A CURRICULUM FOR TRAINING OF OCCUPATIONAL THERAPISTS IN EARLY CHILDHOOD INTERVENTION

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In fulfilment of the requirements for the
MASTER OF OCCUPATIONAL DEGREE (M OCC THER)
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Pretoria

January 2002

Acknowledgements

The author would like to thank the following persons:

- **Miss K Uys for supervision of the thesis**
- **Prof I Uys for guidance when the study was changed midstream**
- **Mrs M Lane for editing the language of the thesis**
- **The occupational therapists that participated in the study**
- **Miss P Compaan for technical assistance each time when it was most needed**
- **Mrs H du Plessis for support, editing and translation of the summary**
- **Miss E Aronstam for assistance with the editing of the text**
- **Dr M Aronstam for valuable support throughout the study**

Summary

KEYWORDS:

Early Childhood Intervention, curriculum development, occupational therapy process, postgraduate education, teamwork, family-centred intervention, South African ecological context.

The high incidence of children with developmental delays places a great demand on society to provide intervention services to those in need. This high incidence of children with developmental delays is caused, to a large extent, by the advanced medical procedures which results in a positive survival rate of at-risk infants. Health services in particular are being challenged to develop co-ordinated and effective strategies to prevent and minimise disabilities. It would appear that professionals experience difficulty in collaborating with one another and with families, and that multiskilling is not yet common practice in order to economise on services.

Another matter of concern is the undesirable ecological context in which a large number of children are being raised. Poverty, a high crime rate, debilitating conditions such as AIDS, and child abuse are amongst the many factors that place further strain on families and their ability to provide for their children.

A review of the literature revealed that the answer to effective early childhood intervention is considered to be the development of transdisciplinary teamwork, which includes the family as an integral part of the team. Of further importance is that the ecological context of the community for which the service is intended be kept in mind, for any measure of success in the intervention strategy. The concepts of teamwork, family-centred intervention and ecological context were explored in the study.

One way for professionals to prepare for the momentous task of providing effective early childhood intervention is through further education. At the University of Pretoria a Master's Degree in Early Childhood Intervention has been developed to specifically address the need for transdisciplinary training and specialisation in this field. Through a policy of a research-based curriculum for this degree, the need for the current study emerged. One of the modules

for the degree focuses on specific specialisation areas. The current study was undertaken to establish the training needs for specialisation in occupational therapy related to early childhood intervention.

A research survey was conducted and a questionnaire developed to ascertain the needs and skills of occupational therapists who are currently providing a service in the field of early childhood intervention. A response rate of 87% was obtained from the sample of therapists, drawn from Gauteng, North West and Northern Province. The results that were obtained indicated that therapists on the whole experienced more confidence in their clinical abilities than in their theoretical knowledge. A theoretical foundation, as well as certain aspects regarding clinical skills, was noted for further training. Aspects pertaining to family-centred intervention were also indicated as a need for training.

The research data was interpreted and discussed in relation to the preceding literature review. The current research was evaluated and suggestions for improvements to the questionnaire included the avoidance of double bound questions and a different use of rating scales. The positive aspects of the study were also indicated.

In conclusion, a framework for the occupational therapy module was formulated. Suggestions regarding mini-practicals to be included in the course and the content of the paper cases were given. The suggested educational methods and content were based on the research data that was obtained from the research. Indications for future research, including suggestions of research projects to be conducted during the course, were given. The latter pertained largely to the use of internationally standardised tests in a South African context.

Samevatting

SLEUTELWOORDE:

Vroeëkinderjare-intervensie, kurrikulumontwikkeling, arbeidsterapieproses, nagraadse opvoeding, spanwerk, gesinsgesentreerde intervensie, Suid-Afrikaanse ekologiese konteks.

Die hoë voorkoms van kinders met ontwikkelingsagterstande plaas 'n groot druk op 'n gemeenskap om intervensiedienste aan diegene wat dit nodig het, te verskaf. Hierdie hoë voorkoms van kinders met ontwikkelingsagterstande word in 'n groot mate veroorsaak deur gevorderde mediese prosedures wat 'n positiewe oorlewingskoers van hoërisiko-kinders tot gevolg het. Gesondheidsdienste in besonder word uitgedaag om gekoördineerde en effektiewe strategieë te ontwikkel om gestremdhede te verhoed en minimaliseer. Dit blyk dat professionele persone probleme ondervind om met mekaar en die familie saam te werk en die aanwending van multivaardighede word ook nie algemeen toegepas ten einde op dienste te bespaar nie.

Nog 'n kwelling is die ongewenste ekologiese konteks waarin 'n groot aantal kinders grootgemaak word. Armoede, 'n hoë misdaadvoorkoms, verswakkende toestande soos MIV/VIGS, asook kindermishandeling, is onder die vele faktore wat verdere druk op gesinne plaas en hulle vermoë om vir hulle kinders te voorsien, belemmer.

'n Literatuuroorsig dui aan dat die antwoord tot effektiewe vroeëkinderjare-intervensie in die ontwikkeling van transdissiplinêre spanwerk lê, wat die gesin as 'n integrale deel van die span insluit. Van verdere belang is dat die ekologiese konteks van die gemeenskap vir wie die diens bedoel is, in gedagte gehou word vir enige mate van sukses in die intervensiestrategie. Die konsep van spanwerk, gesinsgesentreerde intervensie en ekologiese konteks is in hierdie studie ondersoek.

Een manier vir professionele persone om voor te berei vir die geweldige taak om effektiewe vroeëkinderjare-intervensie te verskaf, is deur verdere opleiding. Aan die Universiteit van Pretoria is 'n meestersgraad in vroeëkinderjare-intervensie ontwikkel met die spesifieke doel om die behoefte aan transdissiplinêre opleiding en spesialisasie op die gebied aan te spreek. Deur die beleid van 'n navorsingsgebaseerde kurrikulum vir hierdie graad, het die behoefte

aan hierdie studie na vore gekom. Een van die modules vir dié graad fokus op spesifieke spesialiseringsareas. Die huidige studie is onderneem om die opleidingsbehoeftes vir spesialisering in arbiedsterapie ten opsigte van vroeëkinderjare-intervensie vas te stel.

'n Navorsingsondersoek is aangepak en 'n vraelys ontwikkel om die behoeftes en vaardighede van arbeidsterapeute vas te stel wat tans 'n diens op die gebied van vroeëkinderjare-intervensie verskaf. 'n Responskoers van 87% is verkry uit die steekproef van terapeute in Gauteng, Noordwes en Noordelike Provinsie. Die resultate wat verkry is, het aangedui dat terapeute oor die algemeen meer selfvertroue in hul kliniese vermoëns as in hulle teoretiese kennis ondervind het. 'n Teoretiese grondslag asook sekere aspekte in verband met kliniese vaardighede is vir verdere opleiding aangeteken. Aspekte ten opsigte van gesinsgesentreerde intervensie is ook as 'n opleidingsbehoefte aangedui.

Die navorsingsdata is met betrekking tot die voorafgaande literatuuroorsig geïnterpreteer en bespreek. Die huidige navorsing is geëvalueer en voorstelle vir verbetering tot die vraelys het die vermyding van dubbelsinnige vrae en die gebruik van verskillende beoordelingskale ingesluit. Die sterk punte van die studie is ook aangedui.

Ten slotte is 'n raamwerk vir die arbeidsterapiemodule geformuleer. Voorstelle in verband met praktiese mini-sessies wat in die kursus ingesluit moet word en die inhoud van die gevallestudies is gegee. Die voorgestelde opvoedkundige metodes en die inhoud van die kurrikulum is gebaseer op die navorsingsdata wat van die navorsing verkry is. Aanduidings is gegee vir toekomstige navorsing, insluitend voorstelle vir navorsingsprojekte om gedurende die kursus te doen. Laasgenoemde verwys grootliks na die gebruik van internasionaal-gestandardiseerde toetse in 'n Suid-Afrikaanse konteks.

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Chapter 1

Orientation and Problem Statement

1.1 Perspectives on Early Childhood Intervention

Experts[1] in the field of early childhood intervention are in agreement that the first few years of life are developmentally crucial and are intricately related to learning opportunities and outcomes in later life. This period sets the stage for an individual to develop the ability to grow and participate in the social, educational and vocational context. Should the child's developmental needs not be met during this early period, it could have diverse and detrimental effects on his future prospects of leading a productive and fulfilling life.

