

OCCUPATIONAL PERFORMANCE OF THE PRIMARY
SCHOOL CHILDREN WITH SPECIAL NEEDS



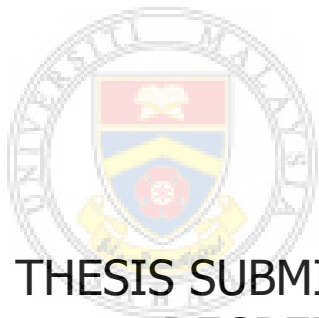
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FACULTY OF MEDICINE AND HEALTH SCIENCES
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2015

OCCUPATIONAL PERFORMANCE OF THE PRIMARY
SCHOOL CHILDREN WITH SPECIAL NEEDS

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THESIS SUBMITTED IN FULFILLMENT FOR THE
DEGREE OF MASTER OF SCIENCE
(MEDICAL SCIENCE)

FACULTY OF MEDICINE AND HEALTH SCIENCES
UNIVERSITI MALAYSIA SABAH
2015

DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, excerpts, equations, summaries and references, which have been duly acknowledged.

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Voo Siew Ching
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ABSTRACT

Children's occupations are self-care, play, social participation and education. Their performance can be impaired by physical, developmental, sensory, attention and or learning challenges. In developed countries school-based therapy services are being provided for the school children with special needs. The evidence for these services in Malaysia is timely to be explored. This study aimed to identify the occupational performance levels in the study population. This exploratory cross sectional study included 121 primary school students from integrated special education program. Motor-Free Visual Perceptual Test 3rd.ed (MVPT), Beery-Buktenica Developmental Test of Visual Motor Integration 5th.ed (Beery-VMI), Test of Gross Motor Development – 2 (TGMD-2), Test of Hand Writing Skills-Revised (THS-R) and School Function Assessment (SFA) were carried out to assess occupational performance. Children with intellectual disability, autism, attention deficit hyperactive disorder, Down syndrome, speech impairment, visual impairment, hearing impairment and specific learning disorder were included. Results showed that 69.5% of the students scored low average to very low in MVPT-3; 69.4% scored below average to very low in Beery-VMI; 73% were below age level raw score in TGMD-2; 72.8% were below average in THS-R and 81% were below criterion cut off in participation in school function. Significant relationship was found between gross motor skill, VMI and visual perception to school function and VMI and visual perception to hand writing skill. School-based therapy and other rehabilitation services in the school system are recommended. Early intervention program to improve motor skill, visual perception and visual motor integration is important for the preschool children with special needs.



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ABSTRAK

PRESTASI PELAKSANAAN KERJA KANAK-KANAK SEKOLAH RENDAH DENGAN KEPERLUAN KHAS

Pekerjaan kanak-kanak adalah penjagaan diri, bermain, penyertaan sosial dan pendidikan. Prestasi mereka boleh terjejas oleh fizikal, perkembangan, deria, perhatian dan atau cabaran pembelajaran. Di negara-negara maju, perkhidmatan terapi berasaskan sekolah telah sediakan untuk murid-murid keperluan khas. Bukti untuk perkhidmatan inidi Malaysia adalah tepat pada masanya untuk diterokai. Kajian ini bertujuan untuk mengenal pasti tahap prestasi kerja di kalangan populasi kajian. Kajian keratan rentas penerokaan melibatkan 121 pelajar sekolah rendah daripada program pendidikan khas integrasi. "Motor-Free Visual Perceptual Test 3rd.ed (MVPT)", "Beery-Buktenica Developmental Test of Visual Motor Integration 5th.ed (Beery-VMI)", "Test of Gross Motor Development – 2 (TGMD-2)", "Test of Hand Writing Skills-Revised (THS-R)" and "School Function Assessment (SFA)" telah dijalankan untuk menilai perestasi kerja mereka. Populasi kajian termasuk kanak-kanak kurang upaya intelek, autisme, defisit perhatian gangguan hiperaktif, Sindrom down, masalah pertuturan, masalah penglihatan, masalah pendengaran dan masalah pembelajaran spesifik. Keputusan menunjukkan 69.5% daripada pelajar skor di antara rendah ke sangat rendah dalam penilaian MVPT-3; 69.4% skor di bawah paras purata ke sangat rendah pada penilaian Beery-VMI; 73% skor di bawah tahap perkembangan umur dalam penilaian TGMD-2; 72.8% skor di bawah paras purata dalam penilaian THS-R dan 81% di bawah skor potongan kriteria untuk penyertaan dalam fungsi sekolah. Terdapat hubungan signifikan antara kemahiran motor kasar, VMI, persepsi visual dengan fungsi sekolah dan VMI, persepsi visual dengan kemahiran menulis. Terapi berasaskan sekolah dan perkhidmatan pemulihan yang lain dalam sistem sekolah adalah disyorkan. Program intervensi awal untuk meningkatkan kemahiran motor, persepsi visual dan integrasi visual motor adalah penting untuk kanak-kanak prasekolah dengan keperluan khas.

