For example, Pivic et al (2002), Hemmingsson & Borell (2002) and Mihaylov et al (2004) also reported the same architecture obstacles facing the pupils such as doors, ramps, stairs, water fountains, science laboratories

and cafeterias. Moreover, it was indicated in these studies that building structure has a direct impact on levels of child participation.

The MoE who has responsibility of the school building did not take any procedures to develop the old building .The MoE could temporarily modify the buildings to accommodate pupils with PD until the project of modifying all public schools takes place. Temporary accommodations such as notifying the schools by formal decision to locate any pupil with PD in a classroom in the ground floor , and shifting one laboratory to the ground floor (and other activity rooms).Furthermore, school administrations are obligated to prepare at least one accessible washroom at school for the pupils with mobility problems.

4.2. Professional development programs

The sixth strategic objective "Staff Professional development" is one of the MoE objectives in its strategic plan (2008-2010) which aims to:

Promote the professional development programs and systems for all of educational staff such as (administrators, teachers and technicians) in a way that achieves the Ministry's strategic objectives.

MoE Strategic Objectives, 22/4/2008

MoE (2008)

The strategic plan objectives (MoE 2008) seek to implement the main policies and regulations of the education. Including students with SEN is one of these policies, and training all the educational staff to promote this policy is a cornerstone for its success and continuance.

Interviews with the officials in the MoE and the School Agency of the KHDA revealed the main training programs concerned the professional development to promote inclusion policy. In the interview with an official in the department of special education in the MoE , she indicated that the Special Education Department with the collaboration with different educational institutions organized in the school year 2008/2009 three main training programs included different school staffs (special & general teachers ; administrators) (Appendix7a,Q9) . She also provided me with the ministerial decisions and a Newsletter of these development programs (Appendix 20).

The training programs were:

"The first one was a workshop organized in corporation with Victor Pineda Foundation on the 6th May 2009 and consisted of 18 training hours over three days. Forty special education teachers, supervisors and school principals'. The training sessions included case studies, problem solving and new educational techniques and trends. The trained teachers and supervisors would be authorized by the ministry as official trainers for their colleagues.

The second one was a training course on Braille computer and the screen reader program. It lasted for three days from June 22 to June 24 (2009). This training program target was a group of special educational supervisors and teachers.

The third one is educational courses for the teachers and the administration officials in the 10 schools chosen to apply inclusion initiative of students with SEN in the following school year 2009/2010 . This program was organized with Zayed University and included the following courses: The individuals with special needs, Classroom management and observation & assessment. Each of those courses was joined by approximately 20 teachers and school officials. The total number of participants was 64. These courses were from Jun 21 till July 2nd 2009)".

On the other hand, the science supervision division in the MoE and in Dubai district did not conduct any training programs for science teachers concerning teaching strategies or accommodations for pupils with SEN in general or PD in particular. The science supervisor for cycle one in Dubai revealed that *"We did not do any kind of training concerning teaching the students with SEN. the science training programs were on the science subject and science teaching methods"* (Appendix7c,Q3 ; Appendix7d,Q4).

In addition, the Special Education Department in School Agency in Dubai presented by the senior officer in the department and the supervisor gave vague information when asked about the training program issues .They indicated that the services are limited to schools visits done by the supervisor on a request of the school administrations for specific purposes or to conduct awareness lectures. They also did not mention any training for subject teachers (Appendix 7b, Q5).

The researcher referred to a document obtained from the same department (Department of Special Education 2009:8-25). The document stated that the department actually organized 15 specialized workshops and lectures as a professional development program for the special teachers and 10 other workshops in different topics related to special needs. Those workshops were aimed for pupils and teachers in primary schools. Nevertheless, none of these workshops were targeted for subject teachers, awareness or accommodation issues needed by pupils with SEN in general classrooms.

Viewing the professional development issue from the science teachers' perspective confirms the preceding scene. In the questionnaire of science teachers, results showed that small percentage of the teachers who participated in the questionnaire (19 %) received training in their preparation programs as teachers on how to teach students with SEN (Appendix15, Part1 /Q5), Figure4. Furthermore, 93% of them agreed that training programs would promote inclusion of students with SEN in their schools (Appendix15, Part3/Q2),Figure 5.

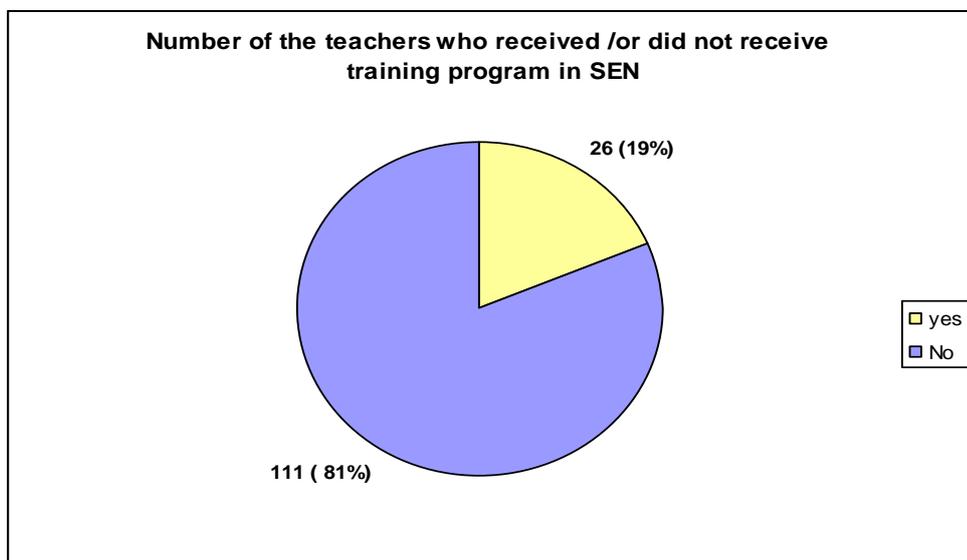


Figure 4. Number of teachers who received / or did not receive Training programs in SEN.(Questionnaire:part1, Q5).

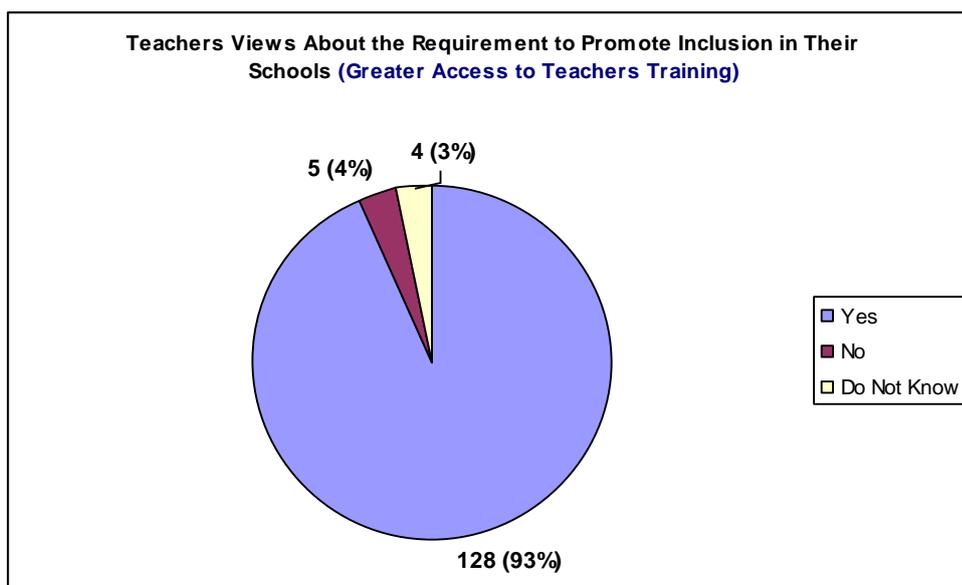


Figure 5. Teachers views a bout the requirement to promote inclusion in their schools (Greater Access to Teachers Training). (Questionnaire. Part3, Q 2).

Discussion

Three significant issues related to professional development programs deserve mentioning .First, both Dubai and Abu Dhabi educational Districts were not included in these important programs. Second, all these programs are directed to specific issues in special education such as technologies, visual impairment, classroom management and observation and evaluation .These issues are essential in educating children with SEN , however , none is directed specifically to science education , science teachers and pupils with PD who are the focus of this study. Third, is that science teachers in Dubai public schools did not receive any training concerns methods of teaching for pupils with SEN or PD, awareness or accommodation issues.

The professional development for teachers is "recognized as a vital component of policies to enhance the quality of teaching and learning in schools" (Ingvarson et al 2005: 2). Moreover, Guskey (2002: 381) indicates that "professional development programs are systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students".

The importance of professional development of general teachers has been recognized in many studies. For example, Avramidis et al (2000: 207) study revealed that not only "teachers with substantial training were positive to inclusion, but also their confidence in meeting IEP requirements was boosted as a result of their training". Another example is a study by Destefano, Shriener & Lloyd (2001, cited in Pivic et al 2002:98), in which they found that teacher training in areas of accommodations , instructional needs and curriculum improved participation and accommodation efforts as well as teacher confidence.

Furthermore, in a large-scale research of the effects of different characteristics of professional development on teachers learning by Garet et al (2001: 936) results emphasized the profound importance of subject-matter focus in designing high-quality professional development.

4.3. Science Teachers Background

Some basic information of science teachers background was drawn out from the questionnaire analysis (Appendix15). The number of science teachers who participated in this questionnaire was 137 teachers. They constituted 84% of the total population of science teachers in Dubai public primary schools (161 teachers). The teachers (N=137) were in 26 schools and all of them were female teachers (Appendix13).

The results indicated that most primary stage science teachers who were surveyed were UAE nationals (82%), Figure6. As a matter of fact most of them are Bachelors and diploma of education holders (Bachelor of Education 69%; Diploma of education 15%; 14% are Bachelors of Science and 6% are Bachelors & Masters or higher Diploma holders (Appendix15, part1 /Q1&4) ,Figure7.

The results indicated also that 10 % of the teachers have 5 years of work experience, 29% have 6-10 years, 33% have 11-15 and 29% have more than 15 years. This indicates that small percentage of the science teachers are novice teachers (10%), while the rest has more than 5 years of experience (Mode: 11-15 years).

In addition, (29.2%) of the teachers indicated that they were teaching pupils with SEN at the time of surveying (40 out of 137 teachers).

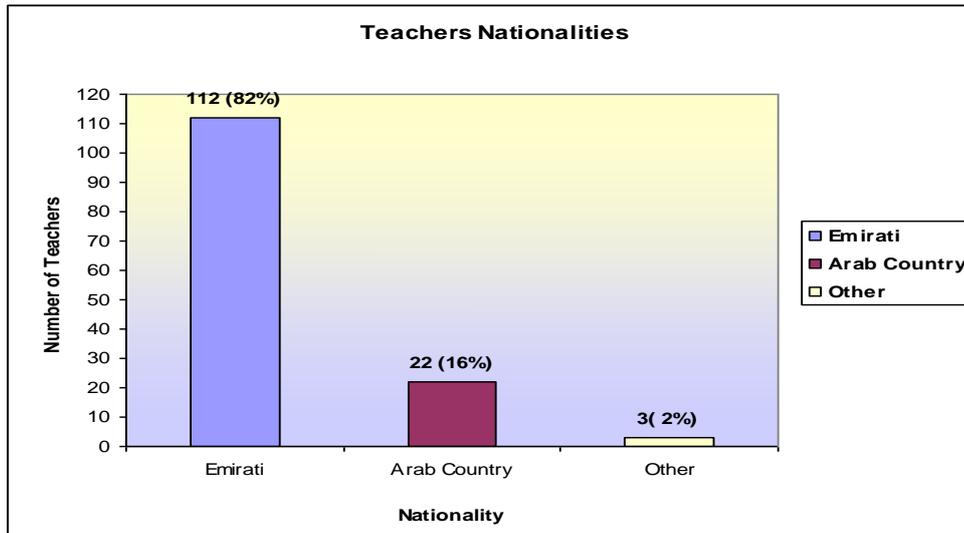


Figure 6. The Nationalities of Science Teachers in 26 Primary Public Schools in Dubai. (Questionnaire ,part1 ,Q1).

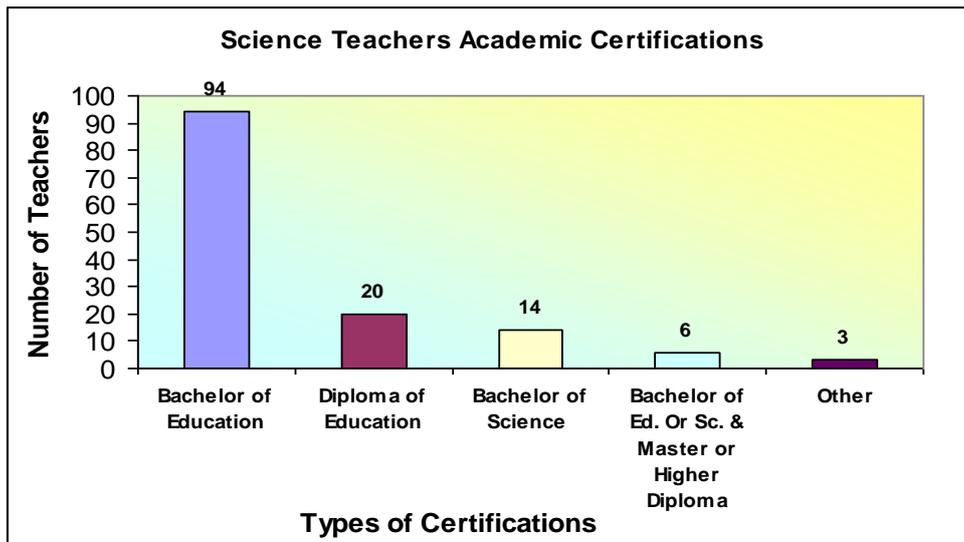


Figure 7. Science Teachers Certifications in 26 Primary Public Schools in Dubai. (Questionnaire ,part1 ,Q4).

4.4. Science Teachers Awareness and Attitudes of Including Pupils with SEN

The questionnaire was the main tool to explore the teachers awareness and their feelings of competency and attitudes towards inclusion of pupils with SEN (Appendix 14).

The questionnaire results showed that 9% (12 out of 137)of the science teachers sample was aware of the Federal law concerning the rights of individuals with special needs; while 91% were not aware (Appendix15,part1/Q6), Figure8.

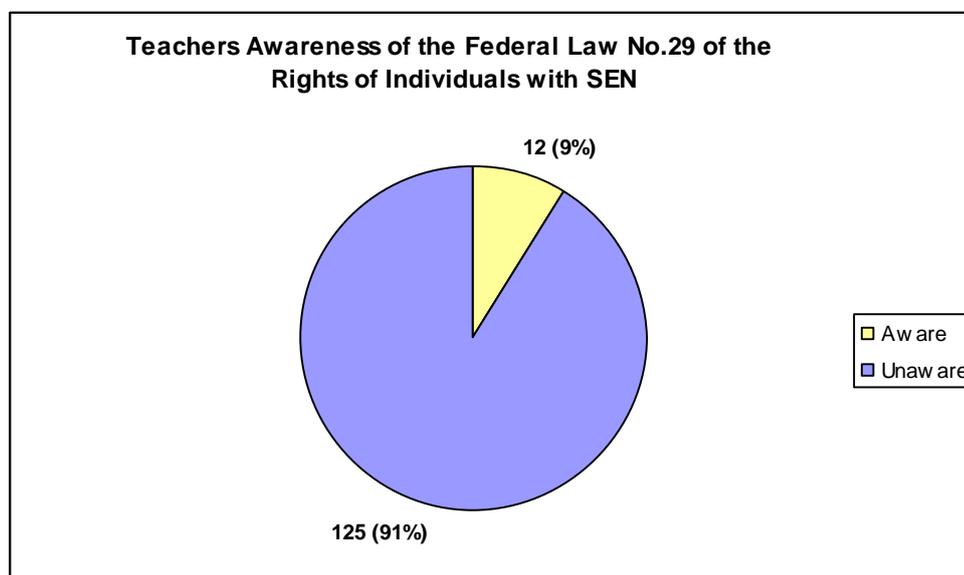


Figure 8 .Teachers awareness of the Federal Law No.29 of the Rights of individuals with SEN (Questionnaire, part1, Q 6)

Many other issues regarding the teachers concerns about teaching students with SEN were emerged from the analysis of second part of the questionnaire (Appendix15). They can be summarized as following:

- The majority of the science teachers stated that they feel they do not have sufficient guidelines or skills to work with students with SEN (Part2, Q2 & 3; Mode = 1[Strongly Disagree]).
- They expressed their concerns about the requirements of teaching students with special needs (Part2, Q8; Mode = 5 (Strongly Agree)) and the availability of necessary resources to teach them (Question 10, Mode= 5 [Strongly Agree]).
- The significant answers were for question 4 (in Part2) which showed the negative attitude of science teachers towards teaching students with SEN. The majority of them stated that they feel they were not competent teaching those children (Q4 a) to (Q4 f) ;Mode =1 [Strongly Disagree].What seemed

interesting was that their feelings of competency toward teaching the various types of SEN for the pupils are almost alike and converge on the strong disagreement choice.

In their responses to the open-ended questions in Q3 of part3 in the questionnaire (see Appendix15), many teachers reported negative statements about including pupils with SEN in a regular class. One teacher stated: "*In my opinion students with SEN need special teaching methods [...] at the same time I think that including students with special needs in regular schools will have negative effect on the psychological status of the others.*" Another teacher reported: "*Those students do not follow the rules and this is because of the special teachers who teach them .When they attend a regular class they disturb the other students and this is not on the teacher's interest and will affect the learning process*".

Discussion

Increasingly the general teachers in the UAE educational system are providing services to students with disabilities in their classes. This increase is a result with the Federal Law No. 29 /2006 which asserted the rights of persons with special needs of equal opportunities of education as others.

The finding revealed the great concerns of science teachers about the requirements of teaching pupils with special needs and their competencies and skills to work with them .These findings are in consistence with the findings of a study by Forlin (1996).In a research on teachers concerns about including pupils with physical or intellectual disabilities in their regular classes ,teachers appeared to be highly concerned by "their perceived lack of knowledge and personal efficacy regarding coping with a child with disability" (p103).

The results showed also the negative attitudes of science teachers toward including pupils with SEN in their classes. This is in line with findings of several studies by Gaad in the UAE educational context. She documented in a number of her empirical studies (Gaad 2004; Alghazo & Gaad 2004; Gaad & Khan 2007; Arif & Gaad 2008) the negative attitudes of teachers toward including students with disabilities in general classrooms.

Avramidis et al (2000) argue that the success of the implementation of challenging policies such as inclusion "surely depend upon the co-operation and commitment of those directly involved" (p: 192). They assert that the attitudes of the mainstream teachers could facilitate or constrain effective inclusion.

In addition, Kavale (2000) in a literature review study about "rhetoric and reality surrounding the integration of students with disabilities" concluded that: "The reality of general education suggests that the requisite attitudes, accommodations, and adaptations for students with disabilities are not yet in place"(p: 26).

4.5. Pupils with PD and Related Services

The recent document "*General Standards for Special Education Programs*" issued by the Special Education Department in the MoE pointed out to the role of a team of professionals who are responsible of providing services such as implementing and following up special educational programs for students with SEN in each school (some of them are not necessarily in the school on a daily basis)(p. 31-32). Those professionals might include psychologists, speech & language therapists, physiotherapists, occupational therapists, sign language specialists , assistive technology specialists and others(Special Education Department 2009 a). This indicates the existence of related services for pupils with SEN in schools. The related services mostly needed by pupils with PD are: physical, occupational and speech therapies, in addition to assistive technology specialist services.

Going over the data and close checking of the types of services which are in offer (in reality) for the pupils (e.g. Interviews with officials in MSA, with two parents of pupils with PD, and personal observation) the findings revealed the absence of these services. One parent stated "*My daughter is missing the physical and occupational therapies offered at the special needs center [...] my daughter receives regular physical and occupational therapies in a private institution on our expenses. They do not have these services in government schools*"(Appendix11, Interview with Pupil C mother).The same reply was stated

by pupil D's mother *"He does not receive any physical therapy"* when she was asked about these services (Appendix12, Interview with Pupil D Mother, Q 6).

On the other hand, the main two authorities offering those related services (i.e. Physical, occupational and speech therapies) in collaboration with MoE are Dubai School Health District and MSA as they have these kinds of services at their centers. When the senior official in Dubai School Health District was asked about the services offered to the pupils with PD who needs physical and occupational therapies, she replied that *"These services are not included in the services that are offered by the school health district. The physical and occupational therapies are technical services and not medical care for acute health cases"*, she also added that this type of service needs a formal request from the parents and they did not receive any request *"as far as she knows"* (Appendix8, Q2).

In addition, the Department of Welfare and Rehabilitation of Persons with Disability (in MSA) official replied [on a question about any collaboration between the MSA and the MoE to offer these services for the students with PD] that there is no collaboration in this field. The MSA offers this service for the children at the rehabilitation centers only (Appendix7e,Q 3).

School transportation means is also a service that is not available for pupils with PD because the vehicles are not modified .Parents and school principals who were interviewed confirmed this.

Discussion

The findings revealed the absence of related services such as physical, occupational and speech therapies. Moreover, no signs of collaboration were occurring amidst the MoE and other authorities such as MSA to provide the children with such essential services.

Many students with PD have needs which *"emerge from the physical limitations imposed by the disabilities"* and might not need special education services (Bowe 2000: 42). On the other hand, the related services have special relevance for students with PD. For example, physical therapy helps a child increase control of muscles and use specialized equipment such as braces effectively,

while occupational therapy helps the child learn diverse skills and motor behavior useful in self-help, recreation, communication and other aspects of daily living activities (Heward 2006). Supported services are vital for including pupils with PD in public schools. Furthermore, no other group of children with SEN comes into contact with as many different teachers ,physicians ,therapists and other specialist as those with physical disabilities due to their multiple needs (i.e. educational, therapeutic ,vocational , medical ,social) which affect each other(Heward 2006).

Moreover, in reality it seems like in our educational context (as in many others internationally) "Too much time has been spent talking about inclusion and not enough time evaluating it in relation to alternative service delivery arrangements and practices" King-Sears & Cummings(1996 cited in Kavale 2000).

4.6. Statistics Discrepancy and Miscommunication

4.6.1 Statistics Discrepancy

The statistics obtained do not accurately reflect the reality in Dubai pubic primary schools in terms of the numbers of children with PD. The researcher reviewed the "Achievement Report of the Special Education Supervisor" which is the formal document that included all the statistics concerning special education at Dubai public schools. The formal document has the names of the children and their schools, it included 30 pupils with different SEN in total and four of them were identified with PD (Department of Special Education 2009).

The researcher herself identified 13 pupils with different PD conditions by (Note: The researcher visited more than 20 schools (the researcher means by the word "identified" that she saw them within their school context with an obvious condition of physical limitation).

4.6.2 Miscommunication

In many situations and statements there was evidence of either lack of communication or miscommunication amidst educational departments or officials. For example, there is a clear lack of communication between science supervisory and special education supervisory of concerning teachers training. For instance, when the supervisor of science was asked if there is collaboration between the science and special education supervisions in the field of teachers

training , she replied "No, there is not" (Appendix7c , Q4) .Another example was that the report of Department of Special Education did not report any workshop for subject teachers (Department of Special Education 2009).

There is also lack of communication amidst science advisory and science teachers at Dubai educational district due to the new inspection system in Dubai specifically (KHDA 2008; Appendix21).When the science supervisor was asked about the impact of the change in the supervision system in Dubai district on their role and their communication with the subject teachers, she stated: "*As a supervisor I did not have any communication with the science teachers for more than three semesters and this has affected the teachers performance, they do not know to whom they will refer concerning the recent development of their work*" (Appendix7c ,Q2).

Furthermore, miscommunication occurred between the KHDA and the MoE concerning the professional developments for teachers .For example when the senior official in the department of special education in the KHDA was asked to explain why Dubai was not included in the training programs, she replied "*There are communications between the school Agency in Dubai and the MoE to include the teachers and school staffs in the next programs*"(Appendix7b, Q8). She also provided me with a formal letter from the CEO of the School Agency to the MoE seeking the participation of Dubai schools in these training programs (Appendix 22).

In addition, some medical reports of the pupils were not up –to –date and did not represent their current situation .No other reports were available in their schools about abilities assessment which should be done with assistance of the Department of Special Education. Without sufficient and reliable documentation, the child educational requirement cannot be met or fulfilled.

Discussion

The prevalence of inconsistent and inaccurate information is identified as a challenge in regard to the delivery of services for students with SEN (Texas Education Agency 2004). The Absence of accurate information is consequently reflected on assessing the required services for this population.

Chapter 5

Conclusion and Recommendations

Overview

This study was conducted to examine the services offered by the MoE and the KHDA in Dubai public primary schools. The accommodations provided to pupils with PD in science classrooms were the focus.

The findings have provided a panoramic picture of the current provisions for the learners with PD in public primary schools in Dubai, with snapshots of science classes including pupils with different PD conditions. These results have many implications that can be of significant benefits when considered by educators, policy makers and the educational authorities.

Mixed methods approach was used to achieve the aims of the research and answer its questions. Qualitative and quantitative data collecting methods were utilized. The qualitative data methods were interviews; observations and documents .On the other hand a questionnaire was the tool to collect the quantitative data.

"If the best possible education for all students with disabilities is to be achieved, then all forms of evidence must be considered".

Kavale (2000)

5.1. Conclusion

The aim of this study was to investigate the services offered to pupils with PD in science classes in public primary schools.

The findings demonstrate that there are a number of areas of concern regarding the services offered for pupils with PD in public primary schools and in science classes.

One of the most prominent findings that emerged from the data was the limited services offered for the pupils with PD in public schools. Although there was a

number of indications that the MoE was facilitating the inclusion process in many aspects such as offering training programs and modifying some school buildings, it is also recognized that such procedures were not enough and not going along with the increasing numbers of students with SEN who are joining the public schools and the policy of inclusion.

The first area of concern is the science curriculum .Standards are not modified to meet the diverse abilities of pupils with SEN. Moreover, the curriculum is not provided with sufficient learning materials that suit the specific needs for students with PD such as modified equipment.

The assessment is another area is where was no evidence of precise guidelines for special considerations in assessing pupils with PD/or SEN in science subject in Dubai public schools.

Physical access is another area that provokes concern. Few modifications were done to eliminate the architectural barriers; school buildings are not accessible for pupils with PD. They do not also receive any related services (e.g. physical, occupational therapies) which are considered essential to enhance their participation

Furthermore, the science teachers were unable (or inexperienced) of differentiating subject content and varying their teaching strategies .Teachers play an important role in facilitating the engagement of the pupils in the learning by adapting the lessons and providing choices in the activities (Hemmingson & Borell 2002). The lack of appropriate in-service training might caused the teachers limited abilities to differentiate their instruction to meet the needs of the students with PD.

The teachers also expressed their concerns about the requirements of teaching pupils with SEN and stated negative attitude towards teaching them.

Another discouraging finding was that science teachers in Dubai public schools did not receive any training concerns teaching methods for students with SEN or PD, awareness or accommodations issues.

Data consistently indicated that lack of communication or miscommunications was occurring among the authorities (e.g. MoE, KHDA, Schools administrations; Dubai School Health District) who are responsible of delivering the educational and related services to pupils.