It is thus imperative for the well-being of a society to ensure that optimal conditions for early development exist. Alant states: "As social factors for example, family and community poverty, violence, social support, health care access, pre- and post-natal care and child-care environments have been explicitly linked to developmental delays in young children, a large proportion of South African families are at risk in raising young children in less than optimal conditions".[2] Where risk factors for developmental delays are present, effective strategies should be in place to prevent the occurrence of disabilities at a later stage.

Another problem that is encountered in society at present is the high incidence of disabilities due to modern medical advances. "Advances in obstetric management and

intensive neonatal care have enabled survival of low-birthweight and at-risk infants as never before".[3] Survival from serious incidences such as infectious diseases or traumatic brain injury is also higher due to modern medical technology. Research has shown that survivors are likely to have significant developmental delays as they grow and mature.[4,5,6,7] A variety of impairments may also follow, such as hearing, visual, intellectual, motor or multiple disabilities.[3]

It has been estimated that 85 % of the world's disabled children live in developing countries and that about 7 % of the world's children are disabled.[3] Due to its history, South Africa can be viewed as a developed, as well as developing, country. Advanced medical technology, private hospitals and practices, and an affluent society, exist alongside vast rural areas with large populations where poverty and diminishing public health services exist.

Where public health services are available for the larger population, the focus is rather on identification and treatment of common conditions than on early intervention and habilitation of long-term developmental disorders. From a human, but also from a medical, social and economical perspective, the existing situation should be considered and addressed. There is a dire need for effective early intervention services within the framework of primary health care.

The challenge is to develop strategies to meet the special needs of children with developmental delays. Over the past decades the concept of early childhood intervention has become firmly established in the health profession. Research data was extensively collected to answer the question put by Bronfenbrenner in 1974: "Is early intervention effective?"[8] Rossetti states that the past 25 years of research has proved the answer to be positive and today the question should rather be: "For whom does it work and under what circumstances?"[7]

Scherzer summarises the problems of the earlier efforts in early intervention: "Over many years of well meaning aid programs, vast funding efforts and myriad professional approaches both by government and non-governmental organisations, there has often been considerable fragmentation, competition and conflicting aims in projects, with much resultant frustration".[3] Briggs also acknowledges the earlier

efforts of professionals dealing with early intervention. Although there is the intention to work together as a multi- or even interdisciplinary team, she states that "....most of these individuals find themselves unprepared to successfully function collaboratively".[9]

There is common consensus among authors in the field of early childhood intervention that the best way of dealing with this complex process of helping children with developmental disorders and their families, is to provide an integrated approach to service delivery. Although the occupational therapist has become widely acknowledged as an integral member of the early intervention team[10], there is also a great need for these therapists to progress from attempting to function multi- or inter-disciplinarily, to becoming proficient members of a transprofessional team, which is considered to be a prerequisite for being a true early interventionist.[9]

One way of dealing with this momentous task is for educational institutions to provide, not only specialist training for each profession, but also transdisciplinary (or cross-disciplinary, as Blackman uses the term) training. Blackman feels that this view represents a drastic change in the approach from current training. "In essence, the cross-disciplinary nature of the content must be mirrored in cross-disciplinary training approaches rather than being dealt with from within each individual's discipline".[10]
He specifies four important requirements for successful transdisciplinary training:

- to observe other professionals
- to learn from other professionals
- to develop interpersonal skills needed for working in a team
- to function as part of a team

It is necessary to assess the current status of early childhood intervention and education of professionals in South Africa. As will be discussed in the following chapters, based on the literature, communication with key role players in early intervention and the researcher's own previous experience, the existing problems at present seem to culminate in:

- inadequate and fragmented services
- lack of collaboration between professionals

- insecurity and lack of knowledge
- outdated training methods

National and international collaboration is needed in a forward move towards an integrated approach where consensus is reached over principles of intervention, communication and teamwork. The family should play a pivotal role in this process. Within this common goal, each profession should initially develop its own field of specialisation and then cross over the professional boundaries to function in a transdisciplinary approach.

It is evident that we need to accept this new challenge in a scientific and effective manner if we are to address the problems of the child in need.

1.2 Background to the Study and Problem Statement

The University of Pretoria is one of the first educational institutions in South Africa that rose to the challenge of developing a transdisciplinary, postgraduate degree in early childhood intervention. This qualification allows professionals to gain the necessary knowledge and skills required to render services to children in the South African context. Under the auspices of the Centre for Augmentative and Alternative Communication (CAAC), different departments and stakeholders began a comprehensive curriculum development programme in 2000 to enable students to register for the two year Master's Degree in Early Childhood Intervention (M ECI) in 2001. The Faculty of Health Sciences is presenting the degree.

Throughout the developmental phase of the Master's Degree, capacity building and research were emphasised as two of the cornerstones for a successful end product. In the spirit of the development of a curriculum for the M ECI based on research, the need for the current study has emerged. One of the seven modules for the Master's Degree focuses on specific specialisation areas. The current study is being undertaken to establish the training needs for specialisation in occupational therapy related to early childhood intervention. The problem facing the researcher is thus to ascertain the needs and skills of occupational therapists who are currently providing a service in

the field of early childhood intervention. Based on the results of the current study, as well as problem areas that are indicated in previous studies and the literature on early childhood intervention, a curriculum for the specialised occupational therapy module could be formulated in accordance with a theoretical foundation and clinical needs and experience of therapists in the field.

1.3 Definition of Terms

In order to clarify concepts that are used in the text without further explanation as to the meaning thereof, the following definitions are provided at this point:

Early childhood Intervention: In accordance with the policy adopted by the team of professionals involved in the development of the M ECI at the University of Pretoria, "early childhood intervention" refers to the age group from 0 to 6 years.[2] The concept itself is further defined in 2.2.

Curriculum: The course and content of study for the Master's Degree.

Performance components: "....a specific skill or subsystem that affects one's ability to function".[11]

Performance areas: Performance areas can be categorised into activities of daily living (ADL), work and productive activities, and play or leisure activities.[11]

He/she: "He" refers to the child and "she" refers to the therapist with no specific reference to gender, implicating either male or female.

1.4 Organisation of the Thesis

Chapter 1: Orientation and Problem Statement

Chapter 1 describes the dilemma of a fast growing population of children with severe disability due to advanced medical technology which increase the survival rate of infants with problems, but on the other hand, the failure of co-ordinated services to provide the necessary early intervention. The background to, and problem statement of, the current study is described. Definitions of terms and organisation of the thesis are given.

Chapter 2: Early Childhood Intervention

In this chapter a discussion on the contemporary concept of early childhood intervention is presented. Where applicable, the more traditional views and evolution of the concepts are included. The importance of the ecological context in the process of early childhood intervention is emphasised and special attention is given to the circumstances present in the South African context.

Chapter 3: Curriculum Development

An outline of the foundations for and process of occupational therapy is given to provide the background for the research questionnaire on the training needs and current level of skills of qualified occupational therapists in the field. Due to the fact that the research results are destined for drawing up a framework for an occupational therapy curriculum, literature on curriculum development is viewed and presented. Previous studies with regard to training of occupational therapists to become proficient in dealing with early childhood intervention are discussed.

Chapter 4: Methodology

In this chapter the aims and objectives of the study are described, followed by an explanation of the research design, materials and procedures used in this study.

Chapter 5: Results and Discussion

The results of the study are presented together with an interpretation of the significance thereof for the proposed curriculum. The results are also linked to the literature review presented in chapters 2 and 3, and conclusions are drawn in relation to previous research. The effectiveness of the questionnaire being used in this research is evaluated and proposals set forth should this study be repeated or a similar study be planned. Suggestions for future research, as these emerged from the previous chapters, are set out at the end of this chapter.

Chapter 6: Conclusion

Based on the research results, a framework for the proposed curriculum for the specialised module in occupational therapy is given. The content of the curriculum and appropriate educational methods are discussed.

1.5 Summary

In this chapter a brief introduction to the relevant issues in early childhood intervention is presented under *perspectives on early childhood intervention*. These perspectives include the importance of early development, the high incidence of disability, circumstances prevailing in South Africa, the need for collaboration between professionals and the challenge of initiating educational methods that would produce competent early interventionists. The *background to the study* and the problem statement are given, and the *organisation of the thesis* concludes this chapter.

Chapter 2

Early Childhood Intervention

2.1 Introduction

To deal with a concept as comprehensive as early childhood intervention, it is necessary to make a selection of relevant information for the purposes and extent of this chapter. Firstly, the concept of *early childhood intervention* will be defined and then three of the major aspects that emerge from the definition will be described. These are *teamwork, family-centred childhood intervention* and *ecological context*. Further selections under each of the above-mentioned aspects, will be indicated in the text.

