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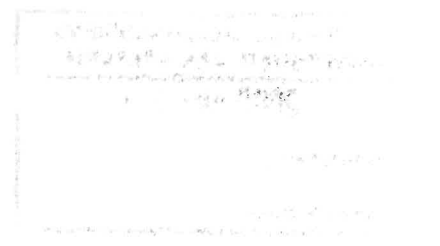
**A HOLISTIC APPROACH TO CENTRAL AUDITORY PROCESSING, LANGUAGE  
ABILITIES AND SENSORY INTEGRATION IN CHILDREN WITH LEARNING  
DISABILITIES**

**by**

**Retha Jeanette Krüger**

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Communication Pathology, Faculty of Humanities, University of Pretoria,  
Pretoria.**

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To the memory of Albert

## ABSTRACT

Title : A holistic approach to central auditory processing, language abilities and sensory integration in children with learning disabilities

by

Name : Retha Jeanette Krüger

Leader : Prof. René Hugo

Co-leader : Mrs. Nicci Campbell

Department : Communication Pathology, University of Pretoria

Degree : M. Communication Pathology

The overlapping nature of central auditory processing disorders, language disorders, learning disabilities and sensory integration dysfunction occurring in the relevant literature, as well as in the clinical setting, suggests the need for an integrated holistic approach to the assessment of and intervention in children diagnosed as having problems in these fields.

Taking into account the South African situation where resources are limited, the aim of this study is to determine whether low technology assessment tools currently used can be utilised to establish the *nature* of the relationship between central auditory processing disorder, language disorder, learning disabilities, and sensory integration dysfunction, in order to facilitate the appropriate *diagnosis and intervention programmes* on the basis of a holistic approach.

The statistical patterns of existing assessment results, used by professionals at a school for remedial teaching, was used to determine correlation. The information obtained indicated that the results obtained from the conventional statistics could be used, (a) to make assumptions regarding the incidence of problems and the progress of the subjects in the school programme and, (b) to show that each individual subject presented with a number of problems which were not limited to one sensory system. The conclusion from these results is that language problems together with learning disabilities can be described as the common factor between the children in the school, but that these problems are not isolated from problems concerning all the modalities.

Phylogenetic analysis was used to determine the problem sub-groups on the assumption that this grouping of problem areas could assist in the establishment of the nature of the relationship between central auditory processing disorder, learning disabilities, language disorder and sensory integration dysfunction. The single inheritance hierarchies provided information, which led to the assumption that the groups of problem areas suggest the existence of a disability group containing problems of auditory, visual, somato-sensory, motor and supra-modal factors. The multiple inheritance groupings enhanced the basic suggestion from the single inheritance groupings and provided additional information, namely, that these groupings may be explained in terms of the functioning of the central nervous system.

The results of both analysis methods are endorsed by the information found in the literature regarding the nature of the relationship between central auditory processing disorders, language disorders, learning disabilities and sensory integration dysfunction.

These results were used to develop a model for diagnosis and intervention of children who have developmental learning disorders. Suggestions made in this study point to a change to be made in the manner of approach to children with developmental learning disorders, this is, from an isolated discipline-specific approach to a holistic approach in evaluation and intervention, in order to incorporate knowledge from the different professional fields to form one umbrella trans-disciplinary approach.

The most important suggestion of the study is thus a change of approach from an isolated approach to a holistic approach, involving a tightly coupled trans-disciplinary professional team, and/or a “new” holistic therapist who incorporates a range of traditional professional skills into a single person.

## OPSOMMING

Die oorvleuelende aard van sentrale ouditiewe prosesseringsprobleme, taalprobleme, leerprobleme en sensoriese integrasieprobleme wat voorkom in die literatuur, sowel as in die kliniese opset, dui op die behoefte aan 'n geïntegreerde holistiese benadering tot die evaluasie en intervensie van kinders wat gediagnoseer is met probleme in hierdie terreine.

Met inagneming van die Suid-Afrikaanse situasie, waar hulpbronne beperk is, is die doel van hierdie studie om te bepaal of die laevlaktegnologie-gebaseerde evaluasiegereedskap wat tans in gebruik is aangewend kan word om die aard van die verwantskap tussen sentrale ouditiewe prosesserings-, taal-, leer- en sensoriese integrasieprobleme te bepaal, sodat toepaslike *diagnose- en intervensieprogramme* vanuit 'n holistiese oogpunt uitgevoer kan word.

Die statistiese patrone van bestaande evaluasieresultate, soos gebruik deur professionele kundiges by 'n remediërende skool, is gebruik om bepaalde korrelasies te bepaal. Uit die konvensionele statistiese resultate kan, (a) aannames gemaak word ten opsigte van die voorkoms van probleme en die vordering van die proefpersone in die skool se program, en (b) aangetoon word dat elke individuele proefpersoon probleme toon wat nie beperk is tot 'n enkele sensoriese sisteem nie. Die gevolgtrekking wat volg uit hierdie resultate is dat taalprobleme saam met leerprobleme beskryf kan word as die gemeenskaplike faktor tussen die kinders in die betrokke skool, maar dat hierdie probleme nie geïsoleerd is van probleme ten opsigte van al die modaliteite nie.

Vervolgens is filogenetiese analise gebruik om die probleem-subgroepe te bepaal met die aanname dat hierdie groepering van probleemareas van hulp kan wees in die bepaling van die aard van die verband tussen sentrale ouditiewe prosessering-, taal-, leer- en sensoriese integrasieprobleme. Die enkelvoudige oorerwingshierargieë verskaf inligting wat lei tot die aanname dat die groeperings van probleemareas die bestaan onderskryf van 'n disfunksiegroep wat bestaan uit ouditiewe, visuele, somatosensoriese, motoriese en supramodale faktore. Die meervoudige oorerwingsgroeperings ondersteun die bevindings van die enkelvoudige oorerwingsgroeperings, en verskaf ook addisionele inligting, naamlik, dat hierdie groeperings verklaar kan word vanuit die funksionering van die sentrale senuweestelsel.

Die resultate van beide analisemetodes word onderskryf deur inligting in die literatuur ten opsigte van die verhouding tussen sentrale ouditiewe prosessering-, taal-, leer- en sensoriese integrasieprobleme.

Die resultate is gebruik om 'n model vir diagnose en intervensie te ontwikkel vir kinders met ontwikkelingsleerprobleme. Die aanbevelings wat gemaak word, impliseer 'n verandering in die benaderingswyse tot kinders met 'n ontwikkelingsleerprobleem, vanaf 'n geïsoleerde dissipline-spesifieke benaderingswyse tot 'n holistiese benaderingswyse ten opsigte van evaluasie en intervensie, sodat kennis vanuit verskillende professionele gebiede verenig kan word tot een oorkoepelende trans-dissiplinêre benaderingswyse.

Die belangrikste aanbeveling van die studie is dus 'n verandering vanaf 'n geïsoleerde benaderingswyse na 'n holistiese benaderingswyse wat uit 'n nou-gekoppelde trans-dissiplinêre professionele span bestaan en/of 'n "nuwe" holistiese terapeut wat 'n reeks van tradisionele vermoëns saamvat in 'n enkele persoon.



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