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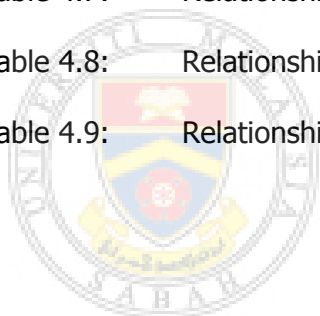
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LIST OF ABBREVIATION

ADHD	_	Attention-Deficit-Hyperactivity Disorder
AOTA	_	American Occupational Therapy Association
Beery VMI	_	The Beery-Buktenica Developmental test of visual-motor integration, 5 th ed
CP	_	Cerebral Palsy
IDEA	_	Individuals with Disabilities Education Act
IQ	_	Intelligence Quotient
ICF	_	International Classification of Functioning, Disability and Health
ISEP	_	Integrated Special Education Program
LD	_	Learning Disorders
MOH	_	Ministry of Health
MVPT-3	_	Motor Free Visual Perceptual Test – 3 rd ed
OT	_	Occupational Therapy
SFA	_	School Function Assessment
TGMD-2	_	Test of Gross Motor Development-2
THS-R	_	Test of Hand Writing Skills-Revised
UK	_	United Kingdom
USA	_	United States of America
VMI	_	Visual-motor Integration
WHO	_	World Health Organization

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CHAPTER 1

INTRODUCTION

1.1 Introduction and Background

Occupational performance means the action of doing and achieving an activity or occupation. It is the outcome from the dynamic transaction among the individual, the context and the activity (American Occupational Therapy Association, 2008).

Children's occupational performances are activities of daily life, play/leisure, social participation, education and work (Swinth *et al.*, 2003). Their performance depend on visual perceptual, visual integration, gross motor and fine motor skills (Whalen, 2002) and could be impaired by physical, developmental, sensory, attention and or learning challenges (Whalen, 2003). It is also influenced by factors such as classroom culture, implicit and explicit rules established by the teacher or education system, specific requirements of the task which assigned by teacher, the location of tools and materials, types of the tools and materials they use (Munkholm, 2010).

The children with special needs in this project are referred to children who need special education from integrated special education program in Malaysia; children with intellectual disability, autism, attention deficit hyperactive disorder, Down syndrome, specific speech and language impairment, speech delayed, visual impairment, hearing impairment and specific learning disorder.

School based therapy services have been provided in the schools for the students with special needs in United States of America, United Kingdom, Canada (Whalen, 2003) as well as in India (Childsupport.in, 2007).

Occupational Therapy (OT) emphasize on assisting the children to participate in the occupational areas particularly in activities of daily life, education, work, play/leisure and social participation (Swinth *et al.*, 2003). OT intervention aims to support their school performance in the areas of reading, writing, mathematics, manipulation of tools, performance in physical education, independence with self-care tasks and social integration (Whalen, 2002).

Children with special needs in Malaysia received OT and others rehabilitation services from the health care system and some of the welfare facilities. However, when they reach their school age, they have to spend most of their time in the school and their opportunity to obtain rehabilitation services become limited. The children may not be able to go for regular therapy or they discontinue going to health centre for therapy appointment. A study by Teoh *et al.*, (2010), 62.6% of the teachers responded that they need co-operation of health professions including psychologist, paediatricians, speech therapist and occupational therapist regularly to deal with learning disorders and 27.1% responded that their needs is occasionally.