In terms of the broad lay out of the content, general information on each aspect will initially be given and then the application in terms of occupational therapy will follow. Application of the content to the South African milieu will also be dealt with throughout the text. Where applicable, evolution of practices will be indicated or the traditional will be compared with the contemporary.

2.2 Defining Early Childhood Intervention

The field of early childhood intervention is a complex and multifaceted one. It ultimately includes not only a variety of underlying assumptions, but also some very specific focus areas.

Shonkoff and Meisels[1] give the following underlying set of beliefs or assumptions that form the cornerstones upon which the idea of early childhood intervention is based. These assumptions are:

- that all living organisms are designed to adapt to their environment. The behaviour and developmental potential of the child (organism) is neither predetermined at birth by fixed genetic factors nor immutably limited by a strict critical period beyond which change is impossible.
- that it is only within a broad ecological context that the development of the young child is to be fully appreciated and understood. This assumption takes as its starting point a core understanding of the family as a dynamic system. From here it extends outwards to include the complex, interactive influences of the child's immediate community as well as the broader social, economic, and political environment in which he or she lives. All aspects of early childhood intervention take the above contextualisation as their starting points.
- that the nature of the field is such that it necessitates the introduction of an interdisciplinary approach to the problem. The range of developmental opportunities and challenges confronting the child and the consequent range of services and supports necessary to meet all the child's needs require the expertise of various professional disciplines.

Taking the above set of assumptions as starting point, Shonkoff and Meisels[1] give the following contemporary and comprehensive general definition of the field of early childhood intervention:

> "Early childhood intervention consists of multidisciplinary services provided to children from birth to 5 years of age to promote child health and well being, enhance emerging competencies, minimise developmental delays, remediate existing or emerging disabilities, prevent functional deterioration, and promote adaptive parenting and overall family functioning. These goals are accomplished by providing individualised developmental, educational, and therapeutic services for children in conjunction with mutually planned support for their families".

Farel provides a more concise definition, namely: "Early intervention means identifying and providing services to children who are at risk of having a handicap or who have other special needs that might impede their development".[10]

Grisworld states that early intervention addresses "...developmental, educational, and social needs of children, up to the age of 3, who have a disability or developmental delay... Services are family-centered, focusing on the needs of the family unit, not just the child's... In a family-centered model, family members are considered to be equal members of the team and participate in all aspects of planning the child's care..." .[11]

From the reading of the basic underlying assumptions and the resultant definitions of the field, three important concepts emerge that will be addressed further, namely:

- Teamwork
- The family
- Ecological context

2.3 Teamwork

2.3.1 The Importance of Teamwork

Early intervention can only be successful if it is placed within the context of a team approach in the health profession. Spencer and Coye[12] explicitly state that "...exemplary early services are necessarily performed by teams, since only teams can co-ordinate the many specialised efforts needed to address the complex issues of each situation". At the heart of this belief is the fact that all aspects of a child's development are interrelated and that service delivery therefore necessitates the input of all the team members. Individual roles may vary, depending on the unique needs of each child and family.

2.3.2 Types of Teamwork

Baloueff[13] describes three types of approaches that may be used, depending on the setting and availability of team members. These are the multi-, inter-, and transdisciplinary approaches. To these approaches Briggs[9] adds a fourth approach, namely the unidisciplinary approach. Although not necessarily a team approach, its usefulness will nevertheless be discussed.

- **The Unidisciplinary Approach**

  In this approach one professional or professional discipline is involved in service delivery. Should this approach be the preferred one in circumstances where the other approaches are available, it should be seen as an ineffective way of providing early childhood intervention. It would seem to assume that a professional or discipline could meet all the needs of the child or family.

  There could, however, be instances where a specific need and intervention are all that is required. In such cases this approach would be sufficient. Unavailability of multiprofessional teams in some rural areas may also necessitate the use of this approach as one professional may be all that is routinely available.

- **The Multi-disciplinary Approach**

  The multi-disciplinary team is described as a parallel approach as every professional works alongside to the others with limited interaction and exchange of information, opinions and expertise.[9] Even if there is consultation between professionals, there is still a lack of co-ordinated service delivery.[13]

- **The Interdisciplinary Approach**

  In this approach exchanges of information occur readily and programme planning is done to ensure an integrated service plan. Collaboration takes place and interpretation of the child's evaluation, diagnosis, goal setting and treatment is a shared responsibility. Professionals, however, still tend to practice within their own areas of

expertise. Some crossing of disciplinary boundaries may occur and two professionals may provide co-treatment. Briggs points out that in interdisciplinary teams, there is typically a strong appreciation of the contribution of the other team members and the family. She also points out, however, that ".... most professionals do not fully understand the exact nature of each other's professional practice".[9]

Fragmentation of services does still occur and cohesion is not fully established by the team members.

- **The Transdisciplinary Approach**

Briggs[9] states that certain key components must be present before a team can be considered to be transdisciplinary in nature. It is firstly necessary that more than one discipline be involved and that boundaries be flexible and interchangeable in order that an exchange of information, knowledge and skills can take place. Secondly, the team members' interaction must be characterised by collaboration, problem solving and decision making. All members of the team are involved in the planning and monitoring of a case, but not necessarily in service delivery. Thirdly, the family is regarded as an integral part of the team. The parents are thus involved in the assessment, planning, implementation and evaluation of the treatment, and they have the ultimate authority and decision-making power. Lastly, a co-ordinator who is responsible for the implementation of the treatment program, is appointed from the team for each case.

In the transdisciplinary approach, all team members are committed to teaching, learning and working across disciplinary boundaries. The intention of the transdisciplinary process is for individual members to add to their own experience by incorporating the information and skills, offered by other team members, into their own discipline repertoire. The transdisciplinary approach was, however, not intended to promote the development of a team in which each discipline member has the same skills or in which one discipline can be exchanged for another.

2.3.4 Members of the Team

The size of the team and the variety of specialists seem to be limited only by the needs of the community and the availability of funds and manpower. Spencer and Coye[12] describe the traditional team as consisting of physicians, educators, psychologists, nurses, social workers, speech therapists, occupational therapists and physiotherapists. It is felt that other specialists may be necessary to provide a more effective service. Baer, Blyler, Cloud and McCamman for instance, feel that the inclusion of dieticians and nutritionists are of paramount importance in the early childhood intervention team.[10] Where many of these specialists were traditionally confined to tertiary care centres or public health clinics, they need to become part of all community based early intervention teams. It is here that they can fulfil the much-needed function of providing preventative nutritional services to the children most vulnerable to nutritional defects. This argument would then also hold true for any other specialisation that might contribute to a more effective early childhood intervention team.

Another important category of worker in the community-based early intervention team is the so-called lay helpers or paraprofessionals. They are often part of the communities that they help to serve. They add a specific dimension to the early intervention team that is eloquently described by Specht, Hawkins and McGee: "I'm from the community I serve, I know most of the people, they know me. I know their problems because they are mine also, and I understand the poor people because I am one, and a part of them".[1] Apart from the obvious benefits to the community described above, these workers also increase the available manpower at a cost-effective rate. This could also serve to uplift the community by providing employment to some of its members.

The inclusion of the family as part of the whole process of early childhood intervention must be seen as one of the most important innovations in service provision and is advocated by most authorities in the field. In the past the family often felt alienated and resistant because they were not part of the whole process, or were only included at a later stage, thereby lacking insight into the rationale of the programme and what was expected from them. The importance of the family in the team and the professional-parent relationship will be discussed in more detail in 2.4 of this chapter.

2.3.5 Models of Teamwork

Rather than describing the different members of the early intervention team, McConkey[3] differentiates between the different models of teamwork for specific circumstances. He distinguishes between early intervention in developed and developing countries. In developed countries the services are mostly provided by teams consisting of professionals who see the child at clinics or day care centres. To prevent fragmentation and duplication of services, the team should have a case manager for each family to ensure that a coherent service is provided. Transdisciplinary training should enable the key workers to obtain the necessary skills and techniques from members not involved in the case, in order for them to provide an integrated service to the family.

In developing countries, however, the most popular and sustainable staffing model for community-based early intervention consists of project co-ordinators with a team of field workers. (*Field workers* correlates with *paraprofessionals / lay workers* discussed in 2.3.4) The project co-ordinators may be drawn from a range of professionals involved in early intervention. Their main role would be the training of the field workers, rather than direct service delivery. In this way larger numbers of families may be reached than with a team consisting mainly of professionals, situated in certain fixed venues.