5.2. Recommendations

The results stress the need of urgent intervention from the MoE and KHDA to provide adequate services to students with PD in public schools and to eliminate the institutional and physical environment barriers (e.g. inadequate learning materials and teaching methods; disability unawareness) .Some recommendations to improve and enhance the services are following:

- Immediate accommodations at school buildings in Dubai are needed to eliminate the environmental barriers faced by students with PD. These adaptations must take into account the safety issues especially in laboratories.
- Science supervisory division in the MoE and School Agency in Dubai must work to provide school laboratories with equipments accessible for students with PD and other SEN. This can be achieved by keeping up with the latest inventions and be fully acquainted of the modern equipments (through research & investigation).
- I strongly recommend the subject supervisors and the science teachers to read and seek all the available sources to educate themselves about inclusive education and effective teaching methods for diverse abilities. The inclusion issue is the most important development in our educational system and every citizen is obliged to make it work in all aspects.
- The science (and subject) teachers must have professional assistants in their classrooms if the inclusion of students with SEN wished to be implemented efficiently.
- More supervisors personnel must be recruited. The special education and science departments in Dubai were under staffed in supervisors in the school year 2008/2009 (Department of Special education 2009). In fact one Supervisor for the whole special education department can not carry out enough or

sufficient training programs for special or subject teachers because of the huge work load. The same recommendation is valid for science department.

- More accurate studies by the Department of Special Needs in Dubai School Agency (KHDA) needed to identify the specific number of students with PD in the public schools. Accurate statistics is a basic necessity to determine and develop the appropriate educational services that meet their specific needs.

- The MoE and the KHDA in Dubai must provide in-service training about disabling conditions and special education laws to all available teachers and school staffs (namely the subject supervisors who are responsible of training programs).

- The MoE and the KHDA in Dubai must provide in-service training for subject teachers in teaching methods for students with disabilities.

- Assistant staff should be available to supervise children with mild to moderate physical disabilities while practicing transfers and other mobility skills such as self propulsion throughout the school day and within the school environment (Australian Physiotherapy Association APA 2008: 3) .

- The degree of participation in school activities among pupils with PD is affected by a set of barriers "that is unique to this population"(e.g. physical environment, teachers' attitude). Therefore, a "future research should utilize this information to develop intervention strategies that have a greater likelihood of success" (Rimmer et al 2004).

5.3. Study Limitations

This study is limited to investigate services offered to pupils with PD in Dubai public primary schools. Some limitations must be considered.

First, the study relates to the educational context of Dubai. Dubai educational sector has been oriented to more autonomy since the establishment of the KHDA and this affected the Supervisory system and the professional development plans. Consequently; some findings pertain Dubai educational

district and can not be generalized for all of the Emirates. As the other Emirates educational staffs were more exposed to training programs in the last two years.

Moreover, generalizations of the findings about the population of science teachers and pupils with PD to other subject teachers and pupils with different SEN must be made with caution because of the different requirements and knowledge content of other subjects (e.g. mathematics ; languages) , and the different needs for different disabling conditions.

Finally, word count was a challenge as many issues emerged from the investigation needed to be addressed such as the educational context in Dubai as the recent changes occurred by establishing the KHDA agencies had dramatic impacts on the training programs and teachers appraisal.

5.4. Directions for Future Research

The results of this study helped in clarifying the situation of pupils with PD in Dubai public primary schools and in identifying the missing services that are essential to meet their needs in regular schools and science classes.

Further research is needed to examine the situation of pupils with other disabilities and the educational services available for them in schools. Another area to be addressed in future research is to identify the services needed from parents and pupils perspective. In a study related to barriers and facilitators to inclusive education Pivic et al stressed on "the need to include both students and their parents in the evaluation of inclusive school environments and in planning of new facilities or renovations" (2002:104).

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Appendix 1

The National Standards of the Curriculum for the MoE, Science Education Document, page: 29- 31

Source :Curriculum Department. (2001). *The National Standards of the Curriculum for the MoE*.Dubai:Ministry of Education.

The Standards

1. Learners develop their understanding and capabilities in the following concepts and operations: Regulations and Analysis; Arrangement and Management; Guide, models and explanation; Change and steadiness and measurement; Patterns and expectation; Evolution and poise; Form and function.
2. Learners develop their understanding and capabilities in the process of scientific investigation. They design and carry out and convey their knowledge and evaluate its results.
3. Learners build a scientific knowledge that is related to the qualities of the material and energy, and its forms and changes.
4. Learners build a scientific knowledge that is related to the characteristics of the organisms and its vital operations and the interaction of these organisms with one another and with their environment.
5. Learners build a scientific knowledge about the earth installation, its operations and dynamics, regulations and other orbs in space.
6. Learners develop a scientific knowledge about the interrelationships between science and technology and their impact locally and globally.
7. Learners adopt positive attitudes regarding environmental issues, health and other related technology issues and its impact on society.
8. Learners understand the nature of science in a historical context and its impact on the general scientific transformations in human life.

The General Goals for Teaching Science

1. Consolidate the Islamic faith and deepen their faith in God through meditation of his creatures and natural phenomena in the universe and the laws that govern it.
2. Absorb the nature of science, history and scientific methodology and highlight the role of scholars and scientists especially Arabs and Muslims and appreciate their efforts.

3. Prepare the learner to understand scientific knowledge on the way that he can interpret the natural phenomena and use them in solving problems and making personal, social and economic decisions.
4. The learner employs the scientific investigation to develop the scientific thinking skills.
5. Develop the scientific habits, tendencies, trends and values to achieve positive interaction of the learner with himself and his society.
6. Prepare a capable citizen for understanding critically the mutual relations between science, technology and society and their impact on the human well-being and progress.
7. Provide the learner with scientific skills that gives opportunities to advanced learning, and create appropriate scientific professions for his tendencies, abilities and the needs of his society.

Science Strands in the document

1. Concepts and Operations.
2. Science as a method of investigation.
3. Physical sciences.
4. Bioscience.
5. Earth Science and Space.
6. Science and Technology
7. Personal and social views in science.
8. The nature of science and its history.

Appendix (2)
Number of Students in Care & Rehabilitation centers in the U.A.E Government & Private Sectors By Type of Disability, 2008-2009

م	اسم المركز	الإمارة	التبعية	الإعاقة الذهنية	التوحد	الإعاقة السمعية	الإعاقة الجسدية	الإعاقة البصرية	الإعاقة المتعددة	المجموع
1	مركز العين لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	خاص	156	10	43	10	7	6	232
2	مركز الرعاية الخاصة	أبوظبي	خاص	47	13	0	1	0	2	63
3	مركز العين الخاص لرعاية وتأهيل المعاقين	أبوظبي	خاص	100	17	7	9	0	4	137
4	مركز النجاح لتأهيل الخاص	أبوظبي	خاص	17	13	5	5	0	0	40
5	مركز المستقبل للرعاية الخاصة	أبوظبي	خاص	103	24	3	1	1	51	183
6	مركز أبوظبي للتوحد	أبوظبي	حكومي اتحادي	0	33	0	0	0	0	33
7	مركز الخليج للتوحد	أبوظبي	خاص	0	35	0	0	0	0	35
8	مركز الواعدة لذوي الاحتياجات الخاصة	أبوظبي	خاص	21	18	0	0	0	5	44
9	مركز السلع لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	حكومي محلي	12	2	8	5	3	1	31
10	مركز غياثي لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	حكومي محلي	14	1	6	3	1	0	25
11	مركز النجوم للقدرات الخاصة	أبوظبي	خاص	13	7	3	0	0	0	23
12	مركز القوع لرعاية وتأهيل المعاقين	أبوظبي	حكومي محلي	13	0	5	5	3	5	31
13	مركز مدينة زايد لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	حكومي محلي	24	3	5	7	3	4	46
14	مركز ابوظبي لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	حكومي محلي	111	0	0	28	8	0	147

م	اسم المركز	الإمارة	التبعية	الإعاقة الذهنية	التوحد	الإعاقة السمعية	الإعاقة الجسدية	الإعاقة البصرية	الإعاقة المتعددة	المجموع
15	مركز زايد الزراعي للتنمية والتأهيل	أبوظبي	حكومي محلي	44	0	0	0	0	0	44
16	مركز الأمل لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	خاص	9	1	0	0	0	5	15
17	مركز الإمارات للتوحد	أبوظبي	خاص	0	43	0	0	0	0	43
18	مركز تنمية القدرات لذوي الاحتياجات الخاصة	أبوظبي	خاص	28	9	0	0	0	0	37
19	مركز النور لرعاية وتأهيل ذوي الاحتياجات الخاصة	أبوظبي	خاص	67	8	18	17	0	0	110
20	مركز نيو إنجلند للأطفال	أبوظبي	خاص	0	0	25	0	0	0	25
21	مركز الشبيخة ميناء لرعاية وتأهيل المعاقين	دبي	حكومي محلي	26	0	3	9	0	0	38
22	مركز دبي للرعاية الخاصة	دبي	خاص	74	17	5	22	0	12	130
23	مركز دبي للتوحد	دبي	خاص	0	43	0	0	0	0	43
24	مركز دبي لتأهيل المعاقين	دبي	حكومي محلي	82	0	14	23	7	4	130
25	مركز الإمارات لذوي الاحتياجات الخاصة	دبي	خاص	25	2	0	0	0	6	33
26	مركز النور لتدريب وتأهيل ذوي الاحتياجات الخاصة	دبي	خاص	94	69	0	0	0	88	251
27	مركز راشد لعلاج الطفولة	دبي	خاص	73	0	6	19	19	15	132

م	اسم المركز	الإمارة	التبعية	الإعاقة الذهنية	التوحد	الإعاقة السمعية	الإعاقة الجسدية	الإعاقة البصرية	الإعاقة المتعددة	المجموع
28	مدينة الشارقة للخدمات الإنسانية	الشارقة	حكومي محلي	217	58	98	21	24	269	888
29	مدينة الشارقة للخدمات الإنسانية	الذيد	حكومي محلي	45	5	12	4	0	9	75
30	مدينة الشارقة للخدمات الإنسانية	خورفكان	حكومي محلي	58	5	14	0	0	13	90
31	مدينة الشارقة للخدمات الإنسانية	كلباء	حكومي محلي	52	3	1	4	2	7	69
32	أولادنا للتعليم والتأهيل	الشارقة	خاص	36	28	2	0	0	0	66
33	المركز التخصصي لرعاية الطفل	الشارقة	خاص	12	3	0	4	0	0	19
34	مركز عجمان لتأهيل المعاقين	عجمان	حكومي اتحادي	64	0	5	12	0	0	81
35	مركز رأس الخيمة لتأهيل المعاقين	رأس الخيمة	حكومي اتحادي	113	4	19	12	0	4	152
36	المركز التخصصي لذوي الاحتياجات الخاصة	رأس الخيمة	خاص	29	0	0	0	0	0	29
37	مركز رأس الخيمة للتوحد	رأس الخيمة	خاص	0	21	0	0	0	0	21
38	مركز الفجيرة لرعاية وتأهيل المعاقين	الفجيرة	حكومي اتحادي	65	0	11	1	0	4	81
39	مركز دبا الفجيرة لتأهيل المعاقين	دبا الفجيرة	حكومي اتحادي	59	1	0	1	0	1	62
		المجموع Total		1903	496	318	223	78	515	3533

Summary of the table:

	Intellectual Disability	Autism	Hearing Impairments	Physical Disabilities	Visual Impairments	Multiple Disabilities	Total
Numbers of Students	1903	496	318	223	78	515	3533

Source: Ministry of Social Affairs.,(2009). Dubai: Department of Welfare and Rehabilitation of Persons with Disability.

Appendix (3)
إحصائيات إدارة التربية الخاصة في وزارة التربية والتعليم لعام 2008-2009
Statistics of Special Education Department (MoE) for the School Year 2008-2009

م	الموضوع	أبوظبي	الغربية	العين	دبي	الشارقة	عجمان	أم القيوين	رأس الخيمة	الفجيرة	مكتب الشارقة	المجموع
1	عدد معلمي التربية الخاصة وغرف المصادر	79	20	66	56	46	27	21	54	54	44	467
2	عدد المدارس التي بها خدمات تربية خاصة	45	13	58	30	30	20	13	34	32	24	299
3	عدد المدارس التي لا توجد بها خدمات تربية خاصة	57	5	37	10	40	21	12	15	21	22	240
4	عدد فصول التربية الخاصة	42	14	29	19	17	9	4	35	30	22	221
5	عدد غرف المصادر (صعوبات التعلم)	33	2	37	23	22	18	14	14	22	18	203
6	عدد غرف المصادر (الموهبة والتفوق)	3	4	3	5	2	1	1	3	2	1	25
7	طلاب ذوي الاحتياجات الخاصة المدمجين في الفصول العادية	162	5	158	22	107	-	15	5	6	6	486
8	طلاب ذوي الاحتياجات الخاصة في فصول التربية الخاصة	237	137	163	8	121	47	23	248	234	159	1377
9	عدد الطلاب المترددين على غرف مصادر صعوبات التعلم	366	34	434	1054	793	710	437	596	782	716	5922
10	عدد الطلاب المترددين على غرف المصادر (موهبة وتفوق)	77	734	124	535	344	-	-	216	52	11	2093
11	عدد النقص في معلمي التربية الخاصة	25	7	7	10	28	18	2	10	9	19-	135
12	عدد اختصاصي النطق واللغة	2	-	4	3	3	3	1	1	2	2	21
13	يوجد قسم تربية خاصة في المنطقة	نعم	نعم	نعم	نعم	نعم	لا يوجد	لا	لا	لا	لا	
14	عدد الإداريين ومنسقي التربية الخاصة في المنطقة	1	1	6	2	2	1	1	1	1	1	17
15	عدد موجهي التربية الخاصة	3	1	3	1	1	2	1	-	2	2	16

Summary of the table:

المجموع	مكتب الشارقة	الفجيرة	رأس الخيمة	أم القيوين	عجمان	الشارقة	دبي	العين	الغربية	أبو ظبي	الموضوع	
المعدل 30	47	51	59	20	17*10	56	56	20*19*15*15	20	24*27*25	النصاب لكل موجه تربية خاصة	16
6	1	لا يوجد	-	-	2	1	1	1	لا يوجد	-	النقص في موجي التربية الخاصة	17
163	9	5	4	5	10	14	27	43	لا يوجد	46	عدد طلاب الإعاقة السمعية	18
148	15	3	2	2	13	24	13	41	لا يوجد	35	عدد طلاب الإعاقة الحركية	19
191	33	7	1	6	15	13	22	53	لا يوجد	41	عدد طلاب ضعف البصر	20
34	1	3	3	1	1	4	2	7	لا يوجد	12	عدد طلاب كف بصر	21
57	-	2	4	2	-	21	9	10	لا يوجد	9	عدد طلاب الإعاقة الذهنية	22
3487	716	782	236	-	710	169	134	276	98	366	عدد طلاب صعوبات التعلم	23
2117	159	234	596	-	47	600	47	158	39	237	عدد طلاب حالات التأخر الدراسي	24
299	57 (صحية) 91 (صعوبات نطق)	نطق 42	32 توحد (2) سلوك (30)	3	دمج 10	31	6	4	1	22	عدد طلاب الحالات الأخرى	25

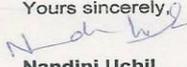
	Hearing Impairments	Physical Disabilities	Visual Impairments	Intellectual Disability	Learning Difficulties	Slow Learners	Other Conditions Autism , Behavior disorders ,Health probems ,Sipeech disorders
Total Numbers of Students	163	148	225	57	3487	2117	299

Source : Special Education Department .,(2009). *Statistics of Special Education for the School Year 2008-2009*. Dubai : Ministry of Education.

Appendix (4)

Recommendation letters from the BUID to the Ministry of Education to assist the researcher in her dissertation.

Note : The dissertation title changed during the revision stage.


2 April 2009
Mr. Yousif AlShaiba AlSheriani Chief Executive for Educational Affairs Ministry of Education United Arab Emirates
This is to certify that Ms Kaltham Rashed AlYateem – Student ID No. 70120 is a registered part-time student on the Master of Education – Special Education programme in The British University in Dubai , from January 2008.
Ms AlYateem is working on her Dissertation titled Science Curriculum and Special Education - Modification and Teaching Strategies for students with Physical Disabilities"
The case study investigation will include:
<ul style="list-style-type: none">• Facilitate interviews with the Manager of Special Education Department, the Manager of Assessment Department and the Manager of Curriculum Department to investigate the services offered by the Ministry of Education to accommodate students with special needs in schools and science classes.• Available publications and statistics concerning special education such as: procedures to activate inclusion process, identifying the different types of special education needs, the number of special education teachers and students with special needs (and especially with physical disabilities).
This letter is issued on Ms AlYateem's request.
Yours sincerely,  Nandini Uchil Head of Student Administration

P O Box: 502216, Dubai, United Arab Emirates Tel.: +971 4 391 3626, Fax: +971 4 366 4698 www.buid.ac.ae

Recommendation letter from the BUID to the School Agency (KHDA) to assist the researcher in her dissertation.



1 April 2009

Her Excellency Mrs. Fatma Al Marri
CEO of the Schools Agency
Knowledge and Human Development Authority
Dubai, United Arab Emirates

This is to certify that **Ms Kaltham Rashed AlYateem – Student ID No. 70120** is a registered part-time student on the Master of Education – Special Education programme in The British University in Dubai, from January 2008.

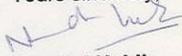
Ms AlYateem is working on her Dissertation titled, **"Science Curriculum and Special Education - Modification and Teaching Strategies for students with Physical Disabilities"**

The case study investigation will include:

- Distributing a questionnaire to Science teachers in cycle one stage (grades 1-5) with the help of the science and the cycle one supervisors.
- Facilitate interview with the Manager of Special Education Department to investigate the services offered by Knowledge and Human Development Authority to accommodate students with special needs in schools and science classes.
- Facilitating interviews with the science, the special education and the cycle one supervisors to investigate the programs offered for science teachers to accommodate students with special educational needs (especially with physical disabilities) in science classes.
- Facilitate observing a number of students with physical disabilities at your schools, and interviewing the principals to investigate the available services for those students in the school and in science classes.
- Available publications and statistics concerning special education such as: procedures to activate inclusion process, identifying the different types of special education needs, the number of special education teachers and students with special needs (and especially with physical disabilities).

This letter is issued on Ms AlYateem's request.

Yours sincerely,


Nandini Uchil
Head of Student Administration



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Recommendation letter from the BUID to the Ministry of Social Affairs to assist the researcher in her dissertation.



19 August 2009

Mrs. Wafa Hamad Binsulaiman
Ministry of Social Affairs
Director of Welfare
and Rehabilitation of Persons with Disability Department
Dubai, United Arab Emirates

This is to certify that **Ms Kaltham Rashed AlYateem – Student ID No. 70120** is a registered part-time student on the Master of Education – Special Education programme in The British University in Dubai, from January 2008.

Ms AlYateem is currently working on her dissertation and the topic is **Science Curriculum and Special Education - Modification and Teaching Strategies for Students with Physical Disabilities"**

Ms AlYateem is involved in the following activities as part of her research on the above topic:

- Investigating the services offered by the ministry to integrate the students with disabilities in the mainstream schools.
- Collaboration between the Ministry of Social Affairs and the Ministry of Education to offer physical and occupational therapies to the students with physical therapy. *disab*
- Available publications and statistics concerning the number of students with disabilities in both the public and the special sectors rehabilitation centers.

This letter is issued on Ms AlYateem's request.

Yours sincerely,

Nandini Uchil
Head of Student Administration



P O Box: 502216, Dubai, United Arab Emirates
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Appendix (6)

Informed consent for parents of children who were candidates of participation in the Research Project observations.

استمارة موافقة من ولي الأمر (للمشاركة في مشروع بحث ماجستير)

عنوان الدراسة: مناهج العلوم والتلاميذ ذوي الاحتياجات الخاصة – مواءمة البيئة المدرسية ومناهج العلوم للتلاميذ ذوي الاحتياجات الخاصة (وخاصة الإعاقات الحركية).

الباحثة: كلثم راشد اليتيم

المؤسسة التعليمية: الجامعة البريطانية في دبي
مقدمة:

أنا كلثم راشد، طالبة ماجستير في الجامعة البريطانية في دبي، أقوم ببحث تدريس مادة العلوم في المدارس الحكومية من الحلقة الأولى والتي تقوم بدمج التلاميذ من ذوي الاحتياجات التعليمية الخاصة في صفوفها وخاصة من لديهم إعاقة حركية. وأريد استقصاء الخدمات التعليمية المقدمة لهم ، كما سيتم استقصاء إلى أي مدى يتم تعديل مناهج العلوم لهم بما يتلاءم مع حالتهم ويحقق المتطلبات التعليمية الملائمة، مع بحث مبررات هذه التعديلات .

غرض الدراسة :

ستقوم الباحثة بهذه الدراسة لاستكمال متطلبات الماجستير في التعليم، برنامج التربية الخاصة " Master of Education , Special Education Program " . وهي تطلب تعاونكم لانجاز هذه المهمة .

الإجراءات الخاصة بالدراسة :

- في هذه الدراسة سيتم ملاحظة التلميذ في مادة العلوم ، في صفه أو المختبر لحصنين ، كما سيتم جمع معلومات من معلمة العلوم عن حالته الدراسية و التعديلات التي تقوم بها لملاءمة مادة العلوم لحالته التعليمية (الخطة الفردية للتلميذ) ، وتطوره الدراسي من خلال هذه الخطة. وكذلك عملية تقييمه دراسيا.
- سيتطلب البحث أيضا التحدث مع التلميذ (إن أمكن) وسوالها/ سؤاله عن عملية تعليمه في المدرسة، وقد يتم أخذ نسخ من بعض أعماله الكتابية، أو تصويره أثناء أداء بعض الأنشطة التعليمية (دون إظهار للاسم أو صورة الوجه).
- إجراء مقابلة مع ولي أمر التلميذ إذا لزم الأمر.

الحق في رفض المشاركة أو الانسحاب منها:

لكم مطلق الحرية في اشتراك ابنكم / أو ابنتكم في هذه الدراسة أو الرفض، كما يحق لكم الانسحاب منها قبل انتهائها . ولن تترتب أي عواقب سلبية على التلميذ نتيجة ذلك .

سرية المعلومات :

إن المعلومات التي سيتم الحصول عليها من المدرسة والمعلمة ستبقى سرية. لن يتم الكشف عن اسم ابنكم / أو ابنتكم ، أو أي شيء يدل على هويته في الدراسة. إن المعلومات سيطلع عليها فقط مدرّس المادة الدراسية للباحثة، وحتى لو تم نشر الدراسة في مجلة علمية فإن اسم ابنكم وهويته لن يتم الكشف عنها.

لمزيد من المعلومات :

إذا كان لديكم أية استفسارات عن هذه الدراسة يمكنكم الاتصال بالباحثة على رقم هاتفها: 0507031009

إقرار ولي الأمر بالموافقة :

لقد قرأت وفهمت متطلبات الدراسة، وأوافق بالتطوع وبمشاركة ابنتي / أو ابني فيها.

اسم ولي أمر التلميذة / التلميذ :
توقيع أو بصمة ولي الأمر:
التاريخ:
توقيع الباحثة:

Appendix (7)

Semi-Structured Interviews

Appendix 7a

Interview with an official (supervisor) in the office of the Special Education Department in the Ministry of Education :

Date: 25 th June 2009

Time: 12:30 p.m. – 1:20 p.m.

Place: Ministry of Education, an office in the Special Education Department

أولاً: أسئلة خاصة بتعليم ذوي الاحتياجات الخاصة في دولة الإمارات العربية بشكل عام:

First: Questions on the Education of Pupils with Special Education Needs (SEN) in the United Arab Emirates (UAE) .

1- ما هي الفئات التي تصنف في نظام التعليم العام في دولة الإمارات كحالات لها احتياجات تعليمية خاصة / أو إعاقات؟

Q1- What are the categories that are considered of special educational needs in the UAE educational system?

The categories are: Visual impairments, Hearing impairments, Intellectual disabilities, Physical and Health disabilities and Behavior and Emotional disorders.

2- هل توجد تعريفات لكل فئة من فئات الاحتياجات التعليمية الخاصة / أو الإعاقات؟ (في حالة وجودها الرجاء ذكرها أو توفير نسخة منها)؟

Q2- Is there definition of each category of the special education needs /or disability? (Please give these definitions or a printed copy of them).

The definitions will be included with the special education standards which should be ready on September 2009.

3- كيف يتم التشخيص في نظام التعليم الحكومي للتلميذ كحالة من فئات ذوي الاحتياجات الخاصة؟ وفي أي مرحلة يتم؟

Q3- How is a pupil with a special educational need diagnosed in the public education system and at what stage?

There are two types of assessment teams (or what is called the diagnosis teams) .The first one is in each educational district and the other is in each school for all stages. The first team consists of the following officials:

- The special education supervisor (as the head of the team).
- The coordinator of the special need department in the district (as the reporter of team).
- The psychological specialist (member).
- Special education teacher (member).
- The speech therapist (member).
- A subject supervisor (when needed).

This team has the responsibility of assessing the students who come to the educational district from the schools or on the request of the parents, and the team writes a report for the student. The assessment includes several screening psychometric tests (Intelligence Quotient (IQ) tests), the student's speech ability and sometimes other assessments depending on the case. Depending on this report the team decides if the student entitles the special needs services (special classroom, or speech therapy or other services).

The second team is in each school and this is a new initiative which was introduced during this school year (January 2009). The purpose of this initiative

is an attempt to contain any difficulty or problem (e.g. Social, Academic or behavior difficulties) faces any student in each school .This team will try to deal and treat these difficulties before they develop and the student transfer to special classroom or receive special education service. The ministry trained the special education supervisors for this initiative and each district can seek their help to train the school staffs for this assignment.

4- هل تتوفر خدمات تعليمية للتدخل المبكر للأطفال ذوي الاحتياجات الخاصة؟

Q4- Is the early intervention educational service available for the children with special needs?

The services will cover all the educational stages from the kindergarten to the secondary in the new special education standards.

5 ما الذي وفرته الوزارة من خدمات في المجالات التالية:

- توفير المناهج الدراسية الملائمة (أو ما يعرف بالتعديلات أو الموامة للمعايير العلمية) لتلائم مع قدرات التلاميذ ذوي الاحتياجات الخاصة ؟
- توفير الوسائل والتقنيات والاستراتيجيات البديلة لأغراض التدريس لفئات الاحتياجات الخاصة / أو الإعاقات بشكل عام والإعاقات الحركية بشكل خاص ؟
- توفير البيئة المادية الميسرة والتي تشمل:
المبنى المدرسي (وسهولة التنقل به لذوي الإعاقات الحركية) ؟
المختبرات العلمية (سهولة دخولها والمشاركة في الأنشطة العملية ، بالإضافة إلى وسائل السلامة) ؟
دورات المياه (سهولة الوصول إليها واستخدامها من قبل التلاميذ ذوي الإعاقات الحركية) ؟

Q5- What are the services that are offered by the MoE in:

- **The field of the curriculum (or the modifications in the educational standards of the curriculum) to meet the special education needs?**
- **The alternative materials, techniques and strategies for teaching the students with SEN, especially for teaching science?**
- **The modifications in the learning environment which includes: School building (facilitating the mobility of pupils with special needs in it), science laboratories and the safety facilities in them, and lavatories for special needs?**

-The special education standards will be released on September 2009 as we mentioned, and will include the modification needed for the different needs for each type of the special educational needs.

- The ministry of education provides visual and auditory equipments and computers for students with visual, hearing and physical disabilities. But there are no special materials or equipments for science subject.

The ministry provides the needed equipments depending on the annual reports sent from the educational districts which contain the requirements for their students who have special education needs (I will give a copy of one of those reports , Appendix 18).They include exactly four types of accommodations needed to by students with SEN:

1-The first type is "the educational alternatives" (الإجراءات والبدائل التربوية) which includes speech therapy classes, the need of sign language for student with hearing impairments and training programs for the school staffs concerning that, awareness workshops for the students, the full inclusion for some students when they transfer from level to another level, physical therapy courses for students with PD and assigning helper to assist students movement and transition within the school building.

2- The second type is "Specific test committee" accommodations

(الاحتياج للجنة خاصة) which concern the need for private classroom (with assistant teacher or less students) during final tests.