In Malaysia, special education service is provided to the school aged children with visual impairment, hearing impairment, children with learning disability (intellectual disability, autism, attention deficit hyperactive disorder, Down syndrome, speech impairment, visual impairment, hearing impairment and specific learning disorder) and the children who need remedial education (Norsham, 2005).

Special education was introduced in Malaysia in 1954. It has been developing by provision of number of special education programs, training the special education teachers, providing good physical facilities by federal government and collaborating with social resources such as nongovernment organization, corporate sectors and international organizations (Mohamad Nor, n.d). However, provision of school based-therapy (e.g. occupational therapy and others) needs the special attention of Malaysia Ministry of Education too.

There is no school based OT service in Malaysia. Lack of emphasis to develop school-based OT in Malaysia may due to limited information of OT roles in school system especially in special education programs and absence of published article in Malaysia stating the needs of school based therapy.

The evidence of this service requirement in Malaysia is timely to be explored. The exploration of occupational performance for the children with special education needs in the school context reveals the needs of the school based therapy services.

The aim of this research was to investigate the level of occupational performance among the primary school children with special needs. The objectives were as below:

- a. To determine the skills of individual factors (visual perception, visual-motor integration and gross motor skills) for occupational performance level.
- b. To investigate the activity performance in hand writing skills and school function.
- c. To explore the relationships between individual factors and activity performance.

The hypotheses of the study were:

- a. Children with special needs have problems in the area of visual perception, visual-motor integration and gross motor skills.
- b. They have activity performance limitation in school function and hand writing.
- c. There is relationship of visual perception, visual motor integration and gross motor skills of these children in their school function.
- d. Their visual perception and visual motor integration have association to their hand writing skills.

By exploring the student's specific performance domain problem, the need of occupational therapy programme would be recommended and role of occupational therapy in the schools with classes for students with special needs as an essential related service would be proved.



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CHAPTER 2

LITERATURE REVIEW

2.1 Occupational Performance

2.1.1 Occupation

The term of 'occupation' is the core concept of profession occupation therapy [OT] (Munkholm, 2010). Several definitions of occupation were made to the understanding of this core concept. The American Occupational Therapy Association (AOTA, 2002) had defined 'occupation' as everyday life activity. Luebben *et al.* (2010) stated it is a group of familiar activities that individuals uses to fill their time and give life meaning, structured around roles which relate to activities of daily life, work and productive activities or play/leisure.

2.1.2 Occupational Performance

As stated in AOTA (2008), 'occupational performance' is defined as the action of doing and achieving an activity or occupation; it is the outcome from the dynamic transaction among the individual, the context and the activity. 'Occupational performance' has been described in the terms of domains according to the International Classification of Functioning, Disability and Health (ICF) classification. The following explanation of the domains according to AOTA (2008) will focus on the issues related to the research topic.

The domains are areas of occupation, client factors, performance skills, performance patterns, activity demands, context and environment. "All aspects of the domains have equal value, and together they interact to influence the client's engagement in occupation, participation, and health" (AOTA, 2008: 626).

Areas of occupation are the different kinds of life activities engaged by an individual in environment or context. Activities include activities of daily life, instrumental activities of daily life, rest and sleep, education, work, play, leisure, and social participation.

Activities of daily life are the essential activities to the basic survival and well-being of a person in a social world (e.g. eating, feeding, bowel and bladder management, personal hygiene and grooming, toilet hygiene, bathing, functional mobility, personal device care). Instrumental activities of daily life are the functional activities that are interacted with context and environment (e.g. care of others, communication management, community mobility, financial management, meal preparation and cleaning, religious observance, safety and emergency maintenance, shopping).

Education involves activities required for learning and participating in the environment.

Play denotes any kind of spontaneous or planned activities that bring enjoyment, entertainment and fun.

Leisure is the participation in non-essential activity that a person is interested to do during optional time, of which there is no commitment to compulsory activities (work, self-care or sleep).

Social participation is the structure pattern of behaviour, typically and expected from an individual in their status within the social system provided.

Client factors are particular abilities, features, or beliefs that exist in an individual and may influence their performance in areas of occupation. The factors involve values, beliefs, and spirituality, body functions, and body structures. Body functions refer to the "physiological function of body systems (including psychological functions)" (WHO, 2001: 10).