In South Africa, which can be defined as a developed and developing country both the above models may be relevant, depending on where the intervention is taking place.

2.3.6 The Role of Occupational Therapy in Teamwork

2.3.6.1 Definition of Occupational Therapy

A definition of occupational therapy is given at this point to differentiate the domain of this profession from that of other team members. For this purpose the official definition, formulated by the American Occupational Therapy Association (AOTA) in 1972, is used.[13]

"Occupational therapy is the art and science of directing man's participation in selected tasks to restore, reinforce and enhance performance, facilitate learning of those skills and functions essential for adaptation and productivity, diminish or correct pathology and to promote and maintain health. Its fundamental concern is the capacity, throughout the life span, to perform with satisfaction to self and others those tasks and roles essential to productive living and to the mastery of self and the environment".

The definition emphasises the therapeutic use of tasks, which is derived from self-care, school/work and play/leisure activities. It also indicates the importance of independent functioning of the individual, to the best of his ability, throughout life. The role of the occupational therapist is, through use of scientific knowledge and skills, to direct an individual or a group's participation in activities. Productivity and task satisfaction are important end products of activity participation.

In order to further clarify the unique role of the occupational therapist in the early intervention team, the definition of occupational therapy in early intervention as formulated by the AOTA in 1986, is added.[14]

"Occupational therapy personnel use purposeful activity in the development or restoration of function to help the child and family develop resources to meet personal needs and demands of the environment. The child's occupations of movement, play, eating, interaction with others, dressing, bathing and the like are the purposeful activities used in early childhood intervention to promote normal development and adaptive coping behaviours. Treatment stems from a

scientifically based neurophysiological framework. Services are provided to help parents in their roles as providers and primary care givers. Treatment may be provided in conjunction with other disciplines and professionals.... Occupational therapy in early intervention promotes independent function and adaptive interaction with the environment through the use of age appropriate, purposeful activity".

In both the afore mentioned definitions the scientific base of occupational therapy, use of activities in treatment and independent functioning of the individual in performance areas are emphasised. The definition on occupational therapy in early intervention, however, adds the importance of teamwork and especially the inclusion of the family in the intervention process. This is deemed to be of paramount importance as was will be further highlighted in 2.4.

2.3.6.2 Scope of Occupational Therapy in Early Childhood Intervention

The scope of occupational therapy in early intervention has been clearly indicated in the United States of America with the adoption of the Public Law "The Education of the Handicapped Acts Amendments" in 1986.[15] This has brought about a significant shift from service delivery previously provided to infants and toddlers, mostly in hospital settings and special schools, to a comprehensive system directed at meeting the needs of children and their families in the community. Within this broad scope, the occupational therapist plays a pivotal role in the professional team involved in early intervention, where the "...role of occupational therapy is to facilitate the independent functioning of infants and toddlers and their families".[16]

Directed by the policies in the Public Law, the occupational therapists in the U.S.A. took the lead in broadening and formulating the scope of occupational therapy in early intervention. Central to this process, the needs of the family were constantly considered. In a Position Paper that was published in 1988, the following was stated: "AOTA supports a family-focussed approach to early intervention and preschool services. When families' needs are successfully addressed, children make more progress".[17]
Within this frame of reference, and based on the Public Law, the following parameters for occupational therapy in early intervention were stipulated:[15]

- **General Parameters**
  - Developmental needs of the child, and family needs related to enhancing the child's development, should be addressed.
  - Service provision should be in accordance with other service providers, parents and the appropriate community.
  - Location of services should be, to the extent appropriate, provided in the type of setting in which children without handicaps would participate.
  - Training of parents and others regarding the provision of services should be done.
  - Assessments and setting of goals for treatment and outcome should be integrated in teamwork.

- **Parameters According to the Definition of Occupational Therapy**
  - Identification, assessment and treatment of performance areas and components should be designed to improve the child's functional ability to perform tasks in home, school and community settings.
  - Adaptation to tasks and environments should be performed to facilitate development and promote the acquisition of functional skills.
  - Prevention or minimisation of the impact of delay in development or impairment.

- **Population for Early Intervention**
  - Infants and toddlers from birth through age two who need early intervention because they:
  - experience developmental delays as measured by the appropriate diagnostic instruments.
  - have a diagnosed physical or mental condition that has a high probability of resulting in developmental delay.

- **Family-Centred Services**
  - The family should be an interactive process between the professional and the family members.
  - An individualised family service plan should be created.
  - Case management should be conducted to co-ordinate the services of team members and other agencies in the provision of needed services.

Although these parameters can be regarded as universal for occupational therapy in early intervention, specific national circumstances need to be taken into consideration in the application of these strategies. The political, cultural and economic factors of a specific country will have an effect on the application of service provision. In South Africa, many under two year old children who are in need of early intervention do not receive sufficient remedial help at this early age. The age for early intervention was thus extended to six years for the purposes of the proposed M ECI. The training and skills of occupational therapists in a specific country would also affect the application of early intervention strategies. It is important for the purposes of the current study to investigate the differences and circumstances which prevail in South Africa and which could influence occupational therapists in adhering to the scope as presented by the AOTA. A closer look at the circumstances in this country is taken in 2.5 of this chapter.

2.4 Family-Centred Early Childhood Intervention

2.4.1 Service Delivery Models

Contemporary literature on early intervention abounds with information on the importance and implementation of family-centred services. A leading author such as Blackman finds it amazing that while the family has been the cornerstone of society for centuries, and everybody has been part of a family themselves, the role of the family needed be rediscovered by professionals. He poses the question: "With such universal expertise, why has the recent emphasis on family-centred care seem so novel and required such a reordering of how we behave professionally?"[18]

The fact of the matter is that professionals have used service delivery models in the past, which have excluded the parents from direct involvement in the programme for their child. Baird and McConachie describe some of the traditional models in use:[3]

- **The Expert Model**

In this model the professional is seen as having all the expert skills to design and carry out the programme. A predetermined assessment method is used and the professionals determine the child and family's level of functioning. That leaves the family out of the process, with the result that the parents are deskilled and left powerless to make decisions that may affect their child. This model correlates with the *medical model* that is described by Bazyk.[19]

- **The Transplant Model**

The professional designs the programme and provide recommendations and strategies that they believe will be beneficial to the family. The model assumes that the professional is a good teacher and that the parents are capable of following the instructions. Dependency on the professional's skills still prevails and decision-making and interventions are not required from the family. Family differences are often not taken into account in the prescribed programme

- **The Partnership Model**

Parents become part of the goal-setting process and the needs of the child and family within their wider social context is taken into account in the programme. The parents' confidence is developed in dealing with service systems and they feel more empowered to take responsibility.

Although parents are becoming more involved to varying degrees in the above models, they still complain about confusing and conflicting advice that they get from multiple professionals. This is the result of a lack of communication between the various team members and needs to be addressed urgently, as parents are still left feeling helpless and confused about what the best decisions would be concerning the best services for their child. Briggs[9] highlights this problem in a reference to a family where the parents received excellent advice from the different professionals but, because of a lack of communication in the team, were in the end still left with the question, "So now what do we do?"[9]

The answer seems to be the incorporation of the family into the team. This approach demands a new way of service delivery and an adaptation from previous practices. Leviton, Mueller and Kauffman suggest that converting "...traditional service systems to a model based on family-centred care will necessitate changes in the roles of professionals, as well as in the practices of agencies working with families."[18] As was the case with developing a transdisciplinary team approach, this does not happen easily or automatically. A team will have to make a concerted effort and follow the necessary steps, including training, to achieve a truly family-centred approach.

According to Levinton et al.,[18] a true family-centred approach would entail all the following characteristics with regard to assessment, planning and service delivery:

- **Assessment**

The relationship between professionals and the family begin by jointly providing information to assist parents in making informed decisions about which services they would like to receive. Family-needs assessments can be used to assist in the phase. Assessments are not predetermined but are chosen for each family, with the parents fully involved in the process.

- **Planning**

The professionals and parents jointly explore a variety of options for achieving goals. The professionals give information but refrain from making specific recommendations, allowing the parents to formulate the goals and strategies that they feel will be most beneficial to their needs.

- **Service delivery**

Professionals act on the goals and strategies that the parents have decided on. Professionals may provide a range of services including training, therapy, advocacy, support, information and co-ordination, depending on the request of the family. These

may change during the service delivery process in accordance with the parents' needs and decisions.