3- The third type is "spatiality" accommodations in the school (الاحتياجات المكانية في) (المدرسة) which concern the accommodations for the building to facilitate students with disability movements and daily needs (e.g. ramps, modified lavatories, modified desks, bells with light alarm for students hearing impairments) and eliminating the physical obstacles which they might face.

4- The final type is the "assistive equipment" needed to accommodate some students (الاحتياجات من الأجهزة) such as hearing & vision aids and wheelchairs.

- About the school buildings the Special Education Department communicates with department of buildings in the ministry on regular basis and when needed (especially when including new students with SEN) to do accommodations in the buildings, and lavatories.

As it was announced there are 10 schools in the different Emirates (except for Dubai and Abu Dhabi) will be equipped to accommodate the different types of special educational needs including modifications in the buildings .

6- وما هي إجراءات أو طرق التقييم المتبعة في الاختبارات النهائية و التقييم المستمر خلال الفصل الدراسي للتلاميذ ذوي الاحتياجات الخاصة ؟ (وهل توجد معايير لهذا النوع من التقييم) ؟

Q6- What are the procedures followed to assess the pupils with SEN in the continuous assessment and final tests? Are there special standards for the assessment?

All kinds of assessment accommodations depend on the student Individual Educational Plan (IEP) prepared by the diagnosis team. And each student gets the adaptations according to his/her specific needs.

ثانيا : أسئلة خاصة بتعليم العلوم لذوي الاحتياجات الخاصة :

Second: Questions on Science Education for pupils with SEN:

7 – ماهي المواد التعليمية الخاصة الموفرة من قبل إدارة التربية الخاصة والتي تساعد في تدريس العلوم للتلاميذ ذوي الاحتياجات الخاصة ومشاركتهم في الأنشطة العملية (وذوي الإعاقات الحركية على وجه الخصوص)؟ مثال الأدوات المخبرية المعدلة والوسائل التعليمية المحسوسة والوسائل التكنولوجية ؟

Q7- What types of education materials are offered by the Special Education Department to schools concerning science education for pupils with SEN, specially those with physical disabilities?

There are no kinds of these materials at the present time.

8 - هل تم تعديل معايير تعليم العلوم للتلاميذ ذوي الاحتياجات الخاصة (والإعاقات الحركية بشكل خاص) بما يمكنهم من تحقيق نفس المخرجات التعليمية للتلاميذ الذين ليس لديهم إعاقات ؟

Q8- Did the ministry modify the educational standards for science to meet the abilities of pupils with SEN and enable them to achieve the same learning outcomes as their peers?

There will be standards for special education for all types of special educational needs. The IEPs for the students with SEN will be aligned with these standards, and each student will receive modifications in the subjects depending on his IEP.

9- ما دور إدارة التربية الخاصة في توفير الدورات التدريبية لمعلمي المواد كمادة العلوم والتي تشمل استراتيجيات وطرق التدريس الخاصة بالتلاميذ ذوي الاحتياجات الخاصة في ظل سياسة دمجهم في المدارس العامة باختلاف فئاتهم؟ في حال إجراء هذا النوع من التدريب : ما هي بعض الأمثلة عليها ؟

Q9- What is the role of the Department of Special Needs in the provision of teachers training programs for subject teachers (such as science teachers) in teaching strategies for special needs? Can you please give examples for these training programs?

In the current school year there were three major training programs for the teachers (and school staffs) .We will provide you with documents which includes

their purposes , dates and the individuals (teachers and other education staff) who participated in each one.

The first one was a workshop which was organized in corporation with Victor Pineda Foundation on the 6th May 2009 and continued for 18 hours over three days. Forty special education teachers, supervisors and school principals' participated .It included case studies, problem solving and new educational techniques and trends. The ministry aimed that the trained teachers and supervisors are authorized by the ministry as official trainers for their colleagues.

The second one was a training course on Braille computer and the screen reader program. It continued for three days form June 22 to June 24 (2009).This training program aimed a group of special education supervisors and teachers.

The third one is educational courses for the teachers and the administration officials in the 10 schools which were chosen to apply inclusion initiative of students with special educational needs in the following school year 2009/2010 .These courses are in cooperation with Zayed University, these courses include: The individuals with special needs, Classroom management and observation & assessment. Each course will be joined by approximately 20 teachers and school officials. The total number of participants is 64. These courses started on Jun 21 and will end on July the second.

(She provided me with a copy of a newsletter that includes information about the workshop that was done for the school staffs in the 10 schools which are also under buildings modifications for the students with SEN).

ثالثا : إحصاءات ووثائق :

التكرم بتوفير الإحصاءات للآتي :

- 1- أعداد التلاميذ ذوي الاحتياجات الخاصة / أو الإعاقات بفئاتهم المختلفة في الإمارات بشكل عام وفي مراحل التعليم المختلفة؟ وإمارة دبي بشكل خاص؟
- 2- أعداد معلمي التربية الخاصة؟ وصفوف التربية الخاصة؟ وغرف المصادر؟
- 3- معايير التعليم لذوي الاحتياجات الخاصة.

Can you please give statistics concerning the following issues?

- 1- **The number of students with SEN/or disabilities and the types of these needs in the UAE public schools? Specifically in Dubai district?**
- 2- **The number of special education teachers; the number of special classes and resource rooms in the public schools?**
- 3- **The standards of special education?**

All the statistics you asked are not available at present time .We promise to provide you with them as soon as they are ready.

Note: The department provided the researcher with the requested documents in August and in November 2009.

Appendix 7b

Date: 28 th June 2009

Time : 9:30 a.m.

Place: School Agency (KHDA) reception hall.

Interview with 2 Senior Officials in the School Agency of the KHDA in Dubai and the supervisor of special education

الوقت: الساعة التاسعة والنصف، بتاريخ 28 يونيو 2009

المقابلة تمت في مبنى هيئة المعرفة والتنمية البشرية . وقد تصادف وجود مسؤولة كبيرة في مؤسسة التعليم المدرسي في قاعة المبنى أثناء وجودي مع موجهة العلوم للحلقة الأولى لإجراء مقابلة معها ، وقد قمت باغتنام هذه الفرصة وعرض بعض الأسئلة التي قمت بإعدادها لمديرة إدارة التربية الخاصة (أو من ينوب عنها ، وموجه التربية الخاصة) ، فقامت المسؤولة مشكورة بالإجابة على جزء من الأسئلة وقامت باستدعاء مسؤولة رئيسية في إدارة التربية الخاصة ومستشار التربية الخاصة للإجابة على باقي الأسئلة .

الأسئلة من 1 إلى 3 قامت بالإجابة عليها مسؤولة في مؤسسة التعليم المدرسي في هيئة المعرفة والتنمية البشرية. الأسئلة الباقية قام بالإجابة عليها كل من مسؤولة كبيرة في إدارة التربية الخاصة في مؤسسة التعليم المدرسي والأستاذ مستشار التربية الخاصة في المؤسسة.

The first three questions were answered by a Senior official in the School Agency of the Knowledge and Human Development Authority

1- ما الذي وفرته هيئة المعرفة في منطقة دبي (ممثلة بإدارة التربية الخاصة والإدارات الأخرى) من خدمات في المجالات التالية:

- أ- توفير الوسائل والتقنيات والاستراتيجيات البديلة لأغراض التدريس لفئات الاحتياجات الخاصة / أو الإعاقات بشكل عام والإعاقات الحركية بشكل خاص ؟
- ب- توفير البيئة المادية الميسرة والتي تشمل:
المبنى المدرسي (وسهولة التنقل به لذوي الإعاقات الحركية) ؟
المختبرات العلمية (سهولة الوصول إليها واستخدامها من قبل التلاميذ ذوي الإعاقات الحركية) ؟
دورات المياه (سهولة الوصول إليها واستخدامها من قبل التلاميذ ذوي الإعاقات الحركية) ؟
- ج- توفير المواد التعليمية الخاصة التي تساعد في تدريس العلوم للتلاميذ ذوي الاحتياجات الخاصة ومشاركتهم في الأنشطة العملية (وذوي الإعاقات الحركية على وجه الخصوص) ؟
مثال الأدوات المخبرية المعدلة والوسائل التعليمية المحسوسة ؟

Q1 -What are the services that are offered by the KHDA in:

- **The field of the curriculum to meet the special education needs?**
- **The alternative materials, techniques and strategies for teaching the students with SEN, especially those for teaching science?**
- **The modifications in the learning environment which includes: School building (facilitating the mobility of pupils with special needs in it), science laboratories and the safety facilities in them and lavatories for special needs?**

The School Agency (SA) of the Knowledge and Human Development Authority (KHDA) does not have the authority on the field of curriculum; this is the responsibility of the Ministry of Education.

The KHDA did not receive any requests from the public schools to make any modifications in the laboratories. The KHDA provided some schools with learning materials for students with SEN such as: computers, Braille equipments. There are no materials specifically for science.

The KHDA does not have the authority on the designs of the school buildings. However, the KHDA through Princess Haya initiative to develop the schools has the responsibility of the construction of the new schools in Dubai district, and there are 5 schools under construction and one of them will be ready for the next

school year (2009/2010). The new schools are designed to be accessible for students with special needs, and they will be equipped with lifts to facilitate the children's movement especially those with physical or other needs.

Q2- The researcher added another question concerning the modifications in the old schools buildings:

How does the KHDA intervene to accommodate the children with physical disabilities who study in the public schools with old buildings and provide the safe transportation for them, (and I showed the Senior official the pictures of the pupils with physical disabilities who were observed in their schools for the research and described their struggling – as witnessed by the researcher -to reach their classes in the first floor every school day and to use the school buses)?

I assure you that the KHDA did not receive any request from any public school to do any changes in the buildings or the laboratories or installing lifts. All the requests that the KHDA received were about installing white boards or modifying the lavatories. The school administration has to know the right authority to address their requirements.

Concerning the schools transportation the KHDA is collaborating with the Roads and Transport Authority in Dubai (RTA) for this issue. The RTA has issued the school Transport Manual with the collaboration with the KHDA, and the specifications of the school buses (including the accommodations for students with special needs) were passed on to the Emirates Transport Foundation which controls the schools transportation. These specifications and accommodations need extra budgeting, but they will be put into effect in the near future.

3-ما هي خدمات التدخل المبكر للأطفال ذوي الاحتياجات الخاصة؟

Q3- What kind of early intervention services are offered for the children with SEN?

The Knowledge and Human Development Authority is cooperating with the Community Development Authority in Dubai to deliver such services for Dubai public schools. We are working to reach an agreement with them to provide us with consultations and teacher training program concerning the early intervention for the children with SEN .We are looking forward to start these services the next school year (2009/2010).

[The following questions were answered by a Senior Official in the special education department and the special education Counselor \(Supervisor\) at the School Agency of the KHDA.](#)

[The following questions were answered by the special education counselor:](#)

4- كيف يتم التشخيص (أو التقييم) في نظام التعليم الحكومي للتلميذ كحالة من فئات ذوي الاحتياجات الخاصة ؟ وفي أي مرحلة يتم ؟

Q4- How the pupil with a special educational need is diagnosed in the public education system and at what stage?

The pupil who faces academic difficulties is usually recognized by the class teacher who informs the school administration the need for abilities diagnoses for the child. This diagnose is done by a number of personnel in school who conform a committee to look at the pupil case and make the different assessment for him/or her to determine his/or her eligibility for the special education services. They are the class teacher, the special education teacher, the social specialist and the psychiatric specialist.

5- ما دور إدارة التربية الخاصة في توفير الدورات التدريبية لمعلمي المواد كمادة العلوم والتي تشمل استراتيجيات وطرق التدريس الخاصة بالتلاميذ ذوي الاحتياجات الخاصة في ظل سياسة دمجهم في المدارس العامة باختلاف فئاتهم؟ في حال إجراء هذا النوع من التدريب : ما هي بعض الأمثلة عليها ؟

Q5- What is the role of the Department of Special Needs in the provision of teacher training programs for subject teachers (such as science teachers) in teaching strategies for special needs? Can you give examples for these training programs?

The special education counselor visits the schools which request his advice or consultation. He also gives awareness lectures or workshops in these schools for the teachers who have pupils with SEN.

(The counselor did not mention any specific training program for subject teachers).

6- ما هي إجراءات أو طرق التقييم المتبعة في الاختبارات النهائية والتقييم المستمر خلال الفصل الدراسي للتلاميذ ذوي الاحتياجات الخاصة؟ (وهل توجد معايير لهذا النوع من التقييم)؟

Q6- What are the procedures that are followed to assess the pupils with SEN in subjects area (science; math; etc.)? Are there special standards for the assessment?

The pupils with special needs who study in special classrooms within the general school have Individual Education Plans (IEPs), and any assessment's accommodation depend on them. These plans include pupils from grade 1 to grade 3. All the pupils in grade 4 and 5 are assessed with general assessment from the school or the district and there are no modifications in the final tests.

[The following questions were answered by the Senior Official in the special education department:](#)

Q7 - I want to repeat a question that was asked to the senior official in School Agency about the early intervention services that are offered for the children with SEN/or disabilities?

There are no direct services in the present time for early intervention; however, the department asserted on the kindergartens and primary schools administrations to be aware of the children academic and health situations to discover any cases needs the help as soon as possible.

Q8-What is the department plan concerning the services offered to the students with SEN/or disabilities?

The department plan is within the strategic plan for the KHDA which -in the present time – is been revised and not yet approved. Yet, I can give you what has been done since the establishment of this department, I mean the present plan. There is vertical and horizontal expansion in the services within the available budget. The vertical expansion means that we started the services for the kindergarten and cycle one than they will be offered for the higher stages (circle two and the secondary stage).While the horizontal expansion means that we cover all the grades in each stage. For example, in cycle one the services covered grade 1 to 3 and it will be offered to grade 4 and 5.

Q10- Why is Dubai educational district excluded from the training programs for the teachers & school staffs which concern the inclusion of students with SEN (that were offered by the Ministry of Education during this school year 2008/2009)?

There are communications between the school Agency in Dubai and the MoE to include the teachers and school staffs in the next programs (She provided me with a formal letter from the CEO of the School Agency to the MoE seeking the participation of Dubai schools in these training programs, Appendix (22).We were confirmed by the MoE that Dubai schools will be included in the future.

Q11- The researcher did not see during the observations concern the study any collaboration between the science teachers and the special /or resource room teachers, how can you explain this?

There is acute shortage in the number of special and resource room teachers which may explain what you observed .But there are many schools where the resource room teacher shares the classes with the subject teacher to help in teaching students with SEN. There services include introducing special learning strategies for those children in the regular class.

ثالثا : إحصاءات ووثائق :

التكرم بتوفير الإحصاءات للآتي :

أ- أعداد التلاميذ ذوي الاحتياجات الخاصة / أو الإعاقات بفئاتهم المختلفة وفي مراحل التعليم المختلفة في إمارة دبي بشكل ؟

ب-أعداد معلمي التربية الخاصة ؟ وصفوف التربية الخاصة؟ وغرف المصادر ؟

ج- نوع وعدد الدورات لمدرسي المواد (مثل مادة العلوم) والمختصة بطرق تدريس التلاميذ ذوي الاحتياجات الخاصة المدمجين في الصفوف العادية في المدارس الحكومية ؟

Can you please give statistics concerning the following issues:

- a. The number of students with SEN/or disabilities and the types of these needs in Dubai's public schools?**
- b. The number of special education teachers; the number of special classes and resource rooms in the public schools?**
- c. The training programs offered by the special education department for the public schools teachers?**

The director promised to give me a copy of the department's annual report which includes all these data as soon as they finish them. They gave me the report two weeks later.

Appendix 7c

Interview with the Science Counselor (supervisor) in Dubai's School Agency (KHDA)

Date: 28 th June 2009

Time: 12:00-12:20 p.m.

Place: School Agency (KHDA) reception hall.

التاريخ: 28 يونيو 2009 الساعة 12:00 – 12:20 ظهرا
تمت المقابلة مع مستشارة مادة العلوم للحلقة الأولى في منطقة دبي .
المكان: قاعة الاستقبال في مبنى هيئة المعرفة والتنمية البشرية

1- ما عدد سنوات الخبرة العملية في التعليم (وتوجيه العلوم بشكل خاص) ؟

Q1- Can you please give the number of years working as a science supervisor?

I have 8 years of experience in this field , the total years of experience as a teacher and than as a supervisor is 20 years.

2 - هل أثر تغيير نظام التوجيه التقليدي على دور موجهي العلوم من حيث طريقة التواصل مع معلمي العلوم واستمراريتها خلال السنة الدراسية ؟ الرجاء التوضيح .

Q2- Does the change in the supervision system in Dubai district affect the supervisors' role and the means of communication with the subject teachers?

As everybody in the field knows, this is the school year 2008/2009 which the new inspection system began to evaluate all the schools in private and public sectors including teachers. Our previous role as supervisors was ended more than one year since the establishment of the School Agency in Dubai, former to that the supervisor used to have two visits to his teachers each school year. There was continuous communication between the teachers and us regarding the curriculum and teaching issues. As a supervisor I did not have any communication with the science teachers for more than three semesters and this has affected the teachers performance, they do not know to whom they will refer concerning the recent development of their work. Speaking about my self I was a science supervisor for cycle 2 (grade 6-9) for 6 years and I have been assigned this year (2008/2009) as a counselor for cycle 1 for grades 1-3 , domain 2 which means class teachers for science and math .

3- كيف يقوم توجيه العلوم بتدريب معلمي العلوم في مرحلة الحلقة الأولى لمواءمة المادة الدراسية للتلاميذ ذوي الاحتياجات التعليمية الخاصة / أو الإعاقات ؟ هل يمكنك إعطاء أمثلة على بعض البرامج التدريبية ؟

Q3- How does the science supervision train the teachers to adapt the science curriculum to meet the needs of the students with special needs? Can you give examples of some of the training programs?

We did not do any kind of training concerning teaching the students with SEN. All of the science training programs are on the science subject and science teaching methods.

4- هل يوجد تعاون بين توجيه العلوم وتوجيه التربية الخاصة في منطقة دبي التعليمية في مجال تدريب وتأهيل معلمي العلوم لتدريس التلاميذ ذوي الاحتياجات الخاصة / أو الإعاقات ؟ الرجاء التوضيح.

Q4- Is there collaboration between the science and special education supervisions in the field of training the science teachers concerning accommodating and teaching strategies to meet the needs of the students with SEN/or disabilities?

No, there is not.

5- كيف يتم تقييم التلميذ في مادة العلوم في مرحلة الحلقة الأولى (من الصف الأول إلى الخامس) في الجوانب التالية:
المادة الدراسية النظرية و الأنشطة العملية

Q5- How the pupils in grades 1-5 are assessed in science in the different aspects of the subject?

The assessment for grade one to three depends on assessing the skills that the pupil acquire and this is conducted by the teacher through observing each pupil during different classes. There are special assessment cards for this purpose. Furthermore, pupils in these grades do not have final tests; the teacher assesses their performance by using observations during the classes, small quizzes and their activities and homework.

On the other hand , pupils in grades four and five have performance assessment for the practical activities which they study .The teachers usually assess the pupils while carrying on the science activities or experiments in the laboratory and there are an assessment card to measure different skills .

There are also what is known as continuous assessment which depends on observing the pupil's participation in the class different activities, homework and small quizzes. In addition there are final tests at the end of each semester.

6 - ما هي التعديلات التي تم إجراؤها لطرق التقويم في مادة العلوم للتلاميذ ذوي الاحتياجات الخاصة بفئاتهم المختلفة مثل الإعاقات الحركية ؟

Q6- What are the assessment modifications done to meet the diverse needs of the students specially those with physical disabilities?

There are no formal modifications as far as I know.

Appendix 7d

Interview with the First Supervisor of Science in the Ministry of education (MoE)

Date: 16th of August 2009

Time: 1 – 1:30 p.m.

Place: Ministry of Education / Department of Professional Development

Q1- Can you give a brief description of the science curriculum for the primary stage (e.g. the date of its implementation and the educational materials that are included with it?

The current science curriculum is the Harcourt Science Series which the ministry adopted since the school year 2002/2003 .The implementation started gradually for the grades 1 to 5, than for the secondary level and it will be completed for cycle 2 stage (grade 6-9) the coming school year 2009/2010.

This curriculum is accompanied with many educational materials such as:

-text books (pupil's book, teacher's book, Activity book, Assessment book for teachers .

-Transparencies and videos.

I was a member in the adaptation committee, there were standards to adapt the knowledge content of this curriculum because it is from a foreign country and was originally written in English. Some of these standards are:

- The pictures and the drawing included should be appropriate to the Arabic Muslim society.

- The warding of the text books should be selected to be appropriate for the age of the learners and easy to be understood.

- The suitability of the final editing of the text books for students.For example, the sequence and the beginning and the end of each activity, the place for the new vocabulary and the lesson objectives.

Q2- Are there any educational materials (e.g. modified learning activities or worksheets, specific experiment equipments) for the students with special educational needs (SEN)?

There are no special materials for students with special needs. However, there are some links included in lesson plan in the teacher's book edition for some activities for the students with special needs.

Q3 -What are the assessment methods for the pupils in cycle one stage (grades 1-5)?

Measuring the acquired skills is the main procedure to assess the pupil in grades 1 to 3. The teachers carry out the assessment by using observation cards which are provided by the supervision of the subject and it is carried out continuously during each semester. There are observation cards for many skills such as classification, observation, comparison, measurement, deduction and communication. These cards are usually used when the pupils perform activities or experiments individually and also when working within groups. The assessment also includes observing the pupil's participation in the class activities, following up the homework & his/or her worksheets and some quizzes.

For grades 4 and 5 the assessment consists of observing the pupils different skills during learning process the same way as grades 1 to 3.This assessment usually occur during carrying out experiments in the laboratory or working collaboratively in

different class activities .Moreover, they have final written tests at the end of each semester ,The tests come from the educational district for all the schools .There are specifications for the test paper which should be followed by the teacher who are in charge of writing the test. These specifications depend on knowledge content of the learned units and the time period for each of them. The teacher has the assessment book which includes many suggestions for the assessment instruments that can be used for each part of the units. Furthermore, there are tables for the outcomes of each unit and its proportional weight compared with the other units and there are some proposed assessment methods for the different lessons.

(He gave me samples for the observation forms, the specifications for the tests papers for grade 4 and 5 and the tables for the learning outcomes; attachments of some of them are at the end of the interview paper).

Q4- What are the main training programs for the science teachers?

There are training programs for the knowledge content of the science curriculum mainly, these programs are generalized by the supervision of science and include all the science teachers in the country except for Dubai and Abu-Dhabi districts since the school year 2006/2007 because they established their own educational councils.

Q5- In you opinion what are the main challenges posed to science education in the UAE public schools sector?

The main challenge in my opinion is the teachers' competency in teaching science especially in primary stage (grades 1 to 5).The cause for that starts from the university. The educational and pre-service programs (in education colleges) for teachers do not have the adequate amount of science knowledge, they have poor science knowledge .Moreover, many science teachers in the primary stage were only with education Diploma which was offered by the MoE (this was a program in the 1980s for teachers last for 2 years and qualified the applicants to teach primary stage all the subjects).Many of those teachers continued their education in an affiliation program which was offered by the UAE university to facilitate for the teachers continuing their higher education (for those who can not leave their jobs and go to Al Ain).This program focused on administrative and other educational issues and not on subjects (e.g. science) teaching methods or content.

Another cause for teachers' inadequate competency is the training programs offered by the ministry for the teachers. Most of the training programs also focus on the educational strategies and not on the science subject.

Another challenge in science education is that the science supervisors are not specialized in science education. All of the science supervisors for cycle one (the primary stage) are originally chemistry, biology or physics supervisors (qualified in these subjects) and assigned by the ministry to supervise the primary stage. For your knowledge science curriculum for cycle one and two has diverse parts. In some grades it concentrate on biology , others on physics .The supervisors do not have the competency for all of these subjects which of course affects their work as counselors for teachers.

Samples of Skills Assessment Checklists for pupils in cycle one

Communication Checklist (Grades 1-3)

استمارة ملاحظة لتقييم مهارة التواصل لصفوف (1-3)

اليوم والتاريخ:
اليوم والتاريخ:
اليوم والتاريخ:
أسم الطالب:

ممتاز			مرضي			تحت المتوسط			المعايير
9	8	7	6	5	4	3	2	1	
									التعبير شفوياً وتحريراً عن الملاحظات
									كتابة التقارير العلمية
									قراءة الرسوم والجدول والبيانات
									تنظيم البيانات والنتائج في جداول

رأي المعلم:

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Classification Checklist (Grades 1-3)

استمارة ملاحظة لتقييم مهارة التصنيف لصفوف (1-3)

اليوم والتاريخ:
اليوم والتاريخ:
اليوم والتاريخ:
أسم الطالب:

ممتاز			مرضي			تحت المتوسط			المعايير
9	8	7	6	5	4	3	2	1	
									تحديد الصفة التي هي أساس التصنيف
									يصف الأشياء وفق صفة واحدة
									يميز وينتقي الأشياء وفق الصفة التي حددها
									يصنف الأشياء في مجموعات وفق الصفة المحددة ويسمي المجموعات

Observation Checklist (Grades 1-3)

استمارة ملاحظة لتقييم مهارة الملاحظة لصفوف (3-1)

اليوم والتاريخ:
اليوم والتاريخ:
اليوم والتاريخ:
أسم الطالب:

ممتاز			مرضي			تحت المتوسط			المعايير
9	8	7	6	5	4	3	2	1	
									استخدام الحواس بمهارة للتمييز بين الأشياء
									استخدام أدوات لمساعدة الحواس في إجراء الملاحظة
									تكرار الملاحظة من أجل الدقة
									إعطاء مجموعة من الملاحظات التي تصف التغير الحادث لجسم أو لحدث في صورة كيفية

Observation Checklist (Grades 4&5)

استمارة ملاحظة لتقييم مهارة الملاحظة لصفوف (5 , 4)

اليوم والتاريخ:
اليوم والتاريخ:
اليوم والتاريخ:
أسم الطالب:

ممتاز			مرضي			تحت المتوسط			المعايير
9	8	7	6	5	4	3	2	1	
									استخدام الحواس بمهارة للتمييز بين الأشياء
									استخدام أدوات لمساعدة الحواس في إجراء الملاحظة
									تكرار الملاحظة من أجل الدقة
									إعطاء مجموعة من الملاحظات التي تصف التغير الحادث لجسم أو لحدث في صورة كمية
									التمييز بين الثوابت والمتغيرات
									ترتيب الأحداث أو المشاهدات وفقاً لحدوثها

رأي المعلم:

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Deduction Checklist (Grades 4&5)

استمارة ملاحظة لتقييم مهارة الاستدلال لصفوف (4-5)

اليوم والتاريخ:

اليوم والتاريخ:

اليوم والتاريخ:

أسم الطالب:

ممتاز			مرضي			تحت المتوسط			المعايير
9	8	7	6	5	4	3	2	1	
									إجراء الملاحظة
									التوصل إلى الخصائص الظاهرة
									توظيف الخبرات السابقة
									الربط بين الخصائص الظاهرة وغير الظاهرة
									التوصل إلى الاستدلال
									اختبار مدى صدق الاستدلال
									إجراء ملاحظات جديدة
									تأكيد الاستدلال السابق أو تعديله

Table of Science Test Paper Rubrics for Grade 4 (First Semester)

جدول مواصفات الورقة الامتحانية للصف الرابع (الفصل الدراسي الأول) المادة : العلوم

عدد الحصص	الدرجة	النجم	عمليات عقلية عليا	التطبيق	الفهم والاستيعاب	المعرفة (التذكر)	الوزن النسبي	النواتج التعليمية	المحور
11	25	2	3	3	7	10	%25	1- يحدد بنية تركيب الخلية في أنواع مختلفة من الكائنات الحية.	العلوم الأحيائية
7	15	-	1	3	5	6	%15	2- يبين أجزاء أجهزة جسم الإنسان وكيفية عملها ووسائل العناية بها.	
14	35	1	3	6	11	14	%35	3- يوضح خصائص الأنظمة البيئية والتغيرات التي تحدث فيها ووسائل حمايتها.	
11	25	2	3	3	7	10	%25	1- يتعرف القوى التي تغير شكل سطح الأرض.	العلوم الأرضية والفضاء
43	100	%5	10%	15%	30%	40%	%100	نسبة التركيز	المجموع

Table of Science Test Paper Rubrics for Grade 4 (Second Semester)

جدول مواصفات الورقة الامتحانية للصف الرابع (الفصل الدراسي الثاني) المادة : العلوم

عدد الحصص	الدرجة	القيم	عمليات عقلية عليا	التطبيق	الفهم والاستيعاب	المعرفة (التذكر)	الوزن النسبي	النواتج التعليمية	المحور
7	20	1	2	3	6	8	20 %	1- يتعرف حركات مياه المحيط ودوره في حدوث دورة الماء في الطبيعة.	علوم الأرض والقضاء
8	25	-	3	4	8	10	25 %	1- يستكشف خصائص الطاقة الضوئية	العلوم الفيزيائية
10	35	3	3	5	10	14	35 %	2- يستكشف خصائص الطاقة الكهربائية والمغناطيسية	
7	20	1	2	3	6	8	20 %	3- يستكشف تأثير القوى المختلفة على حركة الأجسام.	
32	100	5 %	10 %	15 %	30 %	40 %	100 %	نسبة التركيز	المجموع

Appendix 7e

Interview with an official in the Department of Welfare and Rehabilitation of Persons with Disability

Date: 20th of August 2009

Time: 11:20- 11:45 a.m.

