

UNIVERSITI TEKNOLOGI MARA

**VISION SCREENING BATTERY FOR CHILDREN
WITH LEARNING DISABILITIES IN SPECIAL
EDUCATION CLASSES IN THE GOVERNMENT
PRIMARY SCHOOLS**

NURUL FARHANA ABU BAKAR

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of University Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any other degree of qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating conduct of my study and research.


Name of Student : Nurul Farhana Abu Bakar

Student ID No. : 2009250834

Programme : Optometry

Faculty : Health Sciences

Thesis Title : Vision Screening Battery for Children with Learning Disabilities in Special Education Classes in the Government Primary Schools.

Signature of Student : 

Date : July 2013

ABSTRACT

A validated vision screening battery is essential to efficiently identify those with vision problems for prevention and early intervention. The use of single-test design of Snellen notation distance acuity testing in our national vision screening program might not be appropriate for children with learning disabilities in primary schools due to communication difficulties and intellectual discrepancies. The main purpose of this study was to determine a suitable vision screening battery for children with learning disabilities in special education classes in government primary schools in Malaysia. To achieve that, four aspects were investigated which include gathering information on common vision disorders among children with learning disabilities in government primary schools, identifying appropriate personnel as potential vision screener, evaluation of suitable vision screening tests as well as testing the sensitivity and specificity of the proposed vision screening approach. Refractive error, strabismus, convergence insufficiency and accommodative response anomaly were found as common vision disorders in children with learning disabilities in government primary schools. Review on the issue on personnel suggested that nurses and assistant medical officers could be the choice as vision screener. The Cambridge Crowding Cards, the Lang II Stereotest and the modified version of COVD-QOL questionnaire were among the suitable choices of vision tests for children with learning disabilities. The use of the two-level vision screening approach is recommended for children with learning disabilities in schools due to its high testability, high validity to detect important vision disorders, simplicity and cost effectiveness.

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CHAPTER ONE

VISION SCREENING

The implementation of an effective vision screening procedure has the potential of improving the quality of health. Screening is a type of preventive health care and was defined by the US Commission on Chronic Illness in 1951 as “The presumptive identification of unrecognised disease or defect by the application of tests, examinations or other procedures which can be applied rapidly. The screening tests should be able to sort out apparently well person who probably have the disease from those who probably do not” (Allaby, 2002). There are three types of screening, selective screening (conducted to high-risk group for disease); mass screening (conducted to large numbers of people without reference to risk of disease); and opportunistic screening (occurs in general practice) (Farmer & Lawrenson, 2004). The World Health Organization (WHO) in 1968 suggested 10 criteria to be considered prior to designing a screening program and the criteria are used until now as a guideline by various health disciplines (Wilson & Junger, 1968). In 1998, the criteria for appraising the viability, effectiveness and appropriateness of a screening programme recommended by the UK National Screening Committee provide a more organized and comprehensive guideline. The criteria are divided into four important components that comprising the condition, test, treatment and program (Allaby, 2002).

Behind the definition of screening lies an approach for planning, delivering and evaluating instruction that requires the clinicians or healthcare practitioners to focus their respective attention on applying appropriate test or assessment to discriminate those with diseases from those without. A screening test is different from a diagnostic test as it does not quantify the degree of the problem or offer information on the diagnosis. Conversely, a diagnostic test should be able to indicate the level or severity of the condition as well as to support the making of a clinical diagnosis to help the clinicians in choosing an appropriate management plan for the condition. For this reason, it is important to determine an appropriate screening test which meets the criteria suggested by the UK National Screening Committee (1998): (a) the test should be simple, safe, precise and validated; (b) the distribution of the test values in the target population is well-known and the cut-off level criteria is well defined; (c) the