When all the characteristics of a family-centred approach are considered, it is the contention of the researcher that few early intervention teams in South Africa adhere to all of these. It would necessitate specific intervention institutions and teams representing a complete spectrum of professionals to develop a family-centred approach that would incorporate all the requirements. Not many such settings are found in this country. As will be seen in the next section, the efficacy of a family-centred approach has been proved such that it is desirable to strive towards such a situation.

2.4.2 Effectiveness of Family-Centred Early Childhood Intervention

As the theory on family participation was being translated into practice, various research initiatives were launched to determine the effectiveness of family-centred programmes. In a 1987 study Shonkoff and Hauser-Cram[20] found that not only was parent participation effective, but that the extent and type of involvement has emerged as a strong predictor of child-outcome. Gwalnick's[21] review of the efficacy research on family involvement in early intervention, indicated that the one factor that best differentiated the more successful interventions was the extent to which the interventions were aimed at supporting and enhancing the roles of families as competent caregivers of their children.

These and other similar research findings emphasise the advantage of the family-centred approach where the family is empowered and given a sense of competence, over the traditional approaches where the family was left with a sense of helplessness and dependency.

2.4.3 Occupational Therapy in Family-Centred Early Childhood Intervention

Bazyk[19] states that the occupational therapist's traditional positioning within the medical model (called *expert model* by Baird and McConachie[3]) resulted in limited parent participation. The occupational therapist was regarded as a professional with the knowledge and expertise to plan, set goals for treatment, make decisions and bring about change in the child. As was the case in the medical model, the parents were passive recipients and became dependent on the therapist. They doubted their own abilities to help their child's development and their feelings of helplessness often elicited resentment towards the intervention programme, the therapist, or both. Neither of these resulted in effective intervention for the child.

Bazyk regards the enactment of the Public Law in the U.S.A. as providing the impetus for change in the attitude towards the inclusion of parents in the treatment strategy, as it "…. provided a legal mandate for parents to be included as an integral part of the child's educational programme and defined their participatory rights".[19] In addition to the legal advances, a shift also occurred wherein professionals started to listen to the needs of parents regarding the management of their children. Bazyk feels that occupational therapists have evolved over the past two decades and have largely incorporated the idea that the focus should shift from the traditional therapist centred to a more therapist-parent centred approach to treatment. In the latter approach parents and professionals need to collaborate as equals, as was described in the partnership model in 2.4.1.

Together with the increased awareness of the significance of parental participation in treatment, clinicians like Henderson, Lawlor and Pehoski expressed concern regarding the occupational therapist's lack of knowledge concerning parenting and the family.[22] They feel that therapists were competent clinicians who were familiar with the effect of disability on the child's development, but lacked knowledge of the effect of disability on the parent-child relationship and the family.

Bazyk[19] stipulated six guidelines for occupational therapists in developing family-centred programmes:

- **The Parent as Decision-maker.**

The therapist must use her knowledge of intervention strategies to enable the parent to acquire the knowledge and skills needed to care for their children with special needs. The parents must be put in control of the process while the therapist remains the service provider. The role of the therapist shifts to being consultant and providing support, while the parents are being empowered to build resilience, develop an internal locus of control and take responsibility for their child's development and well being.

- **Support of Parental Role Development Versus Role of the Parent as Therapist.**

The therapist must acknowledge all the other roles that parents must assume and not expect them to become a therapist. In this regard Case-Smith points out that the, "...aim is to help parents build a repertoire of skills for successful interaction with and greater enjoyment of their children".[16] Parents need to enjoy their children.

- **Collaborative Home Treatment Programmes**

The process of parent training, which traditionally implied a one-way interaction of teaching the parent, should change to parent-professional collaboration. Whereas the therapist has the expert knowledge on intervention strategies, e.g. to improve dressing, positioning, play, etc., it is the parent who has an intimate knowledge of the child's preferences and routines as well as the overall circumstances at home. With this in mind, collaboration means ".... a two-way sharing of this information to successfully identify the best intervention activities for the child and the family".[19]

- **Differences in Collaboration with Families**.

Due to each family's unique composition and needs, collaboration will differ in degree and type. The therapist should take the preferences and needs of parents into consideration when the intervention programme is compiled, in order to avoid frustration if the parents do not meet the therapist's expectation. This will, to a large extent, avoid

labelling parents as being non-compliant should they not always comply with the demands of the programme. When the therapist assumes that the parents will take responsibility and control for their child's progress, she should also respect their choice in the amount of time they spend on intervention strategies at home. To avoid later frustration it is therefore imperative to involve them from the onset in all aspects of the programme, including its management.

- **Options for Parents**

When parents are involved in intervention strategies, they often come up with unique and creative ways of solving their child's problems. This should be encouraged as it enhances the parents' sense of control and confidence, not only in their ability to take care of their child, but also in their contribution to the formal treatment programme.

Diversity in teaching methods and communication styles are very important if the above goals are to be achieved. Parents, who do not understand what the therapist is suggesting, are often left with a greater sense of helplessness and even guilt feelings. Taking the parents' preferences into account, the therapist has various techniques at her disposal to convey the needed information. Modelling, verbal explanations or drawings are all ways in which she can impart the necessary information.

- **Consideration of the Child's Needs.**

It is ultimately the child's special needs and interests that should be at the heart of the intervention process. The child must be viewed as part of the family in a specific community, and must be prepared to assume his life roles to the best of his abilities.

Occupational roles expand as the child grows older and the better he is prepared for these, the more will he be able to assume control and responsibility for his own life. To enhance this process, the child's strengths should be emphasised and his own decision-making skills developed. It is imperative to foster a sense of confidence and assertiveness in the child.

Other authors who have contributed to the process of bringing the family-centred approach closer to home for occupational therapy are Schaaf and Mulrooney. They linked the family-centred approach to a more familiar one in occupational therapy, namely Gary Kielhofner's Model of Human Occupation. They state that Kielhofner's model "...provides therapists with a systematic approach to understanding and working with the values, needs and skills of the family and child within their many environments".[23]

In Kielhofner's model, the environment and the manner in which the individual is influenced by the pattern of interaction with the physical and social surround, is emphasised. The environment in which a family lives and functions should be taken into account, as both the individual's characteristics and the environment influence choices and behaviour. Schaaf and Gitlin[14] support this viewpoint and emphasise that not only should programmes be family specific to be meaningful and effective, but they should capture the cultural diversity and the specific environmental concerns of each family.

Due to the holistic viewpoint of the client and his surroundings, which has always been a cornerstone of occupational therapy, the researcher is of the opinion that the occupational therapist at an advantage to implement the afore-mentioned guidelines during intervention in order to obtain a family-centred approach. In the next section on the ecological context, concepts such as human diversity, economic, political and other environmental issues will be discussed.

2.5 The Ecological Context

As was emphasised in Kielhofner's Model of Human Occupation[23], the ecological context in which early intervention services are to be delivered, is important due to the major influence the physical and social milieu has on human development. Garbarino and Ganzel define ecology as "...the study of relationships between organisms and environments...(and)...how the individual and habitat shape the development of each other".[1]

It is beyond the scope of this study to do justice to the complex and multifaceted nature of the individual and the environment, and the intricate and varied interaction between the two. A brief description will therefore be given of the various factors that influence the individual and the environment, in order to give an overview of the important factors that need to be considered. National policy and community involvement in South Africa will also be discussed in more detail, as any proposed training curriculum for early childhood intervention can only be effective if these aspects are considered and included in such programmes.

2.5.1 Factors Related to the Ecological Context

Masagatani[13] divides the environment into two categories, namely the human and non-human environments. As is the case with the description of many complex constructs, these classifications are neither mutually exclusive, nor does the total of sub-categories express the final potential of the categories. It remains a useful way, however, to categorise the multiple and dynamic processes involved in the ecological context and assists in easier identification and explanation.

- **Human environment**

The human environment consists of the individual and of groups. The individual has a specific biophysical status comprised of characteristics such as age, gender, genetic and ethnical background. These constitute the individual's unique identity. The individual is also endowed with a sensory-motor, cognitive and psychological make-up that allows him to interact with the environment. The experiences and opportunities that are encountered in its lifetime influence the way in which the individual's potential develops, or is restricted.

Because humans are interactively and socially inclined, the formation of groups occurs as a logical consequence thereof and each individual will belong to a myriad of groups in its lifetime. The family forms the primary group to which the individual belongs and is instrumental in its acquisition of language, religious and cultural values and psychological development. Socio-political realities necessitate that the family extends into larger groups that will eventually

comprise the community in which the individual must function. The individual thus becomes part of a social environment.