Place: Ministry of Social Affairs / Department of Welfare and Rehabilitation of Persons with Disability.

الأسئلة :

1. ما الجهود (المبادرات) التي تقوم بها وزارة الشؤون الاجتماعية لدمج التلاميذ ذوي الإعاقات المختلفة في المدارس العامة ؟

2. كيف تتعاون وزارة الشؤون الاجتماعية مع وزارة التربية والتعليم لدمج التلاميذ ذوي الإعاقات في المدارس العامة ؟

3. نود الحصول على الإحصاءات المتوفرة لديكم عن عدد التلاميذ ذوي الإعاقات باختلاف أنواعها في مراكز التأهيل التابعة لوزارة الشؤون الاجتماعية، والمراكز الحكومية والخاصة ؟
كذلك إصداراتكم الخاصة عن تاريخ تعليم التلاميذ ذوي الإعاقات في دولة الإمارات .

Q1. What are the Ministry of Social affairs (MSA) efforts (or the initiatives) towards facilitating the inclusion of students with disabilities in mainstream schools?

The ministry has several initiatives and efforts in this field .The latest one is the "School for all". This initiative or plan is within the framework of the strategic plan for the federal government (2008-2010). It aims to include students with disabilities in the mainstream in consecutive steps; the first step has started since last school year (2007/2008) by including students with visual impairments in the public schools. Moreover, by the end of school year 2010 all the students with visual impairment will be shifted from the government rehabilitation centers to the public schools and no more students with this type of disability will be educated or accepted as new students in these centers. After this step students with other type of disability will be included in the public schools.

The ministry also in the final stage of preparing a manual for the technical specifications for inclusive schools .This manual includes standards for the school buildings, the classroom environment, the laboratories and the lavatories. Moreover there are standards for the curriculum that meet the students special needs and an assessment system for the diverse needs.

Q2. How does the Ministry of Social Affairs collaborate with the Ministry of Education to include students with disabilities in the public schools?

The two ministries collaborate continuously in the field of special needs. The ministry is working with the department of the special education in the ministry of education (MoE) in putting into affect the plan of including the students with disabilities in the public schools.

First : We started with them to train the teachers who were expected to teach students with visual impairments "Braille" and there are more coming training programs in the near future concerning the students with hearing impairments. Another thing the MSA has reached an agreement with the MoE to conduct training programs for the teachers in the following fields:

- Dealing with the students with disabilities in the school environment.
- Movement and Orientation principles for students with visual impairment.
- Braille courses.

Second: The MSA collaborated with the MoE in determining the 10 schools throughout the Emirates which are intended to receive the students with disabilities in the next school year.

Third: The MSA provided the MoE with awareness stickers about the inclusion of the students with disabilities to be printed on the covers and within the text books.

Fourth: The MSA communicates with the MoE to celebrate different social events concerning the people with disabilities such as the World Day of the person with disability and the White Cane Day. These celebrations include visits to the schools to conduct awareness lectures for the students and school staffs, exchanged visits between schools students and rehabilitation centers students and through the school broadcasting programs.

Q3. Is there any collaboration between the MSA and MoE to offer physical and occupational therapies for the students with physical disabilities in the public schools?

There is no collaboration in this field, the MSA offer this service for the children in the rehabilitation centers only.

Q4. I would like to have the available statistics of the students with disabilities in the public & private rehabilitation centers and the available publications on the history of educating students with disabilities in the United Arab Emirates?

We have a presentation that includes the history of educating students with disabilities with some statistics (he down loaded it into my flash stick). And the statistics for this school year (2008/2009) will be ready on October we are still doing some verification. You can refer to us on October to obtain them

Appendix 7f

Interviews with the primary science teachers (Who were observed within science classes that included pupils with physical disability (Check Observations 1, 2 &3)

Questions	Teacher 1(T1)	Teacher 2 (T2)	Teacher 3(T3)
<p>Q1 Which of the following differentiation strategies are you using to meet the specific needs of pupils with physical disability :</p> <ul style="list-style-type: none"> • Collaborative learning in groups • Assigning a classmate buddy to assist in activities. • Modifying the activity for the pupil. • Using the computer. 	<ul style="list-style-type: none"> • I Use this strategy more often. • Most of the times buddy assistance is assigned for Pupil A. • The teacher's answer was yes she modifies sometimes (she did not give an example). • The child does not has his own laptop, he has the same chances as his peers to use the only computer in the class .There is a computer lab upstairs but I can't benefit from it because it is very difficult to take this class there, as I mentioned carrying Pupil A needs assistance which is not 	<ul style="list-style-type: none"> • Yes or I will be faced by a lot of problems during the class, her peers writes for Pupil B and communicate with her better then me. • This is a necessity for Pupil B,I also change the peer buddy weekly and I praise those girls to encourage them to help their peer . • I do not change any activity but I explain it for her to be easy to understand. I also give her the easiest part in an activity when they work as groups to raise her self-esteem and accomplishment. • She does not use a computer. I do not use computer with her. 	<ul style="list-style-type: none"> • I use groups work most of the times. • I assign one of her group peers and I always change or rearrange the groups' members. • Yes, one of them was the static electricity activity. In this a balloon was to be rubbed by the wall to generate electricity. I changed it for Pupil C; she rubbed the balloon with her hair to give the same result. • I do not use computer.

Questions	Teacher 1	Teacher 2	Teacher 3
<ul style="list-style-type: none"> • Providing suitable learning materials for his abilities • Other strategies 	<p>available and there isn't any lifts.</p> <ul style="list-style-type: none"> • I use with him some times tactile learning materials. • Sometimes changing his seating to be closer to the materials 	<ul style="list-style-type: none"> • No. • (No answer) 	<ul style="list-style-type: none"> • No. • I do not use.
<p>Q2 Indicate which type of the following modifications are you using in assessing pupils with PD :</p> <ul style="list-style-type: none"> • Reduce or modify the assignments. • Give extra time to carry out assignments or tests. • Change the questions wording to simplify them. • Change in practical test (experiments) 	<ul style="list-style-type: none"> • He takes the same assignments but I accept what he is able to do. • Yes. • No, for grade one most of the questions is connecting between items as they can not read much. • Grade one do not have tests. 	<ul style="list-style-type: none"> • I assign another pupil to help her in carrying out the assignment by writing for her; I also decrease the amount of homework. • I always give extra time. • In grade 3 the wording of questions is easy to read and most of questions sentences are short .The answers mostly very brief (e.g. choosing, correcting, connecting between two phrases) .So I do not need to change any thing. • No practical tests for grade 3. 	<ul style="list-style-type: none"> • Pupil C does not need. • She does not require most of the times for tests, but she takes extra time for assignments such taking notes from the board. • No changes are used. • The activities are very simple and they do not have experiments which include heating devices. No changes are done.

Questions	Teacher 1	Teacher 2	Teacher 3
<p>Q3 What do you suggest to modify both the science curriculum and the learning environment to meet the needs for pupils with SEN and specifically with PD.</p>	<ul style="list-style-type: none"> • A assigning an assistant teacher is very important when including pupils with SEN in general classrooms. • Training programs for teachers. • Changes in school buildings such as wide entrances and doors. • Suitable transportation. 	<ul style="list-style-type: none"> • Reduce the work load for the teacher who has pupils with SEN. Pupils with SEN need more work .For example some times you need to work using one to one strategy with them. • The need of training programs or workshops on how to deal with pupils with needs, and the suitable teaching methods for them. • The teacher must be informed in advance of teaching a pupil with SEN to be prepared. I mean the child's type of disability , their specific needs and how to communicate with parents. Speaking about my self, no one informed me about Pupil B disability and how should I deal with her .I have to read on my own about cerebral palsy (the teacher showed me a small book she wrote on it information about cerebral palsy and its impacts on children and how to deal with them). 	<p>All the modifications you suggested in the previous questions and modifying the physical facilities to make the pupils move fluently.</p>

Appendix 7g

Interview with the school principal 1(Associated with Observation 1):

Date: Monday 13th of April 2009

Time: 7:15 a.m. – 7:45 a.m.

Place: The school principal office

Q1: Can you provide statistics of:

a. **Number of the school pupils** : The number is 420 boys

b. **Pupils with Special Education Needs:**

There are 14 pupils in the special class (with learning difficulties); one pupil with physical disability; and one pupil with intellectual disability.

c. **Special Education teacher(or resource room)**

The school has two special education teachers and one resource room teacher.

Q2. How Does the school modify/or adapt the learning environment to accommodate the diverse needs of students with special needs and /or disabilities in the following areas:

1. School Building

- a. The school building entrances: A ramp was built in the door front of side entrance which leads in the waiting room. This room is used by the pupils especially at the end of the day when waiting for their parents to pick them.
- b. The laboratory: no modifications, we have two laboratories both of them on the first floor. For pupil A, I think that science classes are taken in the classroom in the ground floor. In the future some action should be taken to make changes in the school building to enable pupils with disabilities to access the science laboratory, as you see the building is relatively old. As you mentioned there should be also modifications in the desks heights and the widths of the aisles.
- c. Canteen /or Restaurant: no modifications. But Pupil A is assisted by his peers to inter the canteen.
- d. Play ground: no modifications and the boy attend the physical education (PE) classes as it is in the ground floor.
- e. Lavatory: no modifications

2. Learning Materials & Assistive Technologies:

No special requirement for Pupil A, he is at the same cognitive abilities as his peers and with a suitable physical ability that enables him using the same learning materials as his peers do.

However, the school has a computer club that includes many cognitive and educational games and learning materials that suits different abilities. We also have Reading corner which contains many reading materials for different levels of reading abilities .All the teachers can use these facilities for their classes.

3. Assessment

a. Test modification: The school provides some modifications in the tests such as time modification, reading the test for the pupil .If the pupil is slow in writing a teacher sits near him and repeats the reading for him. For pupils with visual impairment we rearrange their seating to be close to the board. In this school we did not come across pupils who need other modifications than what I mentioned.

The school administration conducts each semester a diagnostic scan for the pupils academic achievement, then supporting classes are organized for the pupils who are at risk of failing or with weak grades. These classes are mainly for Arabic language and mathematic. The administration assigns one teacher for each supporting class. These classes are not in the resource room or related with special teachers.

As every body know the resource room provides educational services to pupils in grades 1-3 only ,depending on there special needs and this is planed for all the school year and not the tests results.

b. Curriculum modifications: No modification in the curriculum.

c. Individual Education Plan (IEP): we do not do IEP for the pupils with disabilities in the regular classroom.

4. **Training Programs**: The school teachers did not receive any training concern teaching methods for students with special needs. There is no specific organized program.

5. Awareness

In our school the special teachers organized an awareness lecture about pupils with special needs for the school staff that's all.

6. Communication with parents of pupils with SEN

The school is on continuous communication with parents of all the pupils including those with SEN. Pupil A father is very supportive and cooperative with the school especially when we give him any feedback or notes.(She was laughing)He is spoiling the boy , he is not firm with him .We did not communicate with his mother as she got another child with disability.

This is the first year for Pupil A to go out of the house and communicate with other children .At the beginning of the school year the boy was very aggressive when he plays with other kids,he did not know how to reach to them .But this changed totally ,he is now very sociable comparing with the first time he was here.

7. Transportation

The boy's father brings him to school .The school buses are not suitable and not prepared, he can not use them.

8. Other services:

a. school initiatives to assist the pupils (e.g. assigning a helper for the child, provide movement aids such as wheelchairs).

The school supports some pupils whom their financial state or family income is low. The school provided the wheelchair for the boy (one teacher brought it for him).We also provide other pupils with medical glasses within our budget.

b. Communicating with the community organizations to promote awareness lectures for inclusion, raise funds to modify school building, etc.

Yes we communicate with different societal organizations but not in the special needs domain. We raise funds to help our pupils in providing them some educational and other materials they need, even financial help.

Appendix 7h

Interview with the school principal 2 (Associated with Observations 2& 3):

Date: Monday 20th of April 2009

Time: 11:30 a.m. - 12 p.m.

Place: The school principal office

Q1: Can you provide statistics of:

d. **Number of the school pupils** : The number is 352 girls

e. **Pupils with Special Education Needs:**

There are 7 pupils in the special class (mostly with learning difficulties); 2 pupils with physical disability; and 1 pupil with hearing impairment.

f. **Special Education teacher(or resource room)**

The school has one special education teacher and one resource room teacher.

Q2. **How Does the school modify/or adapt the learning environment** to accommodate the diverse needs of students with special needs and /or disabilities in the following areas:

1. School Building

- f. The school building entrances: A ramp was built in the main building entrance.
- g. The laboratory: no modifications
- h. Canteen /or Restaurant: no modifications.
- i. Play ground: no modifications and the two girls with physical disability do not participate in physical education (PE) classes.
- j. Lavatory: the school built a new lavatory for the pupils with special needs; it is in the ground floor. Pupil C who is in grade 4 could not benefit from it because her classroom in the first floor and she can not come down during the day, it is very difficult for her.

2. Learning Materials & Assistive Technologies:

The administration did not receive any request from science teachers or other teachers to provide learning materials or assistive equipment .The school provided only hearing aids for the pupil with hearing impairment, that's all.

We requested from the ministry of education to provide us with special desks and computers but we did not receive any reply.

3. Assessment

- a. Test modification: The school provides some modifications in the tests. (No other comment).
- b. Curriculum modifications: No modification in the learning content as far as I know.
- c. Individual Education Plan (IEP): there are no IEP for the pupils with disabilities in the regular classroom.

I want to point out to an important issue in the assessment issue, which is the absence of standards to assess the pupils with different special needs in different subjects such as science, math, languages and PE. There are no guidelines. Take for instance pupils with physical disability can not participate in PE without the guidelines that determine and organize how to participate within their potential in order to benefit and do not be hurt physically and emotionally. And this can go with other subjects

4. **Training Programs:** there is no training for subject teachers, it is not available.

5. **Awareness**

-The school has initiative to raise the teachers' awareness .For example: The special education teachers and the social specialist visited Rashid Center in Dubai to learn about the teaching strategies and the way of dealing with students with disabilities. Also we received a visit from the same center and they asked about our needs of equipments such as computers and modifications in the building.

- The school also organized a visit to Sharjah Humanitarian City, our special education teachers spent a school day there. They join the classes with the teachers in the center and participated in a workshop in teaching and dealing with pupils with special needs.

6. **Communication with parents of pupils with SEN**

We have good communication with some parents such as with pupil C, but some are not cooperate, you know it depends on their awareness and social circumstances.

7. **Transportation**

The transportation is the responsibility of the pupil parents.

8. **Other services:**

- a. school initiatives to assist the pupils (e.g. assigning a helper for the child, provide movement aids such as wheelchairs).

The school only can provide some aids such wheelchair, building ramps in the entrances, but we can not employ a helper.

We also communicated with a sponsor to install a lift for pupils with physical disability (through pupil C mother) and we communicated with building department in the KHDA but they refused the offer. They told us that the school building is very old and there are plans to remove it in the near future. Well, there is no removal after the global financial crisis, all the plans are postponed.

- c. Communicating with the community organizations to promote awareness lectures for inclusion, raise funds to modify school building, etc.

Look dear, Inclusion concept or process is a very vague thing for us and others .we did not receive any help from an organization till now. The teachers are not trained to work with pupils with disabilities.

Appendix 7i

Interview with the school principal 4(Associated with Observation 4):

Date: Sunday 19th of April 2009

Time: 8:25 a.m. – 9:40 a.m.

Place: The school principal office

Q1: Can you provide statistics of:

g. **Number of the school pupils** : 320 boys

h. **Pupils with Special Education Needs:**

10 pupils in the special class (with learning difficulties); 1 pupil has physical disability.

i. **Special Education teacher(or resource room)**

There are two special education teachers and one resource room teacher.

Q2. **How Does the school modify/or adapt the learning environment** to accommodate the diverse needs of students with special needs and /or disabilities in the following areas:

1. School Building

k. The school building entrances: No

l.

m. The laboratory: no modifications

n. Canteen /or Restaurant: no modifications.

o. Play ground: No need for modifying the play ground .Pupil D has a medical report that inform he can not participate in physical education classes. The school does not have any other conditions.

p. Lavatory: The school does not have this kind of modification also, no conditions needs these things.

2. Learning Materials & Assistive Technologies:

The school provides some learning materials for the pupils in the special classes develop their learning skills .

3. Assessment

a. Test modification: (she did not answer this question).

b. Curriculum modifications: (she did not answer this question).

c. Individual Education Plan (IEP): the IEPs are only for the pupils in the special classes.

4. **Training Programs:** the teachers did not receive such training.

5. Awareness

In the school plan we have awareness lecture for the teachers about how to deal with pupils with special needs. This lecture will be conducted by the special education supervisor in the near future.

6. Communication with parents of pupils with SEN

The school communicates with the parents through telephone calls, letters and meetings.

7. Transportation

No.

8. Other services:

- a. school initiatives to assist the pupils : The helper for Pupil D is a worker in the school .We let him help the boy and his mother give him a monthly payment for that.

- d. Communicating with the community organizations to promote awareness lectures for inclusion, raise funds to modify school building, etc.

We have communications with many civil organizations but not for special needs funds or disability awareness.

Appendix 8

Interview with a Senior Official in Dubai School Health District

Date: 2nd July 2009

Time: 11 a.m

Place: Dubai School Health District in Abuhail , Diera

I went to the health district to ask about the availability of statistics of the pupils with physical disability in order to get a recommendation letter from the university to obtain them for my study. A Senior Official in the department accepted to meet me kindly (without previous appointment) and answered my questions. This interview was unstructured because my visit was for inquiry about the statistics and not intended to do that interview at the same day.

First I gave the director a brief description of my study and its aims.

Q1: What are the types of services offered to the students in the public schools by the school health district (Ministry of Health)?

The services rely on three main pivots.

The first one is the school health services: this includes a comprehensive health check up for each student at the beginning of each school year, and a continuous follow up for the acute health cases (Diabetes, Anemia, Asthma, Obesity and other cases) which require this following up. The second pivot is the health education and the third pivot is observing the school environment.

Q2: What about the services offered to the pupils with physical disabilities who needs physical and occupational therapies?

These services are not included in the services that are offered by the school health district. The physical and occupational therapies are technical services and not medical care for acute health cases and this kind of services need a request from the parents (after doing the comprehensive check up) than the student will be transferred and offered these therapy. As far as I know the department did not receive such a request. Further, these types of therapy need many sessions a week and can only offered at the hospital, which will be difficult for the school nurse to go with those children from the school and leave the school many times a week. As you know she is responsible of delivering the health services for all the students and deal with emergencies cases. Another thing is these therapy trips need transportation several time a week and this will be difficult for the school to offer on a regular bases.

Q3: Does the School Health District have a statistics of the students with disabilities in general and physical disabilities in Dubai public schools?

We do not have. I'll explain, the health department has statistics of all types of health cases, the comprehensive check up helps in determining the health cases for the students which include many types of impairment such health ,sensory and orthopedic impairments. But the annual statistics reports includes only the health cases and one type of orthopedic disability which called the skeletal impairment. The other types of orthopedic disabilities go under the label of "other cases". However, each school nurse has (in her files) the detailed data about the number of students with disabilities in her school.

You have drawn our attention to this important point; we should have this type of statistics (She asked her assistant to write a note about it).

Appendix 9

Observation 1

Date of observation: Monday, 13 April 2009

Time: I reached the school at 7 a.m. The first period starts at 7:30 a.m. in primary (cycle one) boys schools.

School Physical Environment

Building Description

The school is an old building located in a residential suburb in Dubai. It consists of two stories: ground and one upper floor. Grades 1 to 3 classrooms are located in the ground floor along with the playground, some activities rooms (e.g. Music) and the cafeteria. Grades 4 & 5 classrooms are in the first floor with the laboratory, computer room, library and other activities rooms (Pictures 1-3).

Physical accommodations:

The only modification in the school building for pupils with physical disabilities was the slope in the front of a side door (picture 1). The school does not have elevator (lift), and there are no modified lavatory room for the pupils with special needs (mobility impairment).

Classroom observation

Class: Grade One.

Subject: Science.

Topic: Pushes and Pulls " الشدّ والدفع " .

Date: Monday, 13 April 2009.

Time: Period two from 8:15 to 8:55.

Place: Grade one Classroom (on the ground floor of the school).

Class size: 22 pupils.

Teacher 1 (T1): Class teacher, teaches science and mathematics.

Child's Data: Name: Pupil A Gender: boy Age: 6 years

Line Number	Notes
1 5	Classroom Layout: The class was organized in away to make pupils sit in groups of six. T1 made a wide space between the two lines of tables to enable Pupil A to move around freely in the class using his walker or wheelchair (Picture 2).He was also positioned in the front desk near the teacher at the edge to facilitate his movement and reduce the obstacles in his way to the teacher's desk.
10 15 20	I was in the class before the children arrived. They push one another into the class in a vigorous movement mixed with childish noise (laughing and shouting). T1 was smiling and greeting some of them by the name. She greeted the class and they greeted her back, then they sat waiting for her to start .Since they entered the class they were behaving very calmly. The teacher started the lesson by telling a story a bout one of the Muslims scientist. She attracted the pupils attention by telling them it is story time, the children quickly gathered around her desk and sat down on the carpet, Pupil A was very active he used his walker and sat with his peers (Picture 3), they listened with attention to a story about Ibn Batoota (an ancient Islamic explorer) . Pupil A participated in answering the teacher's questions. The story time took 10 minutes than the children including Pupil A returned to their chairs .He did not need an assistant he held his walker carefully and walked back to his place
	Than T1 started the lesson by asking the pupils to come to her desk and choose items for their groups (small stones, animal toys, small cars, staplers, wooden cubic, etc.), Pupil A harried with his peer to choose (Picture4) and returned back to their desk.
25 30	She asked them to move these items without touching them with their hands. Some of the children said we can move them by blowing them, the teacher agreed, she asked them to think about another ways. She prompt by providing them with small sticks and threads .They worked in groups trying to move the items and the teacher was moving around to see their work , Pupil A was working actively and using his hands and fingers efficiently . The pupils through the activity reached the way of moving things , they answered the teacher's question by telling her they can move the things by bulling them with the thread that they tied it around the car (or any item) or by bushing it by the stick(picture 5).
35	T1 than put the cards of the words Pull (الشد) & Push (الدفع) on the board and explain the meaning of each concept.
	During the activity she was videoing the children. Later she used this video in explaining and showed them again the process of pulling the items and pushing them. The children were very excited to see their video on the T.V.
40	To close the lesson she asked them to open their activity book and work the activity on page 47 & 48, Pupil A opened his book and started to answer the activity , whenever a pupil finishes the activity ,he goes to the teacher's desk , they were making a line (including Pupil A) to check their answers.

Line Number	Notes
45	<p><u>General Observations about the science class</u></p> <p><u>The Teacher & The Pupils:</u></p> <p>T1 used different teaching strategies such as story reading, practical inquiry activity, questioning and discussion. She also revised the main concepts by showing the pupils their pictures when they were carrying out the activity. She assessed their learning by asking questions and using the activity book which included an activity on the two concepts "Pull & Push". She also used many teaching materials such as: small gadgets and toys to be used in the activity, the camera and the T.V , she video taped the pupils during the activity and showed them later how they did the two actions (Push & Pull) . The four groups of pupils each one has enough materials (small cars, threads, sticks...etc.) to work with within his group.</p> <p>She seemed to be on control of the class discipline and the pupils behaved appropriately and were on task all the time She also did smooth transition from each activity to another .I noticed that all her pupils were participating actively the whole time of the period, they seemed very motivated. However, she used the same strategies with the whole class. I did not notice that the teacher was using different methods to explain when she was moving around to check the pupils work (as an outsider observer I could not distinguish the pupils different abilities especially that I was able to observe them one time only).The pupils groups were not arranged for the activity, the groups seating was in the class and they work as groups because they happen to sit near each other , I did not see the teacher doing any changes by rearranging the children(e.g. transferring any pupil to be in other groups).</p> <p><u>Pupil A</u></p> <p>Pupil A during the science class was able to access to the different learning materials, and he participated equally in all the activities that took place. He was interacting with his peers comfortably and appropriately.</p> <p><u>Pupil A condition</u></p> <p>Pupil A is a six years old boy. He has Hydrocephalus .Although his both legs are paralyzed, he moves by using three assistive aids: leg braces, a walker within the classroom, while he uses the wheelchair when being out of the class. His fine motor skills are normal as his hands are not affected. He is a very active child moves without assistant within the classroom but he needs his peers assistant when he is using the wheelchair. He speaks and communicates effectively with his peers and seemed very relaxed in their company during the lesson and after the lesson (when they brought his wheelchair for him and helped him to leave the class with them, they were taking and laughing).</p>
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Pupil A Checklist

(Adopted from: <http://bsu.edu/dsd/fac-mobility/> . Accessed on 6 April 2009, with some modification.

Line Number	Pupil Checklist	
	Considerations	Comments
84 85 90	<p style="color: red;">Type of mobility aid used by the pupil:</p> <ul style="list-style-type: none"> • Wheelchair • Walker • Crutches • Braces • Cane • Other 	<p>Pupil A uses: Wheelchair , Walker and Braces</p>
	<p style="color: red;">Pupil May has hand and arm dexterity problems</p>	<p>Pupil A does not have any has hand and arm dexterity problems.</p>
95 100 105 110 115 120	<p style="color: red;">To move from class to Laboratory :</p> <ul style="list-style-type: none"> • Consideration of travel time in planning class schedules • Presence of barriers (Stairs, curbs, narrow walkways, heavy doors, and balky elevators) 	<ul style="list-style-type: none"> • The teacher gives the science lessons in the classroom all the times. When asked for explanation: she said that it is very difficult for the pupil A to go upstairs .She added that she tried once and it was very hard to carry pupil A to the first floor (He does not have a helper with him),and she did not try it a gain. In addition she said the activities for grade 1 do not need the use of the lab, she got all the equipments she needs in her classroom. • For the mean time there are no presence barriers for Pupil A to move around in the ground floor. Although he will not need to go to the first floor of the building for the next 2 years, he will face difficulties if the system continues unchanged. Usually, grades 4 and 5 in most schools are in the first floor because the laboratories in school buildings are there, library and many activities rooms.