Body functions are categorized in terms of mental functions (affection, cognition, perceptual), sensory functions and pain, neuro-musculoskeletal and movement-related functions, as well as others including cardiovascular, respiratory, and endocrine functions.

Mental functions are categorized as specific mental functions and global mental functions. Specific mental functions are higher-level of cognition, attention, memory, perception, thought, mental functions of sequencing complex movement, emotional, experience of self and measurement. Global mental functions are consciousness, orientation, temperament and personality, energy and drive, sleep (physiological process).

Sensory functions include vision-related functions (including visual acuity, visual stability, and visual field functions), hearing functions, vestibular functions, proprioceptive functions, tactile functions, as well as perception of pain, temperature and pressure.

Neuro-musculoskeletal and movement-related functions refer to the functions of joints and bones (joint mobility, joint stability, muscle power, muscle tone, muscle endurance, motor reflexes, involuntary movement reactions, control of voluntary movement, gait patterns).

Body structures are the “anatomical parts of the body such as organs, limbs, and their components” (WHO, 2001: 10).

Performance skills in the occupational therapy practice framework are defined as the abilities of the clients demonstrated in the actions performed.

The implementation of performance skills occurs when the performer, the demands of the activity and the context come together in carrying out activities (AOTA, 2002).

The categories of a person's performance skills are interrelated and included motor and praxis skills, sensory–perceptual skills, emotional regulation skills, cognitive skills, communication and social skills.

Motor skills are the actions or behaviours a person uses to move and physically interact with tasks, objects, contexts, and environments. Praxis skills are the skilled purposeful movements (e.g. coordinating body movements to complete a job, manipulating keys to lock or open the door, bending and reaching a toy or tool in a storage bin).

Sensory–perceptual skills are the actions or behaviours a person uses to locate, identify, and respond to sensations; and to select, interpret, associate, organize, and remember sensory events based on discriminating experiences through a variety of sensations that include visual, auditory, proprioceptive, tactile, olfactory, gustatory, and vestibular (e.g. positioning the body in the exact location for a safe jump; visually determining the correct size of a storage container for leftover soup; timing the appropriate moment to cross the street safely; determining one's own position and speed relative to the speed of traffic ; locating keys by touching different objects in a pocket or purse).

Emotional regulation skills are the action or behaviours that an individual uses to identify, manage, and express feelings while engaging in activities or interacting with others (e.g. persisting in a task despite frustrations; controlling anger toward others and reducing aggressive acts and responding to the feelings of others by acknowledgment or showing support).

Cognition skills are the actions or behaviours that an individual uses to plan and manage the performance of activity (e.g. judging the importance or appropriate clothing for the circumstance, creating different funny, enjoyable activities with friends).

Communication and social skills are the actions or behaviours a person uses to communicate and interact with others in an interactive environment (e.g. looking

where someone else is pointing or gazing, maintaining acceptable physical space during conversation, initiating and answering questions with relevant information).

Performance patterns are referred to habits, routines, roles, and rituals used in the process of engaging in occupations or activities.

Context and environment refers to a range of correlated situations within or surrounding an individual that influence their performance. Aspects include those which are cultural (e.g. shaking hands when being introduced, celebrating Independence Day); personal (e.g. twenty-five-year-old unemployed man with a high school diploma); temporal (e.g. a person retired from work for ten years); virtual (e.g. text message to a friend); physical (e.g. individual's house, schools) and social (e.g. friends, colleagues).

Activity demands refer to the specific elements of an activity that influence the type and amount of effort needed to success the execution of activity. These include the physical space requirements of the activity; the social demands that are related to the environment and context culture; the sequence and time used to carry out the activity; the required movements or performance skills needed to carry out the activity; and the required body structures and functions used to support the performance of the activity.

The process of occupational therapy practice framework is evaluated, intervened and outcome monitoring. The evaluation of occupational performance involves selecting and using specific assessment to measure specific performance skills, performance patterns, activities demands and client factors that may influence each other. This is followed by the interpretation of the assessment data, where their strength and challenges would be identified. Goals and delineation of potential intervention would be implemented through collaboration with client and related personnel. Approaches of intervention are based on best practices and available evidence.