- **Non-human environment**

The non-human environment is comprised of physical conditions, things and ideas.[13] Demographic boundaries, housing, availability of work and schools, food, furniture, toys, etc. are all part of the physical world in which the individual and groups must make a living. There is a reciprocal influence between these various components, like economic status and the availability of the necessities for optimum development. Political ideation and the way in which it is administered, has a profound overall influence on the non-human and thus the human environment.

In an ideal world all these factors would work together in a harmonious way to create a environment that is conducive to health and development. In a society where "...humans can relate to human and non-human environments in a self-directed, purposeful, satisfying and meaningful way... they achieve and maintain a state of health".[13]

In South Africa with its current conflict, crime and poverty, health and development is seriously compromised. Prevalent factors such as the high percentage of the population afflicted with AIDS, the large number of homeless or abused children and the disintegration of families through divorce or crime related deaths, add additional stress to all members of society. It has a detrimental effect on the socio-economic status of a large portion of the population, which renders them helpless and dependent on others for help. This has serious implications for the health and well-being of the child.[24]

Any venture that attempts to make a significant difference through early childhood intervention, will have to take these circumstances into account. National policy on the child and community involvement needs to be discussed further with regards their relevance to the ecological context in South Africa.

2.5.2 National Policy on the Child

2.5.2.1 Strategies, Programmes and Services.

Since the general election in South Africa in 1994, national reconstruction of government services was undertaken. With regards the welfare of the child, the ratification of the Convention on the Rights of the Child (CRC) in June 1995,"...committed South Africa to implement a first call for children, whereby the needs of children are considered paramount throughout the government's policies, developmental strategies, programmes and services".[25]

The government subsequently sought to bring legislation, policy and practice in line with the requirements of the CRC. This is reflected in the Bill of Rights of the Constitution in 1996, which deals specifically with the rights of children.[26] Among others, these include the right to parental or appropriate alternative care, the right to basic nutrition, shelter, basic health care and social services, and the right to be protected from maltreatment, neglect, abuse or degradation. In addition to the rights of the child, the government has also adopted a set of principles for protection of children. These principles correlate to an extent with the policies in the Public Law, which was adopted in the USA in 1986 (refer to 2.3.6.2). These principles are:[26]

- **Diversity**
  Services to children, their families and communities should respond to the diversity of their cultural background and of the circumstances in which the child, family and community find themselves.
- **Accountability**
  Everyone who intervenes with children and their families should be held accountable for the delivery of an appropriate and quality service.

- **Empowerment**

  The resourcefulness of each child and his/her family should be promoted by providing opportunities to use and build their own capacity and support networks and to act on their choices and sense of responsibility.

- **Participation**

  Children and their families should be actively involved in all the stages of the intervention process.

- **Family-centred**

  Support and capacity building should be provided through regular developmental assessment and programs, which strengthen the families' development over time.

- **Services**

  Children and their families should have access to a range of differentiated services and/or programmes appropriate to their individual development and therapeutic needs.

- **Integration**

  Services to children and their families should be holistic, inter-sectoral and delivered by an appropriate multi-disciplinary team wherever possible

- **Continuity of Care**

  The changing social, emotional, physical, cognitive and cultural needs of children and their families should be recognised and addressed throughout the intervention process.

- **Effective and Efficient**

  Service provision to children and their families should be rendered in the most effective and efficient way possible

- **Child Centred**

  Positive developmental experiences, support and capacity building should be ensured through regular developmental assessment and programmes that strengthen the child's development over time.

- **Rights of Children**

  The rights of children as established in the CRC, African Children's Charter and The Constitution shall be protected.

- **Restorative Justice**

  The approach to children in conflict with the law should focus on restoring societal harmony. A child older than seven years is criminally responsible and should be held accountable for his or her actions and where possible make amends to the victim.

- **Appropriateness**

  All services to children and their families should be the most appropriate for the individual, the family and the community.

- **Family Preservation**

  All services should prioritise the goal to have children remain within the family and/or community context wherever possible. When a child is placed in alternative care, services should aim to retain and support communication and relationships between the child and his/her family (unless proven to not be in the child's best interests), and maximise the time which the child spends in the care of his/her family.

- **Permanency Planning**

  Every child in alternative care should be provided within the shortest time possible with the opportunity to build and maintain lifetime relationships within a family and/or community context.

In April 1996, the cabinet also approved the National Programme of Action for Children (NPA) as the instrument by which South Africa's commitments to children are being carried out. It serves to integrate all the policies and plans developed by government departments and non-government organisations (NGO's) with regard to children.[26]

One of the important strategies that have been developed to address the needs of young children in South Africa, is the Early Childhood Development (ECD) program. This is spearheaded by the

Departement of Education and its aims are to provide a comprehensive programme covering the development of all children from birth to nine years of age.[27]

Education and health are addressed in the White Paper on An Integrated National Disability Strategy in 1997.[28] The health policy needs to be addressed here as it has important implications for early childhood intervention. As far as health care is concerned, it is declared in the White Paper that prevention is one of the cornerstones of the disability policy. It is, however, stated that certain problem areas that cause failure to prevent disabilities are encountered. Government strategies for the prevention of disabilities are often not successful, mainly because of a lack of co-ordination between government departments. Existing prevention policies are also not effectively linked to identification and early intervention. Where disabilities are already identified, services should include general medical and nursing assistance on an in-patient, out-patient or community home-care basis. Specialised health professional assistance should also be available. The White Paper states that the Disabled People's Organisations' involvement in the facilitation of public educational programmes, early identification and referral is of paramount importance. NGO's would play an important role in this process.[28]

To supplement the CRC, The African Children's Charter (ACC) was ratified in January 2000. The ACC was inspired specifically by the unique factors affecting the African child, such as poverty, exploitation, armed conflict and natural disasters. As circumstances seem to worsen for the child in this country, the ACC is seen as an important instrument to advance the implementation of the CRC in communities.[26]

2.5.2.2 Problems Facing Early Childhood Intervention Strategies

In spite of well-intended ideations and strategies on a national level, the circumstances surrounding the majority of children in South Africa is still deplorable.

In a publication of the NPA in 2000[24], the following problems are highlighted: "It is estimated that 5% to 12% of South Africans are moderately to severely disabled. More than 80% of black children with disabilities live in extreme poverty, and have poor access to appropriate health care

facilities, or early childhood development opportunities. The HIV/AIDS pandemic is having a devastating impact on South Africa. The epidemic is growing rapidly, with over 1,500 new infections daily. It is estimated that 21% of HIV/AIDS sufferers are younger than 20 years old. This situation places great stress on families, households and children".[24]

A strong concern for the growing severity of child abuse, neglect and exploitation is expressed in the Draft Strategy on Child Protection in South Africa. "While these problems appear to be spiralling, our countries protection system is in disarray".[26] The increasing violence and crime that the country is exposed to, only increase the stress placed on the families and children.

While the above-mentioned circumstances worsen, the available professional help for children in need is being compromised by a decrease in the number of occupational therapists working in the public sector posts over the past few years. If the Gauteng Province could be taken as an example, there has been a steady increase in the vacancy of posts since 1995. For 24 hospitals in the Gauteng Province, the vacancy rate in 1995 was 15,7% and it has steadily increased to 32.9% in 2001. Statistics on 10 institutions which provide community services indicate an even greater vacancy rate with a current 42.3% vacant posts in 2001.Lack of available funds to fill the posts seems to be one of the problems leading to the vacancy of posts.[29] While the government seems to be economising on posts, the problems surrounding the child in need are mounting.

2.5.3 Community Involvement

The importance of considering the child in his community has been emphasised throughout this chapter. Shonkoff and Meisels[1] based their second assumption for early intervention on the influence of the environment on the child and the family (refer to 2.2). Kielhofner's Model of Human Occupation[30] further emphasises the role of the physical and social surround on the functioning of the individual in the community. The ecological context and the variety of factors that influence the child and the family in their specific community, should always be regarded in intervention.

Although the significance of the environment on an individual's functioning is widely recognised and the term *community* is often used in the literature, a specific definition of the concept is seldom given. The meaning is either regarded to be universally known, or it is too evasive to be easily defined. Establishing a clarification of the term is important for communication purposes in this study, as the term is often associated in South Africa with only one group of society, namely the underdeveloped, poor, previously disadvantaged and rural population.

Turning to the dictionary definition a variety of uses is found. It can refer to all the people living in a specific locality, joint ownership, fellowship of interests, people organised into a unity, or people sharing a common race, religion, pursuits, etc.[31] As is seen from this definition everybody belongs to one or more community(ies) as part of their daily living. Through the primary family group, the members belong to different communities such as the neighbourhood, workplace, school, country, etc.