Pupil Checklist		
Line No.	Considerations	Comments
125	<p>Does the pupil require academic classroom accommodations:</p> <ul style="list-style-type: none"> • Modifications when classes taught in laboratory settings: such as: Tables height, space, paired with a classmate or collaborative learning. • Modifying some partial activities. • Require special test accommodations 	<p>Can not observe any accommodations in the laboratory as the science lessons are taught in the classroom for grade one (the teacher confirm this for the researcher).</p> <ul style="list-style-type: none"> • For the classroom settings the desk height was suitable for Pupil A and the space between the two lines of desks (aisle) was also suitable. Classmates helped Pupil A to move from the class to another class, but not observed as participating in collaborative learning. • No modifications were noticed or seen in the activities conducted by the pupil .I asked the teacher about this issue she confirmed that the Pupil A does not need any modifications as he functions at the level of his peers (does not appear to have any cognitive difficulties) and has good fine motor skills and uses his hands and fingers efficiently. • Grade one pupils do not have written tests or final tests.
130		
140		
145		
150		
155	<p>Does the pupil require other classroom accommodation :</p> <ul style="list-style-type: none"> • Seating arrangements (the need of adequate floor space). • Assistance of note taker 	<ul style="list-style-type: none"> • The Pupil needs classroom accommodations concerning seating arrangement as he uses a walker and a wheelchair. • Pupil A does not need assistance in taking notes.
160	<p>Modifications when classes taught in laboratory settings</p>	<p>Pupil A science classes are taught in the classroom, and the teacher mention that she prefer the classroom setting for grade one.</p>

Pupil (A) Medical Report:

The child report was issued in March 2008, which indicates that it is a new one.

The medical report was very brief and written in unclear hand writing.

Following what I was able to read:

He has Congenital Hydrocephalus. It is also mentioned that he has another health condition which is 'Asthma'. One of the words that I came across in the child's report was "operate shunts".

The researcher could not read the rest of the report because of the unclear hand writing of the physician who wrote it. I sought the help of the nurse but she was not in the school while I was conducting the observation .I called the school three times after that and she was not also available .So I do not have more medical information about pupil A. However his teacher said that he did two operations this year and he missed many lessons .The child also did not attend kindergarten due to the medical treatment he receives continually.

Shunt :

The diversion of the flow of a fluid from its normal pathway to another, which may be accidental, as a traumatic AV aneurysm, or by design ,e.g. portocaval shunt or ventriculoperitoneal shunt.

(Source: Segen,J.,(2006). *Concise Dictionary of Modern Medicine*. McGraw-Hill: New York.

PICTURES



2



1



4



3



6



5



7

Picture 1. A small terrace for Pupil A with a slope for the wheelchair.

Picture 2. The layout of the classroom.

Picture 3. A walkway in the school.

Picture 4. Story Time : Pupil A is sitting with his peers listening to a story .

Pictures 5,6,7 . Pupil A participating in the class activities.

Appendix 10

Observation 2

Date of observation: 20 April 2009

Time: I was at school at eight a.m.

School Physical Environment

Building Description

The building is very old. I was told by the administration that the educational authority in KHDA informed them that the school will be removed in the near future as it is very close from a fast growing business busy area in Dubai. Most of the primary schools with old buildings (including this one) have two stories. The ground floor includes grade 1-3 classrooms with some activity rooms, the playground and the canteen. The first floor includes grades 4 & 5 classrooms alongside with the library, the laboratory and other activity rooms.

Physical accommodations:

There were two modifications in the school building to accommodate pupils with physical disability. One of them is the slope in the front entrance of the building and the second is a modified lavatory in the ground floor. There was no elevator for the first floor, the pupil who was in grade four (check observation three) was using the stairs to go to her class.

Classroom observation

Class: Grade Three.

Subject: Science.

Topic: How thermal energy move? What Gets Hot?

"كيف تسخن الأشياء؟ : مايسخن؟".

Date: Monday, 20 April 2009.

Time: Period Thee from 10:00 to 10:40 a.m.

Place: Grade Three Classroom (on the ground floor of the school).

Class size: 19 pupils.

Teacher 2 (T2) Class teacher teaches science and mathematics.

Child's Data: Name: Pupil: B Gender: girl Age: 11years

Line No.	Notes																		
1	Classroom Layout: The class included four desks were arranged in two lines with wide aisle between them. Each table had a group of five girls. Pupil B sat in the first desk. T2 positioned Pupil B in the front so she can reach her easily when she needs assistance.																		
5																			
10	The Lesson: At the beginning of the class T2 introduced me to the children as "a researcher visitor" who will join them in science class .I wondered if they understood what a researcher means. The pupils seemed very quite, I could not notice if they move at all. T2 started the lesson by asking several questions about using the thermal energy "how do we use thermal energy? Give two examples? "What does thermal energy do to matter?", some girls raised their hands, and participated in answering the questions . Pupil B did not participate.																		
15	Then she introduced the new lesson by asking: "What kind of things or materials may get hot, and what things may not get hot at all?" She told the class to open their activity books (page 126) and to conduct an experiment to answer this question. She also drew two charts on the white board to record the observations (the pupils have these charts in their books.																		
20	<table border="1"> <thead> <tr> <th colspan="3">Cups (الأكواب)</th> <th colspan="3">Spoons (الملاعق)</th> </tr> <tr> <th>Metal المعدني</th> <th>Plastic البلاستيكي</th> <th>Ceramic الخرفي</th> <th>Metal المعدنية</th> <th>Plastic البلاستيكية</th> <th>Wooden الخشبية</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Cups (الأكواب)			Spoons (الملاعق)			Metal المعدني	Plastic البلاستيكي	Ceramic الخرفي	Metal المعدنية	Plastic البلاستيكية	Wooden الخشبية						
Cups (الأكواب)			Spoons (الملاعق)																
Metal المعدني	Plastic البلاستيكي	Ceramic الخرفي	Metal المعدنية	Plastic البلاستيكية	Wooden الخشبية														
25	<ul style="list-style-type: none"> - T2 used one set of spoons (3 different spoons) for the whole class, the spoons were transferred by the pupils from one desk to another to touch the spoons and feel them before inserting them in hot water. The pupils were watching the spoons from far distance in their teacher's hand; she held them near each desk and let them touch the spoons. She asked them what did they feel, two girls answered the question .I did not notice Pupil B participate in answering the question. 																		
30	<ul style="list-style-type: none"> - Then T2 poured hot water in the different cups and asked one girl in each group (in turns) to hold a small tray with the cups and hold it in front of her group and let her peers touch each cup to feel it, then insert the three different spoons in the hot water in each cup, left it for a minute or so and then touch the spoons and compare which one is the hottest. (The cups also were one set and they were transferred in turn to the four groups. 																		
35	Not all the pupils participated in the activity as the materials were shown from a distance. However the teacher was moving from one desk to another to make shore that they touch the cups, and asked them to be careful with the hot water.																		
40	<ul style="list-style-type: none"> - T2 assigned a classmate pupil to work with Pupil B and to help her to touch the cups and the spoons .I noticed that Pupil B had difficulty in using her hand, in holding things and writing, moreover, I did not hear her speaking. - The teacher asked the pupils to write their observations in their books and asked the classmate buddy to write for Pupil B. 																		
45	When the period finished, Pupil's B maid came to the class to pick her things and help her (push her wheelchair) to go out side the classroom as it was the break time.																		

Line No.	Notes
48	<u>General Observations about the science class</u>
	<i>Teacher 2 & The Pupils:</i>
50	The teacher used mostly questioning strategy, and lecturing. She did not use any learning material except for the activity instruments. What was noticed that she used only one set of materials while those materials could be provided for all the groups. They were just cups and spoons which could be obtained easily. The children actually did not investigate ,they were told what should they do,
55	moreover , one pupil from each group was using the materials and the others were watching her ,they just (not all of them) was trying to touch the cups to feel the heat. In some occasions (especially at the beginning of the class) the materials was in the teacher's hands and was waving from distance to the pupils to see the different materials of the spoons and the cups.
60	Although the pupils were on task and the teacher had control on discipline matters, the pupils were not seemed engaged in the lesson .T2 did not use any differentiations in the learning activities which may make the pupils more engaged and stimulated or to attract their attention. Pupil B was definitely would benefit from some modifications in the seating arrangements, using alternative ways to communicate with the teacher and her peers .Even the instruments or the activity could be modified or altered with another activity so she can do some work by her self and develop her skills in observation and communication.
65	
	<i>Pupil B</i>
70	Pupil B is a very shy girl .The difficulty to move and to speak seemed to hinder her participation in the science classroom. She could not uses or manipulates the instruments or materials efficiently .The situation in the class can not help to facilitate her access to materials as the learning environment did not stimulate the pupils. She was offered limited accommodations which was assigning a classmate to take notes for her and show her the activity.
75	<u>Pupil B condition</u>
	Pupil B is an eleven years old girl. She has Cerebral Palsy and can not walk, she uses a wheelchair as mobility aid (I did not see her walk) .She depends on her maid to move her from a place to another as she also has hand dexterity problems .It was very obvious that the child was facing problems in communicating with her peers. Pupil B mobility was difficult; she can not use her hands efficiently specially to move from place to another. Writing assignments require from her big effort. She seemed very quite and not socialized with her peers ,I noticed that after the end of class ,the time was midday break ,she was helped by her maid (not peers) to move out of the class and she sat on her wheelchair (in the corridor) all the break time, she was not accompanied by any of her peers.
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Pupils B Checklist

(Adopted from : <http://bsu.edu/dsd/fac-mobility/> . Accessed on 6 April 2009, with some modification.

Line Number	Pupil Checklist	
	Considerations	Comments
87 90	<p style="color: red;">Type of mobility aid used by the pupil:</p> <ul style="list-style-type: none"> • Wheelchair • Walker • Crutches • Braces • Cane • Other 	<p>Pupil B uses: Wheelchair No other mobility aid was seen in the class.</p>
95 100	<p style="color: red;">Pupil May has hand and arm dexterity problems</p>	<p>Pupil B has difficulty in using her hands ,she has poor fine motor skills .She could not hold the pencil for long time ,she needed help in writing and manipulating activity instruments in the science class.</p>
105 110 115 120	<p style="color: red;">To move from class to Laboratory :</p> <ul style="list-style-type: none"> • Consideration of travel time in planning class schedules • Presence of barriers (Stairs, curbs, narrow walkways, heavy doors, and balky elevators 	<ul style="list-style-type: none"> • The teacher gives the science lessons in the classroom all the times. From my observation giving the lesson in the lab which is located in the first floor will create problem for the child .The school did not have elevator, it is very difficult to move upstairs for her especially that she has hand dexterity problem. • At the mean time there are no presence barriers for Pupil B to move around in the ground floor. The interance door is heavy and need some one to open it for Pupil B. The school did not have elevator so Pupil B could not join her peers when having classes in the first floor such as library classes. She will face difficulty in the future when she moves to grade 4.

Line Number	<u>Medical Report</u>
155	The medical report given to me by the school administration to read was an old one, when Pupil B was one year old (it was issued in 1999). They did not have another recent report which describes the child state. I copied some parts as it includes many tests for the girl when she was infant and not relevant for this study.
160	<p><u>Following excerpts from the report which was issued by a Consultant Neurosurgeon in 1999:</u> (The researcher altered the child name by using the words [the child] between parentheses.</p>
165	"The child has suffered from the consequences of complications of preterm [premature] birth. As far as can be judged at present she is making very good cognitive progress but has undoubted delay in her motor development even when this corrected for prematurity. She appears to have an evolving mainly dystonic form of cerebral palsy but there is an element of spasticity.
170	[...] She will need great deal of experts help and attention in order to ensure that she achieves her full potential .I (the physician) have similarly emphasised that although it is important that [the child] receives therapy this can only ever be as adjunct to her innate learning and developmental achievements. The therapy is also in a large part preventative and must be used in order to enable her to achieve her milestones. I (the physician) have also acknowledged that I do not know if or when [the child] will walk. Certainly
175	there is every hope that she will but this certainly going to be considerably later than her peers.
180	[The child] prospects for cognitive development are even less clear. I (the physician) have been relatively optimistic about this area, nevertheless, have serious concerns about her brain growth and have said that this is significantly less than one would hope and is not purely related to her small size and physical growth.
185	[The child] has had an MRI scan performed and the full report is attached. It is impossible to predict any aspect of developmental progress from the appearances on the scan but it has been helpful to see the changes and that [The child] does not need any further investigations at present. There are no other formal tests that will enable us to make any more accurate predictions about outcome.
	I think it is very important that [the child] is reviewed regularly although infrequently [...].they are entirely consistent with the events that occurred in early life.

Appendix 11

Observation 3

Date of observation: 20 April 2009

Time: I was at school at eight a.m.

School Physical Environment

Building Description

The building is very old. I was told by the administration that the educational authority in KHDA informed them that the school will be removed in the near future as it is very close from a fast growing business busy area in Dubai. Most of the primary schools with old buildings (including this one) have two stories. The ground floor includes grade 1-3 classrooms with some activities rooms, the playground and the canteen. The first floor includes grades 4 & 5 classrooms alongside with the library , the laboratory and other activities rooms.

Physical accommodations:

Observation 2 &3 took place at the same school. Observation 2 has the description of the physical environment of the school.

Classroom observation

Class: Grade Four

Subject: Science.

Topic: "**A Compass**"

"البوصلة"

Date: Monday, 20 April 2009.

Time: Period Six from 1:10 to 1:50 p.m.

Place: Science Laboratory (on the First floor of the school).

Class size: 18 pupils.

Teacher 3: Subject teacher, teaches science only.

Child's Data: Name: Pupil: C Gender: girl Age: 13 years

Note: I was accompanied by the school principal .She attended the science class with me.

Line No.	Notes
<p>1</p> <p>5</p> <p>10</p>	<p><u>Classroom Layout:</u></p> <p>The class was in the laboratory. It contains three rows of long tables with a fixed height. The tables also not opened from inside so the children can put their legs comfortably (because the tables have drawers to put instrument as a way to use the spaces economically).</p> <p>The layout of the laboratory not only unsuitable for pupils with physical disability who use wheelchairs, it also not suitable for the age range of pupils in fourth and fifth grade (between 9-10 years old),because the tables were high and these designs are very old one and can suite students in secondary level.</p> <p>There is also two other notes for safety matters:</p> <p><u>First:</u> the laboratory has a high step on the doorway .This makes it an obstacle for the children with mobility difficulties or with wheelchairs.</p> <p><u>Second:</u> the lab has one exit only; this can cause a dangerous situation for the children and the teacher in case of emergency.</p>
<p>15</p> <p>20</p> <p>25</p> <p>30</p>	<p><u>The Lesson:</u></p> <p>Teacher 3 stimulated the pupils and attracted their attention by asking them about the magnet: "How to fix notes on the fridge door? she listened to the answer . She asked another question: what is a magnet? Listened to the pupils answers again .Then asked: Can you tell some uses of magnets?</p> <p>She wrote this question on the board: How can sailors identify the directions in the sea?</p> <p>Some pupils raised their hands? The teacher discussed with them the answers which varied: one girl said by looking at the sky to the sun, they determine the directions by the location of the sun. She asked for more answers. The discussion continues until they reach the use of a compass in determining the directions.</p> <p>Then the teacher explained for the pupils why the compass is favored than the other ways mentioned by the girls.</p> <p>Through out the discussion Pupil C was participating and raising her hand to answer the questions.</p>
<p>35</p>	<p>After explaining the uses of a compass She distributed a number of compasses, bar magnets and some paper clips pins and iron nails on the tables and asked the pupils to examine them and asked: from what the compass is made of?</p> <p>Pupil C seating was not comfortable, there was no suitable place where she can sit using her wheelchair appropriately and can reach the instruments and hold them in a right way (see the pictures).</p>

Line No.	Notes
38 40 45	<p>Pupil C with her group started to examine the compass; she asked them to give her the magnet to try. She was communicating and talking with her peers actively.</p> <p>The next step was that she told the pupils to open page 142 in the activity book which includes how a compass work and making a compass by using simple items. Pupil C took the book from the table opened it and put it on her lap so that she can read , the table was high for her and in a direction that she could not read comfortably or in a practical way.</p>
50	<p>The children started working on the activity ,however, after few minutes the principal interrupted and asked the pupils to stop the work , she said she wanted to ask them some questions about what did they learn from this class.(She was assessing their learning).</p>
55 60 65 70 75 80 85	<p><u>General Observations about the science class</u></p> <p><i>Teacher 3 & The Pupils:</i></p> <p>Teacher 3 was using questioning and discussion strategies most of the time. She did not any learning materials except for the instruments for the activity. She could use for example a video or transparency or even the white board. Her way in questioning was suitable for the pupils, she has a way of speaking that attracted the children attention. The pupils were on task all the time and the class was in discipline. She also made the class work in groups she was asking them to try and investigate; she answered their questions and explained when needed.</p> <p>But she did not make any differentiation in the activities or in her explanations, I noticed that four girls at the back was not participating all the time, they were listening but seem to need different strategy (I did not know there abilities,but from my experience as a science teacher they seemed in a need of a help of some kind).The lesson was taught in one style that is aimed to a group with same abilities.</p> <p><i>Pupil C</i></p> <p>Pupil C was able to use the materials with limitation as the seating arrangement and the tables hindered her movement. However, Pupil C used and participated equally as her peers in al activities. She interacted appropriately with peers.</p> <p><u>Pupil C condition</u></p> <p>Pupil C is a thirteen years old girl, she has Cerebral Palsy. She walks with difficulty when assisted. Within the lab she did not move from her place or leave her wheelchair , the aisle of the lab was narrow for her (using a wheelchair) To move freely. Her fine motor skills are normal; she can use her hand without trouble. She seemed a bright girl as she was raising her hands whenever a question was posed .When she was asked to answer her answers were right and with clear articulation. She participated actively with her peers in conducting the activity; she was speaking and communicating with them in a very sociable natural way.</p> <p>From taking to the girl and her teacher she is a sociable and cheerful girl .The physical barriers impede her to be with her friends in the break time because the canteen is in the ground floor and she can not go down until the end of the school day when her mother comes to take her (the teacher told me that).She also can not join them in the PE class (even by watching them)for the same reason .</p>

Pupil C Checklist

(Adopted from: <http://bsu.edu/dsd/fac-mobility/> . Accessed on 6 April 2009, with some modification.

Line Number	Pupil Checklist	
	Considerations	Comments
88 90 95	<p style="color: red;">Type of mobility aid used by the pupil:</p> <ul style="list-style-type: none"> • Wheelchair • Walker • Crutches • Braces • Cane • Other 	<p>Pupil C uses: Wheelchair and legs braces.</p>
100	<p style="color: red;">Pupil May has hand and arm dexterity problems</p>	<p>Pupil C uses her hands effectively she does not seem to have any hand or arm dexterity problems; I noticed she grips the pencil firmly and holds the instruments appropriately.</p>
105 110 115	<p style="color: red;">To move from class to Laboratory :</p> <ul style="list-style-type: none"> • Consideration of travel time in planning class schedules • Presence of barriers (Stairs, curbs, narrow walkways, heavy doors, and balky elevators) 	<ul style="list-style-type: none"> • I observed Pupil C came at the lab in the same time as her peers. • Pupil C encounters many barriers in the school. Her classroom and the laboratory are in the first floor, she is facing difficulty and pain to be in her class every day. Without the help of her mother and the maid she would not be able to go upstairs or to move from the class to the lab. There is also a step on the doorway of the lab which causes difficulty in getting in or out the lab. The modified lavatory is also at the ground floor which makes it difficult for her to reach it.
120 125	<p style="color: red;">Does the pupil require academic classroom accommodations:</p> <ul style="list-style-type: none"> • Modifications when classes taught in laboratory settings: such as: Tables height, space, paired with a classmate or collaborative learning. 	<ul style="list-style-type: none"> • I did not have the chance to go to Pupil C classroom ,however , I observed her in the lab which needs many modifications:

Line Number	Pupil Checklist	
	Considerations	Comments
127		<ul style="list-style-type: none"> - First the doorway must be modified with a slope to ease the wheelchair movement. - Second: the height of the tables is not suitable for the girl. The teacher can bring a portable small table which can "do the job" for Pupil C as she (the teacher) can not change the tables of the lab. - The administration can transfer the fourth grade classroom for Pupil C to be in the ground floor .The researcher does not see any difficulty to do that , it needs some pre –preparations and will solve many problems facing pupil C and her parents.
130		
135		
140		
145	<ul style="list-style-type: none"> • Modifying some partial activities. 	
150		
155	<ul style="list-style-type: none"> • Require special test accommodations 	<ul style="list-style-type: none"> • Pupil C may need some modification in other activities .For example if the activity needs the use of heating source or using liquids .But for the class I was observing there was no need for any modifications. • Pupil C needs accommodation in seating arrangement during tests so that she can performs in a comfortable situation .She also may need note taker in long writing tests. As I was informed Pupil C did not need any tests accommodations or modification, she is functioning in her peers level.
160	<p>Does the student require other classroom accommodation :</p> <ul style="list-style-type: none"> • Seating arrangements (the need of adequate floor space). 	<ul style="list-style-type: none"> • The girl requires modification in seating. • Yes, some times (as I was told by the teacher). Pupil C gets fatigue when writing for long periods although she had good fine motor skills.
165	<ul style="list-style-type: none"> • Assistance of note taker 	

Pupil Checklist		
	Considerations	Comments
167	Modifications when classes taught in laboratory settings	She needs medications, nevertheless, that the tables are with fixed height.
170		The teacher can keep a small table with suitable height in the preparing room attached to the lab and use it when pupil C needs it, so that she can be in a situation where holding and manipulating materials are easy for her.
175		Another accommodation is making a solution for the step on the doorway.

Line Number	<u>Medical Report</u>
177	I copied the medical report from the school original copy (The researcher altered the child name by using the words [the child] between parentheses. <u>The Medical report was issued in 2002 by Orthopaedic Surgeon Consultant:</u>
180	"The patient was examined by me [the consultant] in consultation on 15.2.02 presenting a 6 year old female with cerebral palsy. [...]. She is fairly attentive and independent for her daily needs. Her speech is fairly acceptable. From the gait point of view she got a flexed crouch gait with an adduction hip contractures.[...].
185	X-ray examination shows well contained and there is presence of a <u>valgus</u> neck. Spinal examination is within normality.
190	It is my opinion [the consultant] that [the child] continues the program of rehabilitation therapy and considers aponeurotomy of hamstrings on both the knees. Parents were counseled all these procedures are carried out in Dubai.
	This report is given at the request of her father.

valgus

OTHOPIDICS Fixation of an extremity in the position it would assume if everted ; if in the frontal plane ,the planter surface is directed away from the midline.

(Source: Segen,J.,(2006). *Concise Dictionary of Modern Medicine*. McGraw-Hill: New York.

Pictures





Interview with Pupil C mother:

Date: Monday 20th April 2009.

Time: 8:30 a.m. - 9.00 a.m.

Place: Social specialist office.

Can you give information about your daughter's health and educational background?

(**Note:** this is the only question that I asked the mother, she gave detailed information about her daughter needs, efforts to support her , and concerns she has about the child education.)

My daughter has cerebral palsy, her legs are severely affected, but her arms and hands are functioning efficiently with the help of the physical and occupational therapies. She has some difficulty in using her fingers sometimes. She does not suffer any health problems.

She studied for 4 years in a special needs centers (one year was spent in Rashid's Pediatric Center).They treated her with great care ,but both of the centers do not qualify their students academically.

My daughter is missing the physical and occupational therapies offered at the special needs center, she is deprived from practicing many sports such as swimming and horse riding. The center is rich in educational materials and activities.

As a parent I faced very difficult challenges and obstacles to transfer my daughter from special needs center to general school. The first condition that posed by the ministry of education and then the School Agency was to have a maid with the girl during the school day.

The child was assessed in Arabic language, mathematics, English, IQ test and another test to assess her concentration (focusing on things).Her level was to be in grade three (this was four years ago).But the educational district refused the results in spite of that the assessment was done by the ministry, and they decided to put her in grade one level in special classroom.

When the school year started I took her to many schools, all of them refused to accept her although we have an approval letter from the ministry...This school accepted, they put her in grade one in a general classroom as the special classes start later than the regular classes. The school teacher noticed her advanced level .And informed the school administration that the girl should be in regular classroom and higher level .But the administration could not put her in upper grades, the ministry refused that.

My daughter was educated in the centers and was able to read in Arabic and English .Also her mathematical abilities were excellent for her age at that time.

When special classes started they transferred her to grade one in special classroom. She stayed for one week she was very upset as the children were learning in very slow way ...she found it depressing and not challenging. The school principal communicated with the special education department in the

ministry and asked the supervisor for urgent meeting, finally they accepted her in the regular classroom.

Until grade three the situation was acceptable and bearable .The classrooms were in the ground floor. But when she reached grade four this school year, the suffering and pain started. In this school which has old building design, the upper grades are usually in the first floor with laboratories and activities rooms. The new buildings have their laboratories in the ground floor and some of these schools have grade four and five in ground floor. I went to several schools ...they refused my request, the schools administrations acted in a cruel way and with negative attitude with me .I had a recommendation paper from the school agency to accept the girl ...but all of the new primary schools administrations refused ... So the girl stated in her school ...both of us ... the girl and me are having this painful journey every day.

What can I tell about her daily challenges and disappointments .She is a bright smart girl .Her academic achievement percentage is over 96%, she can not join her peers in P.E classes, can not participate in field trips because the school bus is not modified for pupils with special needs. I tried this year to go with her in one of these trips ...it was difficult.

Once she is upstairs in the morning she can not be at the ground floor, it is very difficult and painful to go twice upstairs using the stairs ...you saw by your self... she can not join her friends in the playground in the break time or go to the canteen.

This year I brought a sponsor, he had a donation of 150,000 Dirham to install a lift in the building, my daughter could benefit from it and it would be useful for the school for long time .The KHDA refused the request which the school presented .They replied that the school is an old building and it will be removed in the new plans of the city. This was in September of this school year [the mother meant September 2008].

My daughter receives regular physical and occupational therapies in private institution on our expenses. They do not have these services in government schools .They also do not provide suitable buses for transportation I am responsible of the transportation to and from the school ...and also to take her upstairs, the school is not responsible. The maid helps her in transferring from a class to another; carry her books and helping her in whatever she needs during the day.

Appendix 12

Observation 4

I visited this primary school for boys in Dubai district three times .The first time was in the second week of April 2009, I met the principal to hand her the questionnaires for science teachers and there was a chat about the aim of the research. She informed me about a pupil with physical disability. I asked if it possible to observe the pupil during a science class and I need the approval of his parents and the science teacher and I gave her the informed consent to be given to the child's parents .She promised to speak to both of them and asked me to call her at the end of the week. When I called her she told me that the parents sent the informed consent and they did not mind and I can also intend the science class on Sunday 19th of April.

I was in the school on 19 th April at 7a.m. before the morning assembly started, I met the school principal and Pupil D mother.

She told me that she was coming every day and some times she stays all the school day and used to help the administration in attending classes when some teachers were absent. I asked her if I can interview her she agreed after the morning assembly and taking her boy upstairs as he was in grade four and his classroom in the first floor. I also asked her permission to take photos, she was very cooperative .She told me she will be with me and I can do what I see suitable for the research. She told me also that she hopes that such studies could make a positive change in the life of children with disabilities and their families.

I attended the morning assembly as the boy liked to participate in it .I saw him singing the national anthem with other pupils, listened to the presentations (called school broadcast إذاعة مدرسية) introduced by many pupils (Poem, Advices). I took one picture when he was in the playground for the morning Assembly. When the assembly finished the pupils were asked to go to their classes. Pupil D with his mother and a helper waited until all the pupils in the first floor were gone and then he started to go on the stairs with the assistance of the helper. I asked the boy to take photos, I noticed the pain on his face when he was ascending the stairs, when he reached his class he was exhausted, any one can notice that.

The principal asked me to be in her office to wait for the teacher because she did not arrive although the first period began. I told her I will go to do an interview with Pupil D mother and I will be back.