When community involvement in terms of rehabilitation or service delivery is addressed, specific terminology also needs to be defined. A concept such as *Community-Based Rehabilitation* (CBR) has been defined by the World Health Organisation as "...a systematized approach to helping disabled persons within their own community, making the best use of local resources, and helping the community to become aware of their responsibility in this regard".[32] Even with such a specific definition available, authors such as Chaudhury, Menon-Sen and Zinkin feel that many different interpretations of the term still exist and that the reader is often left to gather the meaning of the term by deduction, according to the content that is presented under the term.[3]

In terms of *community-based service delivery*, Baloueff describes services as such when their "...location and structure vary with the characteristics of that community, such as geographic setting (rural, urban and so on), the needs of the population served, the community resources and the goal of the services".[13] Adoption of a comprehensive description of community-based service delivery such as the above, would help to rectify the possible misconception in South Africa that the term *communities* should only be narrowed down to specific groups or societies.

2.6 Conclusion

The three major concepts in this chapter were derived from the definitions given on early childhood intervention in 2.2. These were teamwork, family-centred intervention and the ecological context.

Regarding teamwork the literature pointed towards the transdisciplinary approach as the most effected method to deal with the complex and multifaceted process of early intervention. It was also evident that it requires a concerted effort from team members to change from more traditional approaches to a transdisciplinary approach. Team building methods should be implemented to reach *shared meaning*, as was described by Briggs.[9] Professionals in the team should be prepared to work across disciplinary boundaries and multiskilling is another challenge that need to be faced by all team members. The transdisciplinary team also incorporates the family into the team and collaboration should be done on a regular basis to involve each member in the intervention process.

Contemporary literature on early childhood intervention focuses sharply on the family. To the astonishment of Blackman[18], it is as if the role of the family had to be re-established, while it should have been the pivotal point in the intervention process all along. Gwalnick's[20] review of the efficacy research on family involvement in early intervention indicated an overall positive result.

Although the importance of active family participation in early intervention is widely acknowledged by occupational therapists, researchers such as Henderson, Lawlor and Pehoski[21] expressed concern regarding therapists' knowledge on family dynamics. Along with the rest of the team, the occupational therapist will also have to make vigorous efforts to learn more about the family and involve the family in all the intervention processes.

The importance of the ecological context was considered and an overview of the national policy on the child was given in order to narrow it down to the South African context. It is the researcher's experience that the term *community* is often used only to indicate a certain part of the population and the term was therefore defined. It became clear that each family belongs to one or

more community(ies) and that all the members of the family should be considered against these different backgrounds.

From Baloueff's[13] description, it is also clear that there are many factors that need to be considered in community-based services. Only the transdisciplinary team, as was indicated in 2.3, can effectively deliver a holistic and multifaceted program that would meet all these requirements. In South Africa, especially in the rural areas, such teams are often not available. Team members that are available are often expected to operate in a transdisciplinary fashion, although they might in actual fact be in a unidisciplinary situation. The occupational therapist, due to her holistic approach to treatment and her diversity of skills, is a valuable member of the team for service delivery under these circumstances.

When the extreme circumstances, described in 2.5.3.2, are further taken into account, it is clear that an attempt at early childhood intervention in communities where these factors are prevalent, is a daunting task. One of the factors mentioned in 2.5.3.2, is the vacancy of posts in the public sector. The occupational therapist has traditionally provided services to infants and toddlers in centre-based locations like hospitals, clinics and special schools as part of an interdisciplinary team. Although this was not necessarily the ideal situation by which to address the problems of all the children in need of early intervention, services were more readily available. Due to the vacancy of posts in the public sector, the large underprivileged section of the population for which legislation and national strategies are intended, are currently even more deprived of specialised services than before.

2.7 Summary

In this chapter a literature review was given on early childhood intervention. Different definitions were considered and from these, the major concepts of teamwork, family-centred intervention and the importance of the ecological context emerged. Each of these concepts was subsequently again reviewed.

Teamwork was discussed with regard to the importance, types and models of teamwork. The different members of the team and the process of team building were also specified. The role of the occupational therapist in the team was discussed in more detail. The definition of occupational therapy demarcated the contribution of the occupational therapist in the team and this was then expanded on in a discussion on the scope of occupational therapy in early childhood intervention.

The importance of a family-centred approach in early childhood intervention was highlighted in the literature review. Different service delivery models and the effectiveness of a family-centred approach in early childhood intervention were discussed. The role of the occupational therapist in a family-centred approach was emphasised and the need for integration of the family during intervention was advocated.

The ecological context was considered and the different factors related to ecology were specified. It is of importance for therapists to take cognisance of the circumstances in South Africa. An overview on the national policy on the child was thus given in this chapter. Issues related to community involvement were also discussed.

Chapter 3

Curriculum Development for Occupational Therapists in Early Childhood Intervention

3.1 Introduction

In order to develop an appropriate training curriculum in early childhood intervention for occupational therapists, the *process of occupational therapy* must be considered. This will provide a baseline for the research questionnaire, which will be used to investigate the needs and skills of occupational therapists currently in the field of early childhood intervention. The occupational therapy process will be described and applied to early childhood intervention in this chapter.

Theory and previous research on *curriculum development* and *training* will also be addressed in this chapter. This will provide a theoretical basis for the interpretation of results in Chapter 5 and the conclusion with regard to the proposed curriculum in Chapter 6.

3.2 Occupational Therapy Process

The Case Study Guide of the Occupational Therapy Department of the University of Pretoria will be used as a guideline for the process of occupational therapy.[33] Four major processes are encountered in occupational therapy and will be discussed. They are:

- Evaluation
- Planning of treatment
- Treatment
- Management

3.2.1 Evaluation

For clarification, the use of the terms *evaluation* and *assessment* should be defined. Evaluation refers to the process of gathering information about the child and the family while assessment refers to the specific tests and tools and the interactions that are used to conduct the evaluation.[34] Evaluation is the first step in the occupational therapy process after referral has taken place.

Meisels and Atkins-Burnett[1] described certain basic guidelines for evaluation in early childhood intervention. These will be used for discussion on the evaluation process.

- **Evaluation should be family-centred**.

Baloueff[13] emphasises that parents should be an integral part of the evaluation process. Apart from the valuable information that the parents can provide about the child's level of functioning on a daily basis in real life settings, they are also needed in order to conduct an evaluation on the family. The child cannot be viewed in isolation and family assessments should be designed to determine the strengths and needs of the family related to enhancing the child's development. Baloueff cautions, however, that family assessments should be culturally sensitive and conducted by the most natural and least intrusive methods. Assessment results should be communicated in an honest but sensitive manner and feedback to parents should also stress the child's areas of competence.

In relation to effective communication with the parents, the importance of effective interviewing skills by the therapist should be emphasised. A solid knowledge base and skills in active listening are considered as two of the main requirements for successful interviewing skills.[13] Parents are often anxious, sensitive or even defensive and they should be interviewed in such a way that a rapport is established with the therapist. Parents should regard the therapist as, what Rosetti terms a *safe person* to whom they can disclose their concerns and fears. They often have overwhelming guilt feelings about their child and blame themselves for the child's disability. Strong feelings of rejection often occur and parents should be assisted to understand their emotions.[35]

- **Regardless of the type of teamwork, information should be shared with the other professionals.**

Using the gathered data, a description of the strengths and limitations of the child and family should be communicated to the concerned professionals as well as to the parents. In the transdisciplinary team approach (refer to 2.3.2), sharing of information is part of the case management process and is therefore an automatic occurrence. In the multi-disciplinary team feedback may also be verbal but is more often by means of a written report. It is therefore imperative that effective report writing be part of the therapist's repertoire of skills.

- **Specific assessment tools that are being used should be evaluated with regard to their applicability to everyday tasks and functional goals for treatment.**

Bagnato, Neisworth and Munson[36] propose six standards of assessment material that should be upheld for use with young children. These are:

- Authenticity: Assessment tools should focus on evaluating the child's behaviour in real life settings. The use of developmentally appropriate and familiar toys or videotaped records of his functioning at home would constitute authentic assessment material for the young child.
- Convergence: Information gathered from more than one source over a period of time ensures a broader coverage of the child and family's functioning in a variety of settings and would provide a more authentic view of existing problems and assets.
- Collaboration: Assessment materials should be familiar and comprehensible enough to elicit collaborative judging and problem solving by different team members and especially the parents. The family is regarded as the primary source of authentic data on the child's behaviour.
- Equity: Assessment materials should provide an equal opportunity for children from different backgrounds and with a variety of disabilities. It should foster the child's learning-to-learn ability and provide information on how well the child is likely to generalise information to other materials, activities and settings.
- Sensitivity: Test materials should reflect changes in behaviour and must be sensitive to monitor increments in the child's progress.