When I was back to principal office she told me that the teacher was absent, and gave me another appointment on 23rd of April. To make use of my time I asked her if it would be suitable to interview her in the mean time ..She agreed (see the interview with her).

On 23rd of April I was at school at 7 a.m. I sat in the principal assistant room until 9:30 a.m. First I was told that the teacher is testing some of her classes. Than she refused to show up ...I did not know the reason ...I was not told that she

Pictures



Interview with Pupil D Mother

Date: Sunday 19th April 2009.

Time: 7:35 – 8:00 a.m.

Q1.Can you please give a brief description of your son condition?

My son is ten years old .He has hereditary muscles infection they call it muscle fibrosis and weakness (تليف وضعف العضلات الوراثي), I have another boy with the same condition he is now 26 years old. In **Pupil D** case the condition was noticed very early when he was two years old only, while his brother the symptoms began when he was six years old. They told that this impairment is affecting boys more than girls.

The boy movements become more difficult as he gets older, he has pain in his muscles, he is taking medicine for the pain so he can attend school and sit for hours. There id also deformity in his gait .He has developed problems in breathing, the doctors said the level of oxygen is low in his blood .I watch him carefully, if he catches a cold he suffers a lot.

Moreover, the boy gets nervous quickly, any thing can irritate him.

Another problem he faces is when he stay in one position for long time (as when he sleeps) he undergoes stiffness in the muscles and a lot of pain .I don not leave him sleep more than five hours continuously.

Q2.Tell me about the challenges you are facing in supporting him to receive his education in a general school.

I want him to continue his education. His brother (Thanks God) finished his education. The boy is a bright kid; he works hard and deserves to have the opportunity to have education as any other boy in his age.

I faced ...or more accurately he faced many difficulties and obstacles.

The past three years he was in another school .The teachers attitude was very unkind ... the school administration refused my request to have his class in the ground floor. The boy did not like the school because of the teachers.

Q3.Can you tell me what do you mean that the teachers were unkind to him?

He always reminding me of an incident with one of his teachers that hurt his feelings badly .He could not forget that incident ... At that time he was not using the wheelchair, while he was entering his classroom to reach his desk and was walking very slowly (due to his condition) that teacher

asked him (cruelly in front of the class) Are you disabled to walk in this way? The boy can not forget this ... he was hurt and still.

Q4.What other difficulties did you encounter also?

When he reached grad 4 last year ,I looked for school that have the class in the ground floor .I went to 3 schools ,they refused to accept him because of his condition ...you know the ministry can not do any thing to prevent this ...they can not force a school to accept pupils with difficult conditions.

This school accepted him but they told me that the class is in the first floor and they can not bring it down .I accepted because no school will accept him ...I knew that ... he is suffering each day physically and emotionally.. I wish things can be changed.

I help him with the helper (you saw him) every day to reach his classroom.

Q5. What kind of transportation he used to reach the school?

I bring him by our private car, he can not use the school bus.

Q6.What kind of therapy he receives?

He does not receive any physical therapy .I took him to United Kingdom and India for therapy , They just gave him pain relief medicines .I also sent his medical report to a hospital in the USA and another in Australia they have the same opinion ,there is no cure for his case.

Appendix 13

Questionnaire Procedures

Procedures

The first step was to seek the permission from the KHDA to distribute the questionnaire in the primary schools (Appendix 5)

The researcher then obtained from the KHDA (Statistics Department in the School Agency) lists of the number of primary (cycle one) schools and science teachers in Dubai's district and the numbers of science teachers .when the two lists were compared, I found that four schools were not included in the teacher's lists. It was necessary to visit these schools to determine the numbers of teachers as the phone calls were not answered. The results of this investigation were as following:

In second semester of the school year 2008/2009 there was **29 primary schools** (3 of them includes other levels and called combined schools), with **161 science teachers** (KHDA 2009).

Target Population (Sampling Frame)

In using surveys, the larger the sample is the less margin of error (sampling error) occurs, which means "the less potential error that the sample will be different from the population", and virtually the statically significant results are obtained (Creswell 2008:156 ;Munn & Drever 2004; Mertens & Mclaughlin 2004).

Although it needed a tremendous effort to distribute the questionnaire personally, I found it worth doing it .I assumed that the information that would yield can be of great benefit for this study as it provided a panoramic view of science teachers of students with SEN in public schools. And important recommendations can be derived from the various data .

The target population (or sampling frame) is "the actual list of sampling units from which the sample is selected"(Creswell 2008:393) or in other words it is the list of individuals in a population that can be obtained (**The Population is the group of individuals having one characteristics that distinguishes them from other groups Creswell 2008:393**). The target population for this survey was science teachers in urban and suburban areas in Dubai; rural schools (3 schools) were excluded as it was difficult for me to reach.

The result was that the questionnaire involved 148 science teachers in 26 schools.

Questionnaire Development

Preparing the questionnaire

Due to time constrains I considered modifying an existing instrument .I used online search (specifically "google" searching engine) .I looked for ones that the data which will provide fit the research questions number 3 & 4.I tried the

following terms such as: "questionnaire for teachers" /or and "of students with SEN", "teachers attitudes towards inclusion/or teaching students with SEN".I found 3 suitable surveys for my research, I chose from each a number of questions and combined them to form my instrument . The three surveys were of free access and they do not have any statements indicated restrictions on using them.

The result was a questionnaire (Appendix 14) consisted of three parts as following:

First part: A closed –ended questions developed by the researcher, consisting nine demographic questions concerning teachers background (e.g. age; years of experience; qualifications); according to Creswell (2008) the demographic questions assess the personal characteristics of the individuals in the sample.

Second part: A Likert scale measuring teachers' feelings of competency and concerns toward inclusion of students with SEN, consisting 12 questions in two sections.

Firs section was adopted from a thesis's survey for Susan Ross in 2002 (see the citation in references); this section is consisted of four questions examine the feelings of competency for the teachers about educating students with SEN within the regular classroom (some replacement of the disabilities terms were done to suit the UAE educational context,e.g. mental retardation was replaced by intellectual disability).

Second section was mainly from a thesis for Jack Alexander in 2001(see the citation in references); this section is consisted of eight questions measuring the teachers concerns toward inclusion of students with SEN.

Third part: A closed –ended questions adopted from a questionnaire for the "Association of Secondary Teachers Ireland (ASTI)" titled "Schools and Students with Special Education Needs-questionnaire for teachers (2003)".I used three questions from this survey aimed to know the teachers view on the capacity of their schools to meet the needs with students with SEN (with some adaptations to suit UAE educational context).The fourth question in this part was added after the advise of the research advisor when revised by her.

After preparing the questionnaire I translated into Arabic for the teachers; there are two versions Arabic and English (Appendix 14).

Revising and Piloting

The questionnaire was revised by the research advisor (both in Arabic and English) ; the recommended changes were done. Than I asked five of my master program colleagues to complete it (3 in Arabic & 2 in English), their feedbacks were considered .Finally, I turned Arabic copy (as it is the one to be administered to the public schools) to two supervisors in School Agency (the science and the Arabic language) to revise it specially the questions warding.

Administering the questionnaire

I started distributing the questionnaire on the 7th of April 2009 and ended on the first week of May 2009. I delivered the questionnaires to 22 schools personally to the schools administrations to be delivered to science teachers, while for four schools I handed the questionnaires to science teachers in a science workshop (conducted by the science supervisor) and were returned by them in the next workshop. To minimize the time needed to distribute the questionnaires, I organized the distribution process to deliver them to 5/or 6 schools a week, and determined the schools locations (in advance) to be delivered at the same day.

When delivering the questionnaires to a school, I was explaining to the school principal (or the administrative officer who represents her) the aim for the study and handing her the permission letter from The KHDA (Appendix 5) . I prepared a list form to write down the number of teachers in each school, the number of questionnaire copies given to each school and the number of returned copies. I make sure to take the officers telephone numbers, and to give them my number. I emphasized that I welcome any inquiries about the questions by the teachers. I called each school after one week to remind them, and if the questionnaires were ready I tried to collect them as soon as I could.

Response Rate

The response rate was very high .I distributed 148 questionnaires, 137 of them were returned. The response rate was 91.3%. This high rate retention rate can be referred to many factors in my opinion. It may be due to the personal communication with school administrations which helped in clarifying the aim of the study and make awareness of the importance of having the teachers opinions in a controversial issue such as inclusion. Being a practitioner-researcher made it feasible for me to remind respondents (through their schools administrations) to complete the questionnaire (Munn & Drever 2004). Another reason may be due to the science teachers' desire to express their feelings about including students with SEN in regular classes; as this is one of the rare opportunities for them to make their voices heard.

Appendix 14

The English Copy

Questionnaire for Science Teachers

Science Curriculum

and

Students with Special Education Needs

The aim of this questionnaire is to investigate the primary science teachers knowledge in teaching students with special education needs (SEN) and their experiences in modifying science curriculum .The questionnaire also explores the teachers awareness of the current situation in the UAE educational policy which is heading towards including students with SEN in regular classrooms, and the problems they are facing in teaching those children.

First: Teacher's Background

1. What is your Nationality?

Emarati Arab country other

2. How old are you?

20- 25 years 26-30 years 31-35 years More than 35 years

3. How many years have you been teaching?

1-5years 6-10 years 11- 15 years More than 15 years

4. What was your major of study?

Bachelor of Education Bachelor of Science
Diploma of Education Other – Please specify

.....

5. Did you have in your preparation program as a teacher any instructions of how to teach students with disabilities?

Yes No

6. Are you aware of the federal law no 29 (2006) of the rights of people with special needs?

Yes No

7. Do you teach currently any student with SEN?

Yes No

8. If your answer for the previous question was yes, specify the types of disabilities that your students have (you can chose more than one)

Learning Difficulty Physical Disability intellectual disability
Visual Impairment Hearing Impairment Others you don't know

9. If your answer to question 7 was (yes), please explain how do you modify the subject materials to meet the students special needs?

.....
.....
.....

Second: Teachers feeling of competency and concerns toward inclusion of students with SEN:

Please circle the number that indicates your opinion or that best describes how you feel at the present time on a scale from 1 to 5, with :

1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5=Strongly Agree

My experience in educating children with special needs within the regular classroom:					
1. I am pleased to have this challenging opportunity.	1	2	3	4	5
2. I feel I have sufficient guidelines to tell me what to do.	1	2	3	4	5
3. I feel I have sufficient skills to teach students with special needs in my class.	1	2	3	4	5
4. I feel competent teaching children with some special needs than with others. please rate :					
a. Learning difficulties.	1	2	3	4	5
b. Physical impairments.	1	2	3	4	5
c. Visual impairments.	1	2	3	4	5
d. Hearing impairments.	1	2	3	4	5
e. Intellectual disability.	1	2	3	4	5
f. Behavior problems.	1	2	3	4	5
My concerns toward inclusion of students with SEN:					
5. Student with special needs have a basic right to receive their education in the regular education classroom.	1	2	3	4	5
6. Student with special needs benefit (academically) from inclusion in regular education classroom.	1	2	3	4	5
7. Student with special needs improve their social skills when placed in a regular education classroom.	1	2	3	4	5
8. Student with special needs require more attention and assistance than the regular education teachers can provide.	1	2	3	4	5
9. Peers are not accepting of students with special needs in the classroom.	1	2	3	4	5
10. Although inclusion of students with special needs is import, the necessary resources are not available for it to succeed	1	2	3	4	5
11. Science teachers have the instructional skills and educational background to teach students with special needs in the regular education classroom.	1	2	3	4	5
12. Science teacher receives little assistance from special education teachers in modifying instruction for students with special needs.	1	2	3	4	5

Third: Teachers Views on the capacity of their school to meet the needs of students with SEN:

Question 1: Which of the following statements most accurately represents the situation in your school (Please tick relevant boxes)			
	Yes	No	Don't Know
Our School building is accessible to students with physical disabilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is good level of integration of students with special needs in the academic and social life of the school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Question 2 :In order to promote the inclusion of students with special needs in our school , our school requires (Please tick relevant boxes)			
	Yes	No	Don't Know
More accommodation/space			
Refurbishment of school building			
Availability of special education teachers			
Availability of resource teachers			
Availability of additional personnel to assist in my classes			
Greater access of teachers to training			
Awareness raising programs for teachers and students			
Adequate classroom/ Lab materials and equipments			
Reduced class size (e.g., 20 or less).			

Question 3: What do you think modifying the science curriculum would require :
(Please tick relevant boxes; you can choose more than one)

- Modifying the assessment and examination.
- Modifying materials.
- Extra expenses and budgeting .
- Training teachers.
- Extra human resources like a shadow teacher.

Any other

.....

The Arabic Copy

استبانة لمعلمات العلوم

منهج العلوم والتلاميذ
ذوو الاحتياجات التعليمية الخاصة

أداة بحث لرسالة ماجستير للباحثة كلثم راشد اليتيم
الجامعة البريطانية في دبي
كلية التربية

بسم الله الرحمن الرحيم

عزيزتي المعلمة

أود في البداية توجيه الشكر لجميع معلمات العلوم للحلقة الأولى ، وتوجيه العلوم ، وتوجيه المرحلة في منطقة دبي ، للمشاركة في هذا العمل الذي يهدف إلى خدمة وتطوير تعليم العلوم في المرحلة التأسيسية في المدارس الحكومية في دولة الإمارات العربية المتحدة .

هذه الاستبانة هي إحدى أدوات البحث التي ستستخدم في رسالة الماجستير ، التي تتقصى تدريس العلوم في الحلقة الأولى للمدارس الحكومية للتلاميذ ذوي الاحتياجات التعليمية الخاصة و/ أو الإعاقات في إمارة دبي .

إن الغرض الرئيس من هذه الاستبانة هو استقصاء معرفة معلمات العلوم في المرحلة التأسيسية بطرق تدريس مادة العلوم للتلاميذ من ذوي الاحتياجات التعليمية الخاصة و/ أو الإعاقات ، وخبرتهن العملية لملاءمة المنهج لهم .

كما تهدف إلى استطلاع مدى وعي المعلمات بتوجه السياسة التعليمية نحو دمج التلاميذ ذوي الاحتياجات التعليمية الخاصة / أو الإعاقات في صفوف التعليم العادية، والصعوبات التي يواجهنها في عملية تدريس هذه الفئة من التلاميذ.

وتقبلوا جزيل الشكر والامتنان

الباحثة كلثم راشد النعيم
الجامعة البريطانية في دبي

الموافق
ربيع الآخر 1430 هجري
إبريل 2009 ميلادي

أولاً : البيانات الشخصية والخبرة العملية:

ضعي إشارة √ في المربع الذي يشير إلى إجابتك :

1. ما جنسيتك ؟

إماراتية دولة عربية أخرى

2. كم عمرك ؟

25 - 20 سنة 30 - 26 سنة 35 - 31 سنة أكبر من 35 سنة

3. كم عدد سنوات عملك كمعلمة ؟

5 - 1 سنوات 10 - 6 سنوات 15 - 11 سنة أكثر من 15 سنة

4. ما نوع تخصصك الدراسي ؟

بكالوريوس تربوية بكالوريوس علوم دبلوم تربوية تخصص آخر الرجاء تحديده

5. هل تلقيت في برنامج تدريبك كمعلمة أي نوع من الإرشادات لطريقة تعليم التلاميذ ذوي الاحتياجات التعليمية الخاصة و/أو ذوي الإعاقات ؟

نعم لا

6. هل اطلعت (أو لديك معرفة) على القانون الاتحادي رقم 29 (2006) لحقوق الأشخاص ذوي الاحتياجات الخاصة ؟

نعم لا

7. هل تقومين حالياً بتدريس أي تلميذ/ أو تلميذة من ذوي الاحتياجات التعليمية الخاصة و/أو الإعاقات ؟

نعم لا

8. إذا كانت إجابتك على السؤال 7 بنعم ، حددي نوع الإعاقة لدى التلميذ/ أو التلميذة (يمكنك اختيار أكثر من نوع) ؟

صعوبات تعلم إعاقات حركية إعاقات ذهنية
إعاقات بصرية إعاقات سمعية إعاقات أخرى لا أعرفها

9. إذا كانت إجابتك بنعم على السؤال 7 ، كيف تقومين بتهيئة المادة التعليمية لتلائم حالة التلميذ / أو التلميذة الخاصة ؟ الرجاء التوضيح

ثانياً : مشاعر المعلمين بالكفاءة والأمور المقلقة من عملية دمج التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات في المدارس الحكومية

ضعي دائرة حول الرقم الذي يشير إلى رأيك أو أفضل ما يصف شعورك في الوقت الحالي على مقياس من 1 إلى 5 ، حيث تدل الأرقام على:

1= غير موافقة بشدة 2= غير موافقة 3= محايدة 4= موافقة 5= موافقة بشدة

خبرتي العملية في تعليم التلاميذ ذوي الاحتياجات التعليمية الخاصة و/ أو الإعاقات في صفوف التعليم العادية					
5	4	3	2	1	1. أنا مسرورة للحصول على هذا التحدي العملي.
5	4	3	2	1	2. أشعر بوجود لوائح إرشادية كافية تدلني على ما يجب عمله.
5	4	3	2	1	3. أشعر بوجود المهارات الكافية لدي لتدريس التلاميذ ذوي الاحتياجات التعليمية الخاصة و/ أو الإعاقات في صفتي .
4. أشعر بالكفاءة عند تدريس التلاميذ الذين لديهم بعض الاحتياجات الخاصة أكثر من غيرها ،الرجاء تحديد المقياس لكل حالة :					
5	4	3	2	1	أ. صعوبات التعلم.
5	4	3	2	1	ب. الإعاقات الحركية.
5	4	3	2	1	ج. الإعاقات البصرية.
5	4	3	2	1	د. الإعاقات السمعية.
5	4	3	2	1	هـ. الإعاقات الذهنية.
5	4	3	2	1	و. الاضطرابات السلوكية .
الأمر التي تقلقني من عملية دمج التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات في المدارس الحكومية					
5	4	3	2	1	5. التلميذ ذو الاحتياجات التعليمية الخاصة و / أو الإعاقة لهم حق أساسي في تلقي تعليمهم في الصف العادي في المدرسة.
5	4	3	2	1	6. يستفيد التلميذ ذو الاحتياجات التعليمية الخاصة و / أو الإعاقة أكاديميا من عملية دمجهم في الصف العادي في المدرسة.
5	4	3	2	1	7. تتحسن المهارات الاجتماعية لدى التلميذ ذي الاحتياجات التعليمية الخاصة و/ أو الإعاقة عند وضعه في الصف العادي في المدرسة.
5	4	3	2	1	8. يتطلب التلميذ ذو الاحتياجات التعليمية الخاصة و/ أو الإعاقة اهتماما ومساعدة أكثر مما يستطيعه معلم المادة العادي.
5	4	3	2	1	9. لا يتقبل الرفقاء وجود تلاميذ لهم احتياجات تعليمية خاصة و/ أو إعاقات معهم في الصف العادي.
5	4	3	2	1	10. رغم أهمية عملية الدمج للتلاميذ ذوي الاحتياجات الخاصة و/ أو الإعاقات ، إلا أن المصادر الضرورية لنجاح هذه العملية غير متوفرة .
5	4	3	2	1	11. يمتلك معلم العلوم مهارات التدريس والخلفية العلمية لتدريس التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات .
5	4	3	2	1	12. يتلقى معلمو العلوم مساعدة قليلة من معلمي التربية الخاصة لملاءمة طرق التدريس للتلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات.

الثالث: آراء المعلمين حول أهلية مدارسهم لتحقيق احتياجات التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات :

ملاحظة: لجميع الأسئلة ضع إشارة √ في المربع الذي يدل على اختيارك

السؤال الأول: أي العبارات التالية توضح بدقة أكبر الوضع في مدرستك:			
لا أعرف	لا	نعم	
			مبنى مدرستنا مهيب و يسهل التنقل فيه من قبل التلاميذ ذوي الإعاقات الحركية.
			يوجد مستوى جيد لدمج التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات في مدرستنا.
السؤال الثاني : من أجل تعزيز دمج التلاميذ ذوي الاحتياجات التعليمية الخاصة و / أو الإعاقات ، تحتاج مدرستنا إلى :			
لا أعرف	لا	نعم	
			المزيد من التجهيزات / والمساحة.
			تجديد المبنى المدرسي.
			توفير معلمي التربية الخاصة.
			توفير معلمي غرف المصادر التعليمية.
			توفير معلم مساعد لمعاونتي في الصف .
			إشراك المعلمين في المزيد من التدريب المهني .
			برامج توعية للمعلمين والتلاميذ.
			تجهيزات ومواد ملائمة للصف الدراسي والمختبر.
			تقليل عدد التلاميذ في الصف (مثال: 20 تلميذ أو أقل) .

السؤال الثالث:

في اعتقادك ما الأمور التي تلزم لملاءمة (أو تعديل) منهج العلوم للتلاميذ ذوي الاحتياجات التعليمية الخاصة و/أو الإعاقات) ضع إشارة √ في المربع الذي يدل على اختيارك ، يمكنك اختيار أكثر من واحد) :

تعديل طرق التقييم والاختبارات.

تعديل المادة التعليمية.

زيادة الموارد المالية والمصاريف .

تدريب المعلمين.

توفير الموارد البشرية مثل المعلمين المساعدين .

تعديلات أخرى (الرجاء ذكرها)

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Appendix 15

Questionnaire Analysis

Science teachers (N=137) in 26 primary public schools in Dubai District were surveyed. The survey covered all of Dubai public primary schools; three rural schools were only excluded. (Initially the questionnaire was delivered to 148 science teachers in 26 urban and suburban schools).

They were surveyed regarding three main issues:

- Academic and experience background about teaching pupils with special education needs (SEN).
- Teachers feeling of competency and concerns toward inclusion of students with SEN.
- Teachers views on the capacity of their schools to meet the needs of students with SEN

Results:

Many issues emerged from the analysis; they can be summarized as following:

DATA ANALYSIS

(Part 1)

First Section: Teachers' Background:

- a. Most of the primary stage science teachers in the public schools of Dubai are UAE nationals (82%) ;Fig1.

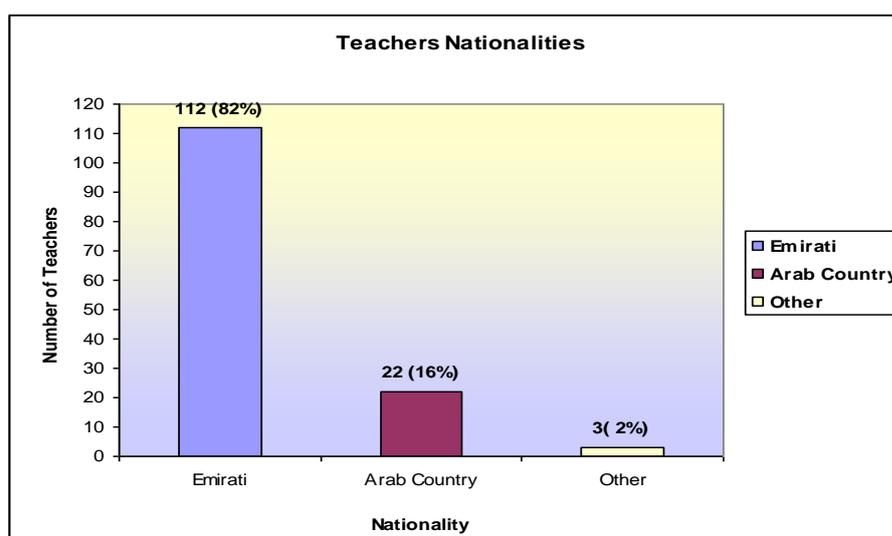


Figure1. Science Teachers Nationalities in the Public Primary Schools in Dubai.

b. Small percentage of the science teachers are novice teachers (10%), while the rest have more than 5 years of experience (Mode : 11-15 years); Fig 2.

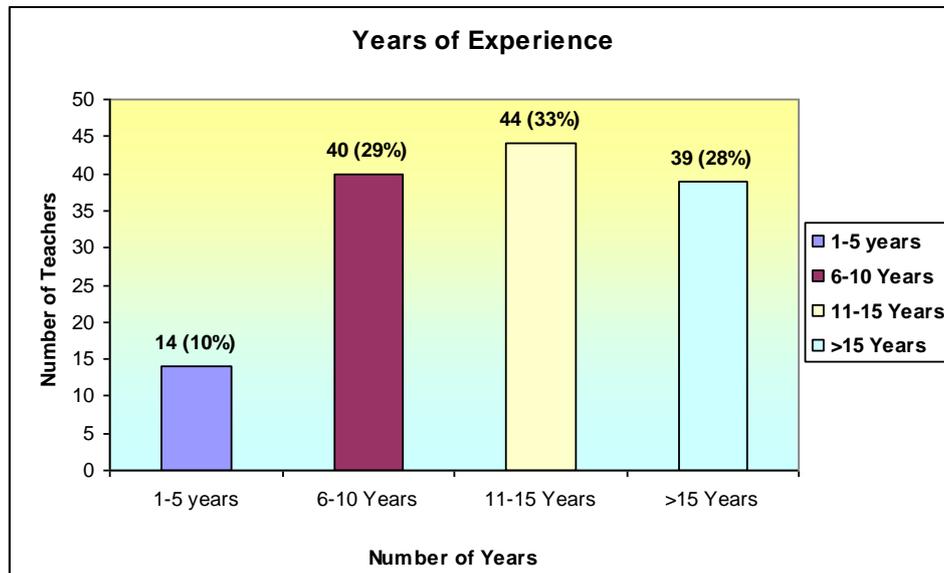


Figure2. Science Teachers Years of Experience.

c. High percentage of the science teachers have Bachelor and diploma of education certificates (Bachelor of education 69%; Diploma of education 15%); Fig3

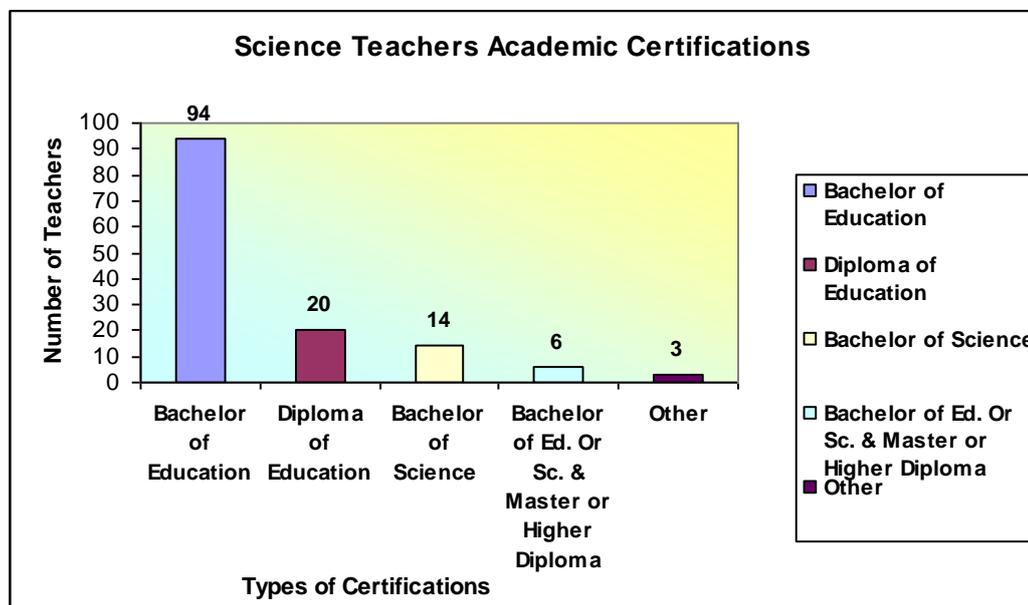


Figure3. Science Teachers Certifications.

d. The science teachers lack the knowledge to teach students with SEN (Small percentage received training in this area; 19% of the study sample); Fig4.

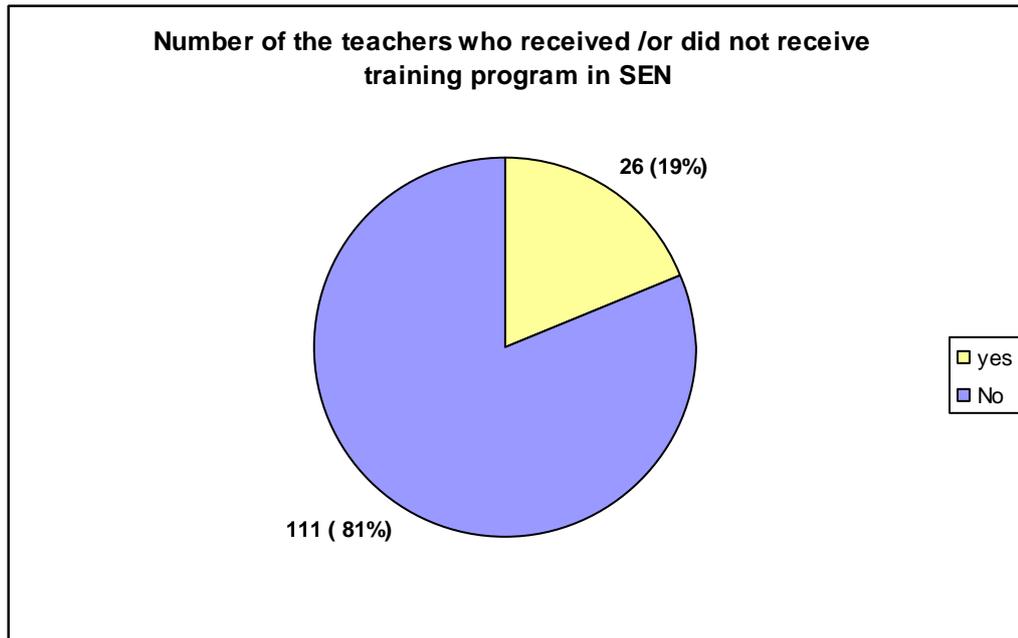


Figure4. The number of science teachers who received/or did not receive training program in SEN.

e. They have little awareness of the Federal law concerning the rights of individual with special needs; Fig5.

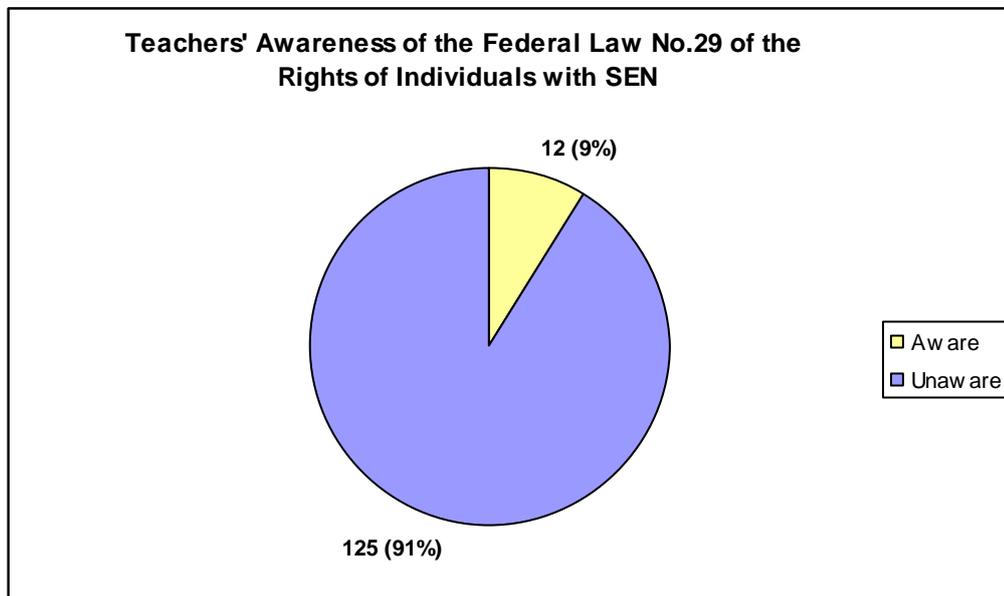


Figure5. The Percentage of the awareness of the Federal Law No. 29 concerning rights of the individuals with SEN.

f. About a third (29.2%) of the science teachers in the primary (Cycle One) schools stated that they are currently teaching pupils with SEN (40 out of 137 teachers who were surveyed).

DATA ANALYSIS

(Part 2)

This is a summary for the answers of the second section of the questionnaire. I have separated question 4 because it consists of six sub-questions

Second: Teachers feeling of competency and concerns toward inclusion of students with SEN:

Please circle the number that indicates your opinion or that best describes how you feel at the present time on a scale from 1 to 5,

with: 1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5=Strongly Agree

Question NO.	Frequency of each reply						Mode	Standard Deviation
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Answer		
My experience in educating children with special needs within the regular classroom:								
Q1 - I am pleased to have this challenging opportunity.	30	28	38	22	10	9	3	1.393188
Q2 - I feel I have sufficient guidelines to tell me what to do.	48	42	26	10	5	6	1	1.342209
Q3 - I feel I have sufficient skills to teach students with special needs in my class.	48	41	22	17	4	5	1	1.334831
My concerns toward inclusion of students with SEN:								
Q5 - Student with special needs have a basic right to receive their education in the regular education classroom.	17	23	43	30	17	7	3	1.345683
Q6 - Student with special needs benefit (academically) from inclusion in regular education classroom.	22	33	32	33	12	5	2	1.347158
Q7 - Student with special needs improve their social skills when placed in a regular education classroom.	13	19	35	49	14	7	4	1.267514
Q8 - Student with special needs require more attention and assistance than the regular education teachers can provide.	7	6	8	36	76	4	5	1.129496
Q9 - Peers are not accepting of students with special needs in the classroom.	18	39	37	29	8	6	2	1.262993
Q10- Although inclusion of students with special needs is import, the necessary resources are not available for it to succeed	8	9	12	42	59	7	5	1.22584
Q11- Science teachers have the instructional skills and educational background to teach students with special needs in the regular classroom.	46	42	32	13	2	2	1	1.134569
Q12- . Science teacher receives little assistance from special education teachers in modifying instruction for students with special needs.	32	26	35	29	3	2	3	1.347278

Question NO.	Frequency of each reply						Mode	Standard Deviation
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Answer		
My experience in educating children with special needs within the regular classroom: I feel competent teaching children with some special needs than with others. please rate :								
Q4a Learning difficulties.	35	23	31	31	6	11	1	1.259075
Q4b Physical impairments.	36	19	23	29	9	21	1	1.710766
Q4c Visual impairments.	57	26	18	10	4	19	1	1.775925
Q4d Hearing impairments.	54	29	19	11	2	22	1	1.798712
Q4e Intellectual disability.	63	29	13	6	3	23	1	1.851131
Q4f Behavior problems.	51	23	20	15	2	26	1	1.872987

Many issues also emerged from the analysis of second part. They can be summarized as following:

- a. The majority of the science teachers stated that they feel they do not have sufficient guidelines or skills to work with students with SEN [Questions 2 & 3: Mode = 1 (Strongly Disagree); SD= 1.3].
- b. They express their concerns about the requirements of teaching students with special needs (Question 8 ; Mode = 5 (Strongly Agree) ;SD=1.1) and the availability of necessary resources to teach them (Question 10, Mode= 5 (Strongly Agree) ;SD=1.2) .
- c. The significant answers were for Question 4 which shows the negative attitude of science teachers towards teaching students with SEN. The majority of them stated they feel they are not competent teaching those children (Question (4 a) to (4 f) ;Mode =1 Strongly Disagree).

DATA ANALYSIS

(Part 3)

This is a summary for the answers of the third section of the questionnaire.

Third: Teachers Views on the capacity of their school to meet the needs of students with SEN:

Question 1: Which of the following statements most accurately represents the situation in your school (Please tick relevant boxes)

QUESTIONS	Frequency of Answers				TOTAL
	YES	NO	DO NOT KNOW	NO ANSWER	
Our School building is accessible to students with physical disabilities.	29	99	9	0	137
There is good level of integration of students with special needs in the academic and social life of the school.	29	76	31	1	137

- High percentage (72%) of the teachers stated that their school buildings are not accessible to students with physical disabilities; Figure 6.

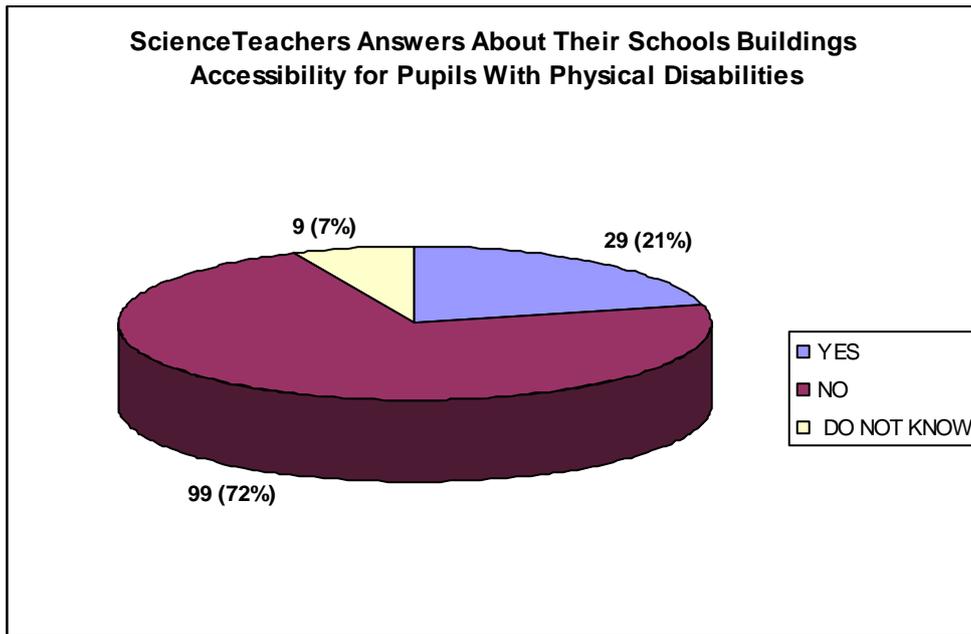


Figure 6. Teachers statements about their schools accessibility for students with physical disabilities.

- On the other hand, 55% of the teachers stated that their schools do not have good level of integration of students with SEN. What is noticeable was that a considerable percentage does not know about this issue (23%); Figure 7.

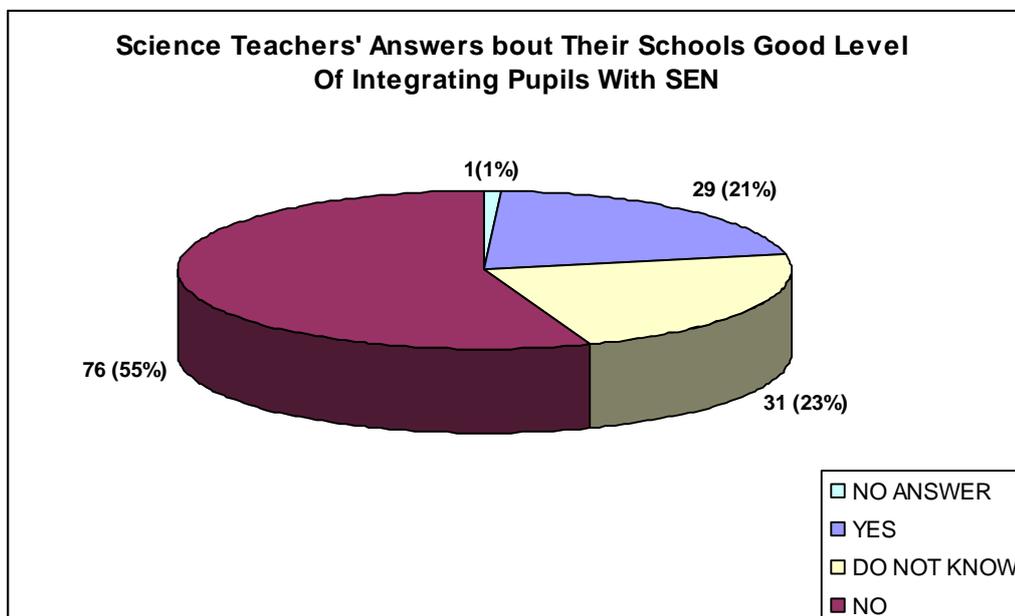


Figure7. Teachers statements about the availability of good integration of students with SEN in their schools.

Question 2: In order to promote the inclusion of students with special needs in our school, our school requires (Please tick relevant boxes)

	Frequency of Answers				TOTAL
	YES	NO	DO NOT KNOW	NO ANSWER	
More accommodation / Space	120	7	8	2	137
Refurbishment of Building	91	30	15	1	137
Availability of Special Ed Teachers	118	17	1	1	137
Availability of Resource Teachers	114	20	1	2	137
Availability of Assistance Personnel	127	10	0	0	137
Greater Access of Teachers Training	128	5	4	0	137
Awareness Raising Programs	133	3	1	0	137
Classroom/ lab Equipments	129	6	2	0	137
Reduced Class size	130	6	1	0	137

Following are some diagrams which show the frequencies of the teachers answers on this part Figures 8 , 9 &10:

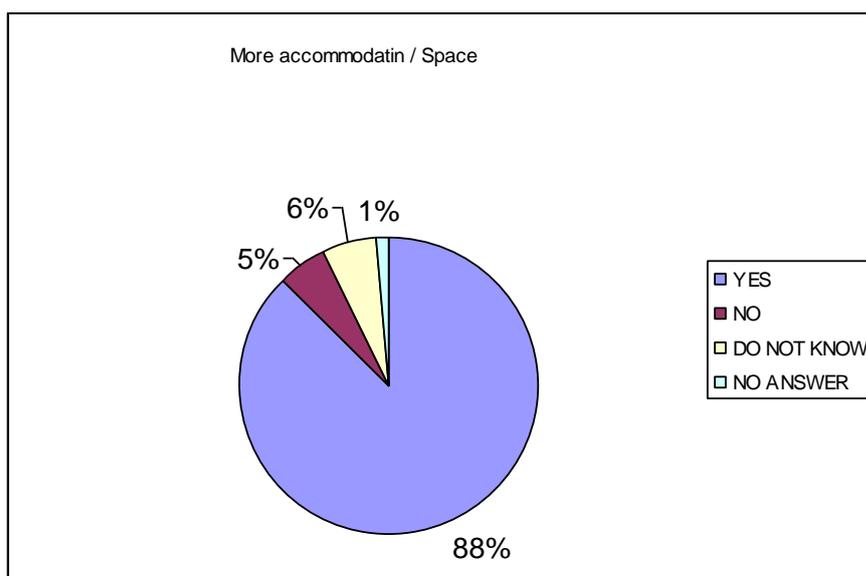


Figure 8. The percentage of teachers answers about their views of the role of the accommodations /space on promoting the inclusion.

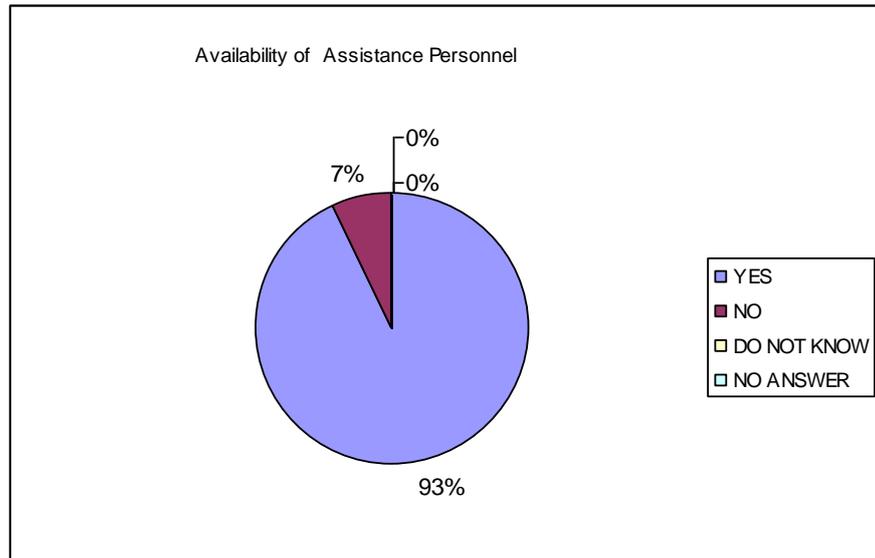


Figure9. The percentage of teachers answers about their views of the availability of assistant personnel on promoting the inclusion.

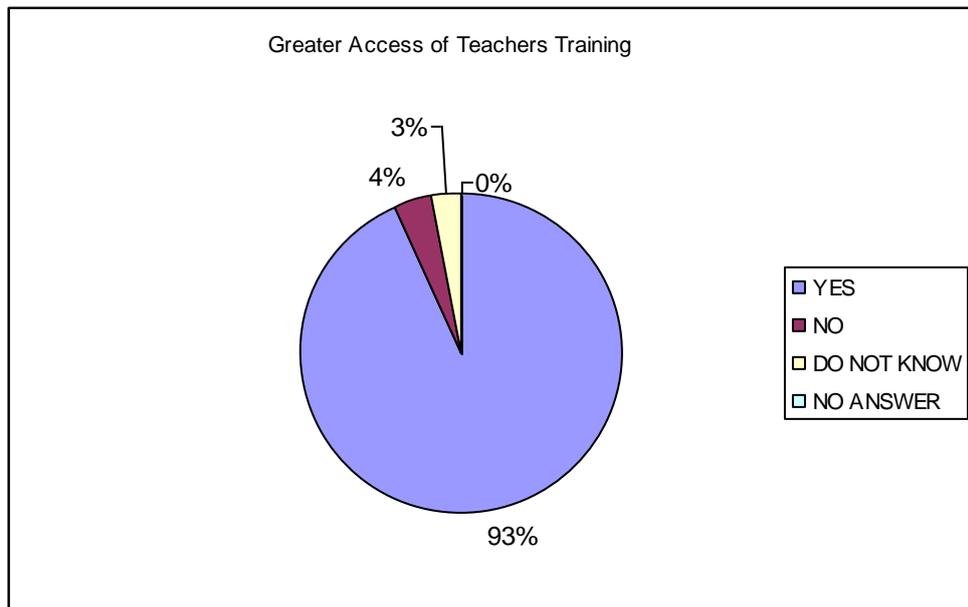


Figure 10. The percentage of teachers answers about their views of the teachers training on promoting the inclusion.

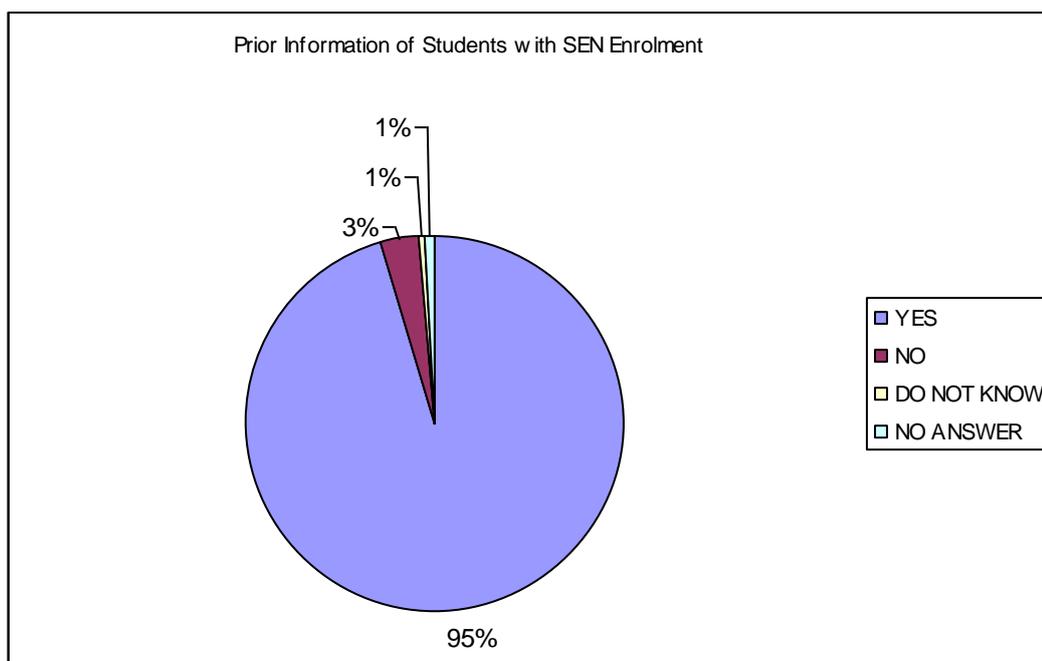


Figure 12. The percentage of teachers' answers about their views of the prior information of students with SEN as a challenge arising from the enrolment of students with SEN.

Question 3: What do you think modifying the science curriculum would require :

(Please tick relevant boxes, you can chose more than one)

- Modifying the assessment and examination.
- Modifying materials.
- Extra expenses and budgeting .
- Training teachers.
- Extra human resources like a shadow teacher.

Frequency of Answers		
	CHOSEN	NOT CHOSEN
Modifying the assessment	77(56.20%)	60(43.80%)
Modifying materials	87(63.50%)	50(36.50%)
Extra expenses and budgeting	72(52.55%)	65(47.45%)
Training teachers	115(83.94%)	22(16.06%)
Extra human resources	119(86.86%)	18(13.14%)

When the teachers were asked at the end of the question 3 to write the other modifications they recommend, most of the answers were their opinions about including pupils with SEN . Their comments showed their concerns and negative attitude towards the inclusion of those children. Following examples of their comments:

1 "They should provide special public schools for students with SEN, regrettably there are no government schools for such cases."

2 "In my opinion students with SEN need special teaching methods, especially for intellectual, hearing and vision impairments. Physical disability needs special resources. At the same time I think that including students with special needs in regular schools will have negative effect on the psychological status of the others."

3 " I wish that they can provide special science teachers to teach students with SEN in their special classes , this will be much better than including them in general classroom. "This is from my personal experience".

(A notice from the researcher: The teacher drew four lines under the word including).

4 "Those students do not follow the rules and this is because of the special teachers who teach them .When they attend a regular classroom they disturb the other students and this is not on the teacher's interest and will affect the learning process " .

5 "If the students with SEN will be included in general classrooms, what will be the role of special and resource teachers in the schools? Why are those teachers at schools!!!".

6 "Teaching students with disabilities needs practical and proper training for the teachers and for a sufficient period. Moreover prior preparation (awareness) for the students, the parents and the school administrations for the inclusion process is needed. We are not against inclusion but we do not have the experience to teach this group of learners."

7 "a. Inclusion is a difficult process because it needs financial and moral efforts. For example, the schools must be provided with specific equipments, teachers training programs, assistance teachers and accommodations in the school buildings. And at last to prepare the students to accept this process because if they do not accept the existence of their peers with disabilities among them this will reflect negatively on those students.

b. In addition, there are severe disabilities that can not be included at school even if all the needs were provided (as what were mentioned previously)."

8 "-I am not against inclusion and the students with disabilities have the right for education, but frankly speaking, we -as teachers- are not prepared or trained for that .I have the right to be well prepared to take such responsibility and not to be faced by difficulties or failure, my school as a whole (e.g. its building, equipments and the high number of students in each classroom) is not prepared. Before introducing inclusion it must be preceded by training programs, lectures and workshops for the teachers to facilitate its implementation.

- I also claim the need for a special teacher with the subject teacher in the classrooms.
- Beside all of the prior requests, there must be part of the curriculum that supports the inclusion process so that the children will be aware of these cases. In addition Awareness programs for students and parents should be included."
Thank you."

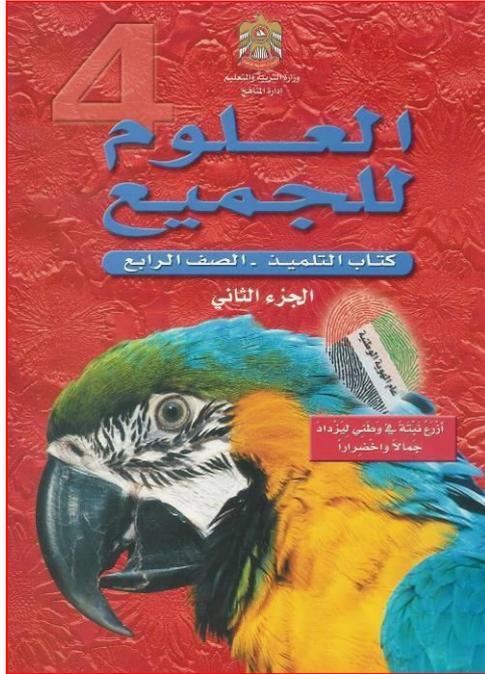
9 " I am with the inclusion of the students with physical disabilities, may be the hearing impairment but not with the other disabilities. There must be teacher training programs and rehabilitation before the inclusion is implemented."

9 "It is difficult to include disabled student with normal students."

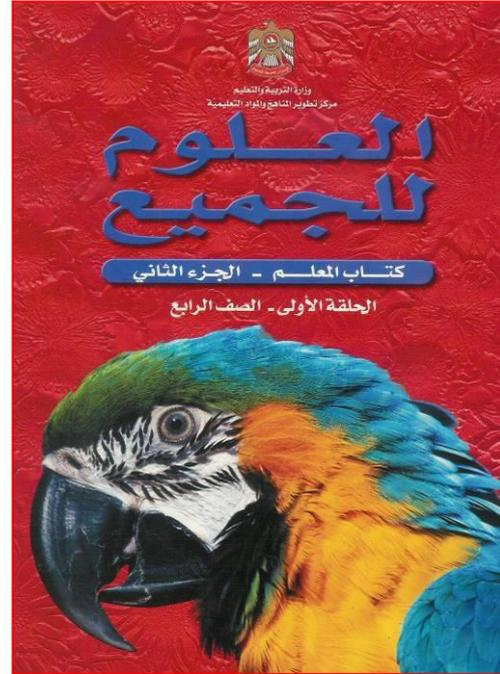
10 "Provide enrichment programs on how to deal with this group of learners. In addition they need special learning materials because this curriculum is not suitable for them. The inclusion of students with SEN in government schools is a good development, but it is better to put those students in special classes with special laboratory equipments and teachers who are qualified to teach them."

Appendix 16

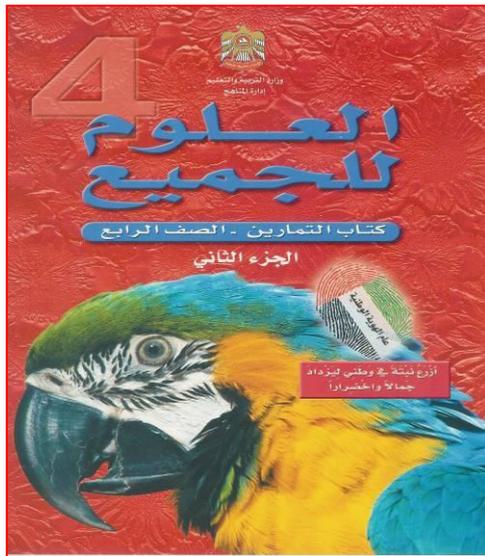
Samples of Science text books for Cycle One /primary stage (Pupil's and teachers' editions).



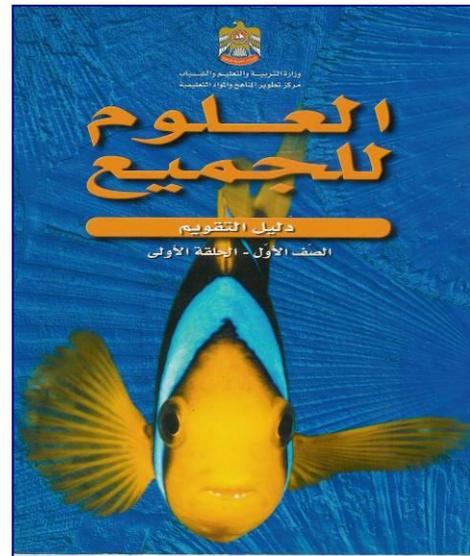
Science for All –Pupil Book
Grade 4 –Part Two



Science for All – Teacher Book
Grade 4- Part Two



Science for All – Pupil Activity
Book Grade 4 –Part Two



Science for All – Teacher Book
Assessment Guide- Grade One

Appendix 17

Samples of links in Science Teacher's Book for pupils with SEN

Example 1

Excerpt from Grade 3 Teacher's Book (Part 1) indicating teaching strategies for pupils with SEN (استراتيجيات للتلاميذ ذوي الاحتياجات الخاصة). The strategies were recommended for :pupils with Learning Difficulties (صعوبات تعلمية) , with Visual Impairments(ذوو الحاجات البصرية الخاصة) and with Hearing Impairments(ذوو الحاجات السمعية الخاصة).

الوصول إلى المتعلمين كافة

استراتيجيات للتلاميذ ذوي الحاجات الخاصة

صعوبات تعلمية

- التلاميذ الذين يعملون دون مستوى الصف سوف يستفيدون من التركيز على بعض الأسئلة قبل القراءة، أو من تكرار القراءة. اكتب على اللوح ثلاثة إلى خمسة أسئلة تريد أن يبحث التلاميذ عن إجاباتها.
- بعد أن يقرأ التلاميذ جزءاً من الدرس دعهم يمثّلوا المعلومات بالرسم أو التمثيل أو وسائل أخرى.
- التلاميذ الذين يعانون صعوبات في التعلّم قد يستفيدون من استخدام المنظم البياني لمفاهيم الفصل في تلخيص الأفكار الرئيسة. المنظم البياني موجود في كتاب التمارين.

ذوو الحاجات البصرية الخاصة

- زوّد هؤلاء التلاميذ بنماذج، كالمعادن والصخور، حيث يمكنهم لمسها.
- قد يستفيد هؤلاء التلاميذ أيضاً من الإصغاء إلى أشرطة فيديو النشاط «البحث».

ذوو الحاجات السمعية الخاصة

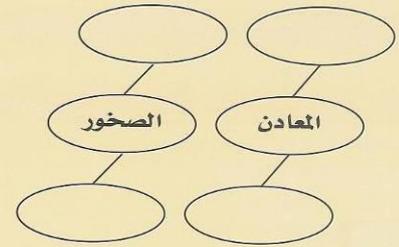
- شجّع هؤلاء التلاميذ على استخدام حواسٍ أخرى عند تنحّصهم للصخور والمعادن.
- قد يستفيد هؤلاء التلاميذ أيضاً من مشاهدة أشرطة فيديو أنشطة «البحث».



استراتيجيات لتعزيز اللغة

ابن المفاهيم

المنظم البياني استخدم هذا المنظم البياني كي تلخص وتعزّز أهم مفاهيم هذه الوحدة. وحيث يمكن، كزّر استخدام منظم بياني في دروس مختلفة.



المنظم البياني مفاهيم الفصل هناك منظم بياني لمفاهيم الفصل مرفق بكل فصل في هذه الوحدة. يستطيع التلاميذ استخدام هذا المنظم كي يلخصوا المفاهيم الرئيسة ويعزّزوا مفردات الفصل. المنظم البياني موجود في كتاب التمارين.

ثمّ التعبير الشفوي

مقابلات يمكن تشكيل التلاميذ في مجموعات صغيرة ليسجلوا أسئلتهم حول موارد الأرض ثم يجروا مقابلات بعضهم مع بعض. شجّع متطوعين ليشاركوا مع زملائهم شفويًا وكتابيًا حول ما يعرفون عن الموارد.

مطابقة زوّد مجموعة صغيرة من التلاميذ بنماذج من المعادن والصخور. زوّدهم أيضاً ببطاقات تعريف تحمل اسم المعدن أو الصخر. فيما هم يقرؤون ما كُتب على البطاقة، اطلب إليهم أن يقوموا على التوالي بمطابقة كل معدن أو صخر مع البطاقة المناسبة.

أنشطة لتعزيز اللغة

دع التلاميذ ينفّذوا أنشطة تعزيز اللغة الواردة في دروس الوحدة.

Example 2

Excerpt from Grade 5 Teacher's Book (Part 2) indicating teaching strategies for pupils with SEN (استراتيجيات للتلاميذ ذوي الاحتياجات الخاصة). The strategies were recommended for: pupils with Learning Difficulties (صعوبات تعلمية), with Visual Impairments (ذوو الحاجات البصرية الخاصة) and with Hearing Impairments (ذوو الحاجات السمعية الخاصة).

الوصول إلى المتعلمين كافة

استراتيجيات للتلاميذ ذوي الحاجات الخاصة

صعوبات تعلمية

- التلاميذ الذين يعملون دون مستوى الصف سوف يستفيدون من التركيز على بعض الأسئلة قبل القراءة، أو من تكرار القراءة. اكتب على اللوح ثلاثة إلى خمسة أسئلة تريد أن يجيب التلاميذ عنها.
- بعد أن يقرأ التلاميذ قسمًا من الكتاب المدرسي، دعهم يملأوا المعلومات بالرسم أو التمثيل أو وسائل أخرى.
- التلاميذ الذين يعانون صعوبات في التعلم قد يستفيدون من استخدام المنظم البياني لمفاهيم الفصل في تلخيص الأفكار الرئيسية. المنظم البياني موجود في كتاب التمارين.

ذوو الحاجات البصرية الخاصة

- زود هؤلاء التلاميذ بنماذج من دوائر كهربائية بسيطة يمكنهم أن يلمسوها.
- قد يستفيد هؤلاء التلاميذ أيضًا من الإصغاء إلى أشرطة فيديو النشاط «ابحث».

ذوو الحاجات السمعية الخاصة

- شجّع هؤلاء التلاميذ على استخدام حواسٍ أخرى عندما يدرسون القوى والحركة.
- قد يستفيد هؤلاء التلاميذ أيضًا من مشاهدة أشرطة فيديو أنشطة «ابحث».

استراتيجيات لتعزيز اللغة

ابن المفاهيم

المنظم البياني استخدم المنظم البياني الثاني كي تلخص وتعزز أهم مفاهيم هذه الوحدة، وحيث أمكن، كرر استخدام المنظم البياني في مختلف الدروس.



المنظم البياني لمفاهيم الفصل هناك منظم بياني لمفاهيم الفصل مرفق بكل فصل في هذه الوحدة. يستطيع التلاميذ استخدام هذا المنظم كي يلخصوا المفاهيم الرئيسية ويمرّزوا مفردات الفصل. المنظم البياني موجود في كتاب التمارين.

نم التعبير الشفوي

صور دع أزواجًا من التلاميذ يفتشوا في المجالات عن صور لأجسام متحركة أو ثابتة، ويقصّوها ويلصقوها على ورقة. بعد ذلك دع التلاميذ يكتبوا الكلمات المفاتيح حول أنواع القوة المؤثرة في كل جسم، وهل تُجمع مع بعضها أم تُطرح. في النهاية دع التلاميذ يتشاركوا في الصور، ويقرؤوا بصوت عالٍ الكلمات المفاتيح التي كتبوها.

استجابة جسدية جماعية أعط توجيهًا لتنفيذ حركة جسدية، موضحةً ذلك بمرض هذه الحركة. على التلاميذ أن يتبعوا التوجيه. ولتنمية التعبير الشفوي دع متطوعين يستخدموا المفردات وهم يتحدثون عن النشاط.

أنشطة لتعزيز اللغة

تتوفر في دروس هذه الوحدة أنشطة لبناء المفاهيم وتنمية التعبير الشفوي. دع التلاميذ ينفذوا هذه الأنشطة.



و1هـ

Appendix 18

Students with Special Educational Needs Requirement Form

The requirements Form that is sent annually by the Special Education Department in the MoE at the end of the school year to the educational districts .It contains the requirements for their students who have special education needs. These forms should be filled with the requirements and sent back to the MoE before the start of the new school year.



مملكة
القطر
التعليمية

قطاع الشؤون التعليمية
إدارة التربية الخاصة
الرقم: 214/3
التاريخ: 2009/...

قسم الاحتياجات الخاصة

كشف بأسماء الطلاب واحتياجاتهم (المكانية / التربوية / الأجهزة) والمدارس للدمج الطالب بها للعام القادم (نموذج 1)

2010 / 2009

العربي
نسخة / نسخة
للاقتناء
لحفظها

الاحتياجات من الأجهزة	الاحتياجات المكانية في المدرسة	الاحتياجات الخاصة لاجته/لا	الإجراءات والبدائل التربوية	وصف الحالة	نوع الإعاقة	الجنس	العمر	الصف المقترح	نوع التعليم	الجنسية	تاريخ الميلاد	اسم الطالب/ الدارس	اسم المدرسة / المركز المقترح	م. الطالب الدارس	المنطقة التعليمية
-	تهيئة البيئة المدرسية بما يتواءم مع وضع التلميذ من حيث الأثاث والسلام ودورات المياه.... الخ	لا	- دمج في الروضة الحكومية - يحتاج الطلاب إلى جلسات علاج النطق	الطالب يعاني من قزمة وقدراته العقلية عادية ويمكن دمج في المدارس العادية	قزمية + سمعية	ذكر	سنوات	روضة ثانية	حكومي	الإمارات	2009	[Redacted]	[Redacted]	1	العربي التعليمية
سماعات	-	لا	- دمج في الصف الأول في المدرسة الحكومية	الطالب يعاني من مشكلة في السمع وتم زراعة قوقعة ويمكن دمج داخل الفصل العادي	زراعة قوقعة	ذكر	سنوات	الأول	حكومي	الإمارات	[Redacted]	[Redacted]	[Redacted]	2	

تابع (نموذج 1)

الاحتياجات من الأجهزة	الاحتياجات المكانية في المدرسة	الاحتياجات لجنة خاصة نعم/لا	الإجراءات والبدائل التربوية	وصف الحالة	نوع الإعاقة	الجنس	العمر	الصف المقترح	نوع التعليم	الجنسية	تاريخ الميلاد	اسم الطالب/ الدارس	اسم المدرسة / المركز المقترح	م. الطالب/الدارس	المنطقة التعليمية
-	تهيئة البيئة المدرسية بما يتواءم مع وضع التلميذ من حيث الأثاث والسلام ودورات المياه... الخ	نعم	تحتاج إلى مرافق لمساعدتها في الحركة والتنقل والدخول لدورة المياه . - تحتاج إلى جلسات علاج طبيعي وخاصة لأعصاب اليدين	تستخدم الطالبة مقعد متحرك . - تمتد على يدها اليسرى في الكتابة .	شلل عني+ شلل رباعي تشنجي(إعاقة جسدية) .	أنثى	█	الثالث	حكومي	الإمارات	█	█	█	5	العين التعليمية
-	- وضع الجرس الضوئي في الصفوف وخارجها . - وضع جهاز إنذار .	نعم	- يحتاج لمدرّب - نطق - مشرف على سلامة المساعدين - مترجم إشاري - إعطاء دورات إشارية لموظفي المؤسسة .	- تستخدم التواصل الكلي (لغة الإشارة - قراءة الشفافة - لغة الجسد - تعابير الجسد)	صمم حاد	أنثى	█	العاشر	حكومي	الإمارات	█	█	█	6	
-		نعم			صمم متوسط	أنثى	█	العاشر	حكومي	الإمارات	█	█	█	7	
-		نعم			صمم عميق	أنثى	█	العاشر	حكومي	الإمارات	█	█	█	8	
-		نعم			صمم عميق	أنثى	█	العاشر	حكومي	عمان	█	█	█	9	
-		نعم			صمم متوسط (تشنجات توتريية)	أنثى	█	العاشر	حكومي	الإمارات	█	█	█	10	

Appendix 19

Formal Letter Concerns Students with SEN Assessment

The letter which was issued by the Special Education Department in the MoE , and sent to the educational districts to consider the IEP as a request to assess students with SEN .The IEP should includes all of the student educational needs. This letter was issued in 18th January 2009.

UNITED ARAB EMIRATES
MINISTRY OF EDUCATION
Chief Executive for Educational Affairs

الإمارات العربية المتحدة
وزارة التربية والتعليم
المدير التنفيذي للشؤون التعليمية

إدارة التربية الخاصة

الرقم: 4/16
التاريخ 18/1/2009

السادة / مديري المناطق التعليمية - مجالس التعليم المحترمين

الموضوع: امتحانات الطلبة من ذوي الاحتياجات الخاصة

تحية طيبة ... وبعد ،،،

بناء على اعتماد الخطة التربوية الفردية للطلبة من ذوي الاحتياجات الخاصة من قبل فريق عمل يقوم بإعداد الخطة التربوية الفردية، واعتمادها كمنهاج خاص ومناسب لحالة الطالب وذلك بدءاً من العام الدراسي 2007-2008. نود الإفادة بأن تقييم الطلبة من ذوي الاحتياجات الخاصة (من يخضعون للخطة التربوية الفردية الموثقة والمعتمدة من قبل فريق العمل والمعتمدة رسمياً من قبل المدرسة)، يجب أن تعتمد مباشرة على محتويات الخطة التربوية الفردية وأهدافها.

وعليه يرجى الإيعاز لمن يلزم لعمل الآتي في الفترات القادمة :

1. تراعى أثناء تقدير درجات أوراق الإجابة، الأهداف التي وردت في الخطة التربوية الفردية للطلبة من ذوي الاحتياجات الخاصة .
2. أن تتلاءم الامتحانات والتقويمات مع أهداف الخطة التربوية الفردية.
3. أن تحمل بطاقة تقييم الطالب عبارة (نظام الخطة التربوية الفردية)، وفق النماذج المرفقة .
4. أن يتم التنسيق بين معلم المادة ومعلم التربية الخاصة بالمدرسة وموجه التربية الخاصة لتحقيق البندين أعلاه (1،2).

وتفضلوا بقبول فائق الاحترام والتقدير

نورة إبراهيم المصري
مدير إدارة التربية الخاصة

16/1/09

نسخة إلى :

- إدارة التربية الخاصة .
- إدارة التقويم والامتحانات
- إدارة التدريب والتطوير المهني
- قسم / شعبة التربية الخاصة التقويم والامتحانات بالمناطق التعليمية .
- توجه المواد بالمناطق التعليمية .

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Appendix 20

Ministerial Decisions and schedules of Training Programs Organized by Special Education Department in MoE for School Staffs

The ministerial decision and the schedule of training program for the teachers and other school staffs that was organized in collaboration between Special Education Department in MoE and Zayed University. This program was conducted from 21st June to 2nd July 2009.

UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

قرار إداري رقم (٢٠٠) لسنة 2009

بشأن عقد مسابقات تدريبية لتدريب معلمين حول دمج ذوي الاحتياجات الخاصة بالتعاون مع جامعة زايد

المدير العام :

- بعد الاطلاع على القانون الاتحادي رقم [1] لسنة 1972 بشأن اختصاصات الوزارات وصلاحيات الوزراء وتعديلاته .
- وعلى القانون الاتحادي رقم [11] لسنة 2008 بشأن الموارد البشرية في الحكومة الاتحادية .
- وعلى قرار مجلس الوزراء رقم [32] لسنة 2007 بشأن الهيكل التنظيمي لوزارة التربية والتعليم .
- وعلى ما عرضه المدير التنفيذي للشئون التعليمية .

قرار

المادة الأولى: تعقد المسابقات التدريبية لتدريب السادة المرشحين من الهيئة التدريسية والتوجيه ومدراء المدارس (وفق الجدول المرفق) . وذلك خلال الفترة من (2009/06/21 إلى 2009/07/02) من الساعة التاسعة صباحاً وحتى الثالثة ظهراً ، وذلك في مبن جامعة زايد /المدينة الجامعية بدبي .

المادة الثانية : تحذف المسابقات إلى :

- 1- تزويد المشاركين بالخبرات الضرورية لتنفيذ تجربة الدمج الشامل في مدارسهم المرشحة للدمج .
- 2- تشكيل فريق تدريبي لنقل الخبرات المقدمة بالمسابقات إلى الميدان التربوي حسب الحاجة .

المادة الثالثة : تكون موضوعات المسابقات ومواعيد تنفيذها حسب البرنامج المرفق مع القرار .

المادة الرابعة : تتولى إدارة الاتصال الحكومي بالوزارة تغطية الورشة إعلامياً .

المادة الخامسة: تتولى إدارة الاتصال الحكومي الإستضافة في الفندق والتنقل بين الجامعة والفندق مشاركي منطقتي الفجيرة ومكتب الشارقة كما هي موضحة في برنامج المسابقات التفصيلي المرفق وأسماء المشاركين في كل مساق .

المادة السادسة: تتولى شعبة الخدمات بالمناطق التعليمية ترتيبات انتقال المستهدفين من المناطق إلى جامعة زايد /مدينة دبي الجامعية ، والعكس من جامعة زايد إلى المناطق التعليمية .

المادة السابعة: يبلغ هذا القرار لجميع جهات الاختصاص لتنفيذه كل فيما يخصه .

راشد سالم خريباتي التميمي
مدير عام وزارة التربية والتعليم

صدر في: ٢٩ / ٦ / 1430هـ الموافق: ٢٠٠٩ / ٦ / 2009

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برنامج جامعة زايد

إن وزارة التربية والتعليم ترغب بتنفيذ مبادرة (الاستمرار في تنفيذ برنامج التطوير المهني للعاملين مع طلبة ذوي الاحتياجات الخاصة) ، وكذلك مبادرة (دمج طلبة ذوي الاحتياجات الخاصة في النظام التعليمي) / تطبيق دمج الطلبة من ذوي الاحتياجات الخاصة في عشر مدارس بهدف تقديم خدمات وبرامج ملائمة للطلاب من ذوي الاحتياجات الخاصة . وانطلاقاً من رؤية الوزارة بأهمية توطيد أواصر الشراكة مع مؤسسات التعليم العالي بما يخدم برامج التطوير المهني للمعلمين أثناء الخدمة ورغبة الوزارة بالتحاق بمجموعة من المعلمين والعاملين بمدارس الدمج بالبرامج ذات العلاقة المطروحة للتدريس خلال الفصل الدراسي الصيفي 2009-2008 و تهدف إلى تزويد المشاركين بالمهارات الأساسية الضرورية لتهيئتهم لدمج الطلبة من ذوي الاحتياجات الخاصة. وفق المسافات التالية :

مرجع CRN	رقم المساق	اسم المساق	الساعات المعتمدة	المدرس
24045	EDC 324	الأفراد ذوي الاحتياجات الخاصة	3	سروج تابا
24044	EDC 321	إدارة الصف الدراسي	3	مارلين دافيس
مساق مدمج 3 ساعات	EDC 315 EDC 497	الملاحظة والتقييم مواضيع خاصة بالتعليم	2 1	جلويس مابيز

تفاصيل الأيام:

الأحد	الاثنين	الثلاثاء	الأربعاء	الخميس	السبت
June 21, 2009	June 22, 2009	June 23, 2009	June 24, 2009	June 25, 2009	June 27, 2009
لا يوجد: 315: اليوم 1: 324: لا يوجد: 321:	اليوم 1: 315: اليوم 2: 324: لا يوجد: 321:	اليوم 2: 315: لا يوجد: 324: لا يوجد: 321:	اليوم 3: 315: لا يوجد: 324: اليوم 1: 321:	اليوم 4: 315: لا يوجد: 324: اليوم 2: 321:	لا يوجد: 315: Homewrk 324: Homewrk 321:
الأحد	الاثنين	الثلاثاء	الأربعاء	الخميس	السبت
June 28, 2009	June 29, 2009	June 30, 2009	July 1, 2009	July 2, 2009	July 4, 2009
اليوم 5: 315: اليوم 3: 324: اليوم 3: 321:	اليوم 6: 315: اليوم 4: 324: اليوم 4: 321:	اليوم 7: 315: اليوم 5: 324: اليوم 5: 321:	اليوم 8: 315: اليوم 6: 324: اليوم 6: 321:	اليوم 9: 315: اليوم 7: 324: اليوم 7: 321:	لا يوجد: 315: Homewrk 324: Homewrk 321:
			الأسبوع:	الأسبوع:	الأسبوع:
			September 6, 2009 موعد تسليم المشاريع	September 13, 2009 إعادة المشاريع إلى الطلاب مع التغذية الراجعة	September 27, 2009 كل المسافات عروض و حفل

The ministerial decision and the schedule of a training program for special education supervisors and teachers organized in collaboration between Special Education Department and UNESCO Planning Office in Sharjah University. This program was conducted from 22nd to 2nd June 2009.



الإمارات العربية المتحدة
وزارة التربية والتعليم

UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

قرار إداري رقم (٤٤٤) لسنة 2009م

بشأن عقد دورة تدريبية حول جهاز برايل المحمول وبرنامج قارئ الشاشة

المدير العام :

- بعد الاطلاع على القانون الاتحادي رقم [١١] لسنة ١٩٧٢ بشأن اختصاصات الوزارات وصلاحيات الوزراء وتعديلاته .
- وعلى القانون الاتحادي رقم [١١] لسنة ٢٠٠٨ بشأن الموارد البشرية في الحكومة الاتحادية
- وعلى قرار مجلس الوزراء رقم [٣٣] لسنة ٢٠٠٧ بشأن الهيكل التنظيمي لوزارة التربية والتعليم .
- وعلى ما عرضه المدير التنفيذي للشؤون التعليمية

قرر

المادة الأولى : تعقد دورة تدريبية حول جهاز برايل المحمول وبرنامج قارئ الشاشة لجموعة من موجهي ومعلمي التربية الخاصة خلال الفترة من (٢٢/٦/٢٠٠٩ - ٢٤/٦/٢٠٠٩) من الساعة التاسعة وحتى الثانية ، وذلك في مركز التخطيط التربوي (اليونسكو) بالمدينة الجامعية بالشارقة . مرفق (كشف أسماء المستهدفين والبرنامج التنفيذي).

المادة الثانية : يقدم الدورة مدربين من المناطق للتكنولوجيا وفق متطلبات الاتفاقية الخاصة بتزويد الوزارة بمجموعة من الأجهزة والبرامج الخاصة بذوي الإعاقة البصرية.

المادة الثالثة : يفرغ المشاركون المرفقة أسماؤهم بالقرار من أعمالهم فترة انعقاد الورشة .

المادة الرابعة : تتولى إدارة الاتصال الحكومي بالوزارة التغطية الإعلامية وترتيبات الإقامة الشاملة للمستهدفين والاستضافة والضياقتن (وجبة خفيفة) طوال فترة انعقاد الورشة ، وتتولى شعبة الخدمات بالمناطق التعليمية ترتيبات انتقال المستهدفين من المناطق إلى مركز التخطيط التربوي (اليونسكو)/المدينة الجامعية بالشارقة والعكس من المركز إلى المناطق التعليمية وانتقال المستهدفين من مركز التخطيط التربوي إلى الفندق والعكس .

المادة الخامسة : يبلغ هذا القرار لجميع جهات الاختصاص لتنفيذه كل فيما يخصه .



الموافق ٢٠٠٩ / ٦ / ١٨ صدر في : ٢٥ / ٦ / ٢٠٠٩

مدير عام وزارة التربية والتعليم

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البرنامج التنفيذي للدورة التدريبية

حول استخدام التقنية المساعدة مع ذوي الإعاقة البصرية (الجزء الثاني)

اليوم	الموضوع	الوقت	التدريب	المكان
2009/6/22	جهاز برايل محمول	9 - 2	المناطق للتكنولوجيا	مبنى اليونسكو المدينة الجامعية الشارقة
2009/6/23	برنامج قارئ الشاشة مع القلم		المناطق للتكنولوجيا	
2009/6/24	برنامج قارئ الشاشة مع القلم		المناطق للتكنولوجيا	

Appendix 21

Dubai School Inspection Bureau (DSIB) Newsletter (2008)

Information about the task of Schools Inspection Teams as reported in Dubai School Inspection Bureau (DSIB) Newsletter (2008), page 2. Cited from KHDA website:

<http://www.khda.gov.ae/En/DSIB/InspectionBureau.aspx>. [Accessed on 15 August 2009].



What Happens During an Inspection

The preliminary visit would have been completed along with the parents' questionnaires and then returned to the bureau. Analysed by the bureau, the information is used by the inspectors as an evidence base.

Remember that inspections are not meant to cause distress to any school. The inspection team are committed to the highest

standard of professional conduct, including courtesy to all involved and respect for the culture and religions of students, teachers and parents.

The team will spend time gathering evidence, observing lessons and sampling students' work. Inspectors will have discussions with students and staff involved in the work of the school. The Principal and Lead Inspector will meet daily

as part of the professional relationship between the school and the inspection team. Inspectors will review the documentation and paperwork of the school. A summary document is produced at the end of each inspection called the Record of Inspection Judgements. The contents form the basis for feedback to the school and the written report. School staff will have the opportunity to clarify the findings and ask for further explanations to illustrate judgements made. Throughout the entire process of inspection, feedback will be two-way.

Appendix 22

A formal Request Letter from the School Agency to the Special Education Department in MoE

A formal letter from the CEO of the School Agency (KHDA) to the Special Education Department in MoE requesting engaging Dubai schools in the Training Programs.

حكومة دبي
GOVERNMENT OF DUBAI

هيئة المعرفة والتنمية البشرية
KNOWLEDGE & HUMAN DEVELOPMENT AUTHORITY

٥٦٣
٢٠٠٩١٦٧٩

المحترمة

الأستاذة / نورة المري
مدير إدارة التربية الخاصة

تحية طيبة وبعد

الموضوع : مشروع مدارس الدمج

تمشيا مع سياسة وزارة التربية والتعليم وتطبيقا للقانون الاتحادي رقم (29 لسنة 2006) بشأن حقوق ذوي الاحتياجات الخاصة في التعليم ، كان لزاما علينا بهيئة المعرفة والتنمية البشرية مؤسسة التعليم المدرسي أن ندمج العديد من فئات الإعاقة بمدارسنا (متلازمة داون / كف بصر / إعاقة حركية / ضعف سمع / توحد / صعوبات تعلم .. الخ)

ان الهدف الرئيسي للقانون الاتحادي هو إعطاء فرصة متكافئة للتعليم ضمن المؤسسات التعليمية للطلبة ذوي الاحتياجات الخاصة سواء كانوا من دبي أو أي إمارة أخرى ، لذا نأمل أن تشمل الوزارة مؤسسة التعليم المدرسي بدبي ضمن العشرة مدارس المطبقة لمشروع الدمج في العام القادم .

حيث ان المادة رقم (15) لنفس القانون تنص على تأهيل وتدريب الكوادر البشرية والتعليمية العاملة في مجال ذوي الاحتياجات الخاصة فإننا نأمل في تدريب إدارات ومعلمات مدارس الدمج من خلال الدورات التي تعقدتها الوزارة (قسم التربية الخاصة) كما يحدث مع مدارس الدمج في باقي الإمارات ليتسنى لنا ان نقدم لأبنائنا الطلاب ما يحتاجونه من خدمات وتأهيل .

(فجميع طلاب مدارسنا ... أبنائنا)

ولكم منا كل الشكر والتقدير

فاطمة غانم المري

الرئيس التنفيذي لمؤسسة التعليم المدرسي

ص.ب. ٥٠٠٠٠٨، دبي، الإمارات العربية المتحدة، هاتف: ٩٧١ ٤ ٣٦٤ ٠٠٠١ - فاكس: ٩٧١ ٤ ٣٦٤ ٠٠٠٠ - www.khda.gov.ae