- Congruence: Developmentally appropriate styles of assessments should be used, emphasising play, natural observations and parent reports. Tasks and procedures should be flexible, especially in accommodating the child with special needs.

Practical considerations for the selection of assessment tools include the cost, ease of use, durability and safety of the materials.

- **Standardised norm-based tests should be interpreted with caution in young children who seldom perform strictly according to instructions.**

Contemporary evaluation methods move away from the use of standardised norm-based tests in the very young child because of his inability to perform strictly to formal instructions.[1] Developmentally based inventories and checklists are considered to be more effective and also allow for active involvement of the parents in the evaluation process.[13]

Age appropriate tasks from the performance areas for the young child, namely play and activities of daily living, are also considered to be a more authentic way to evaluate the child's behaviour.[36] To obtain information from the child's behaviour, therapists should develop keen observation skills to be able to detect the problems and abilities whilst the child is engaged in activities from these performance areas. The observed behaviour should then be interpreted in terms of the therapist's knowledge of normal and abnormal development and pathology.

- **Assessment should not only focus on dysfunction and disability, but also on the functions and abilities that are available to the child.**

The outcome of occupational therapy is per definition (refer to 2.2) primarily concerned about function in the performance areas. As such, the emphasis in evaluation should be on both the functional abilities and disabilities of the child. In the researcher's experience, therapists do not focus enough on the use of activities from the relevant performance areas in assessment but tend to adhere to the use of formal standardised tests. The result is that a complete list of problems in performance components can be provided after evaluation, but specific information on the child's abilities and disabilities in activities of daily living and

play is lacking. This compromises the formulation of specific aims of treatment (refer to 3.2.2.2) and does not provide a sound basis for restoring function during treatment.

In conclusion, the importance of re-evaluation should also be emphasised. Reassessment of progress and adjustment to treatment strategies are needed on a continual basis to ensure that the changing and developing needs of the child and the parents are met. Regular collaboration with the other team members and the parents is a necessary part of evaluating the outcomes of treatment.

3.2.2 Planning of Treatment

A treatment rationale should be formulated before treatment commences. This is done with regard to the goal, aims and objectives for treatment. The performance areas and components relevant to the aims and objectives of treatment will also be discussed.[33]

3.2.2.1 Goal of Treatment

The goal of treatment is directed towards community participation. The life roles that are expected of the child, appropriate to the culture and environment in which he is functioning, play an important part in the goal of the treatment. The goal should furthermore be realistic in terms of the child's prognosis, abilities and the resources available in the community. The goal of treatment is thus formulated with regard to the performance contexts (refer to Table 1) relevant for each family and child.

3.2.2.2 Aims of Treatment

The aims of treatment are related to the tasks and skills that the child should be able to perform in order to participate in the age appropriate *performance areas*. The parents should also be consulted with regard to the specific tasks that they would like their child to be independent in and their preferences should be reflected in the specific aims of treatment.

Performance Areas

The complete list of performance areas in occupational therapy is displayed in Table 1. The performance areas that are relevant for the young child are *activities of daily living* (ADL) and *play*. Per definition (refer to 2.3.4.1), the purpose of occupational therapy is to enable the child to be independent in the age appropriate skills and tasks derived from the areas of ADL and play. Activities from these areas can be used therapeutically to enhance performance components, but they are also a means in themselves. In the researcher's opinion, independence in these two performance areas as a means in itself, is not always emphasised enough in therapy. ADL and play will hence be discussed in order to indicate the significance of these performance areas in early childhood intervention.

- **ADL**

For the young child, ADL are mostly centred on self-care tasks. Wilsdon[37] indicates the changing roles between care givers and the young child as development progresses from infancy to a pre-school years. The infant is initially totally dependent on
the care giver to perform all the ADL tasks which would sustain life. Independent functioning in these tasks is gradually developed during the first years of life and is expected of a child who is ready for school at six years of age.

The basic self-care tasks that the young child should master are the following:[37]

- **Feeding:**

  Children with disabilities could display problems with regard to posturing for feeding, oral control and handling of eating utensils. Problems in sensory modulation of the oral area would also interfere negatively with feeding. These skills should be addressed in early intervention.

- **Toileting:**

  Problem areas with regard to toileting could include inability due to immobility to reach the toilet, inadequate posturing, inability to handle clothes and toilet paper or to flush the toilet. Apart from these problems, a child may also experience difficulties in controlling bladder and bowel functions. There could be many reasons for inadequate control and the possible psychosocial causes for problems in this regard should not be overlooked during intervention.

- **Hygiene and Grooming:**

Personal hygiene and grooming include many tasks such as bathing, washing and combing hair, brushing teeth, taking care of nails, washing of hands and face, etc. Even the pre-school child, who is developing normally, still needs assistance and supervision in most of these tasks till until older. Children with developmental delays are even more at a disadvantage becoming independent with regard to maintaining effective personal hygiene.

- **Dressing:**

Wilsdon[37] states that problems with dressing may be of a physical, psychological or perceptual nature. Physical problems should be addressed to provide the necessary posturing, balance and co-ordination skills for dressing. If motivation is a problem, Wilsdon suggests that the dressing should be made more interesting or rewarding. Perceptual problems could include inefficient body awareness, spatial problems or dyspraxia. These problems will have to be remediated before independence in dressing will be achieved.

Gorga emphasises the major role of feeding in the infant and young child. She feels that it involves much of the parent's and child's daily schedule and can also be used therapeutically to enhance performance components, such as motor control, sensory modulation, adaptive coping and social-emotional development.[38] This illustrates the principle that although self-care tasks can be a means themselves, they can also be used to promote performance components.

- **Play**

The other performance area, namely play, plays a mayor role in the child's life. Qualified occupational therapists, working in the field of paediatrics, should be well informed about the development, content, structure and functions of play. The use of play in intervention is generally considered to have three forms of application. Firstly, play is used for its motivational value in engaging a child in active participation and adaptive behaviour. Secondly, it is used as a tool to enhance various performance components and skills. Thirdly, play is a way of life for the young child by which time is spent constructively and social interactions with peers are practised and formed.[38]

Play should be a natural and everyday occurrence in a child's life, but it is often not the case in children with special needs. Neither is it necessarily a natural phenomenon for parents of disabled children to know how to play with them. Schaaf and Mulrooney also mention the important role of the environment on the child's desire to play. They feel it "...may be stifled in a home with limited or developmentally inappropriate toys".[23] The occupational therapist has, therefore, a very important role in bringing play to the child with special needs. It is not only her own use of play as a therapeutic tool which is beneficial, but the adaptation of the child's environment to enhance play, as well as fostering parent-child play, that is of paramount importance.

The effect of chronic disease, physical limitations and poor health on the child's play has implications far beyond the physical. A lack of available playmates impairs not only the child's social development but also curtails his play development. Parents are often also ignorant about appropriate play strategies when their child cannot engage in normal play activities, often caused by over cautiousness or even guilt. The parents are often more concerned with, and caught up in, the convalescence of the child and have neglected the child's play development in the process.[39]

Elize Holloway[40] highlights the extreme situation in which infants and parents find themselves, in the NICU. The infant is often struggling for survival and its fragility creates stress for the parents. In spite of this, Holloway advocates that playfulness between parent and infant should be fostered. In this regard she sees it as one of the tasks of the occupational therapist to discern when the infant and parents are ready to begin engaging in a playful manner. Once this point is reached, she must guide the parents during the process.

3.2.2.3 Objectives of Treatment

The objectives of treatment are directed towards the promotion of *performance components* in treatment. Due to the fact that children between birth to six years of age are still developing the performance components needed to perform tasks, remediation of the components is often indicated when dysfunction occurs.

- *Cognitive development* in the early years is often facilitated through sensory-motor play development. Components such as concept formation, memory and problem-solving skills are subsequently also stimulated.

- *Social-emotional development* is closely linked with the wellbeing of the family and should be addressed in a family-centred approach to intervention.

- *Adaptive coping mechanisms* will emerge after the afore-mentioned components have been addressed in an integrated treatment strategy.

Well-developed performance components form the building bricks for the young child to become independent in the appropriate performance areas. Development is a cumulative process and the developmental sequence of occupational components should always considering in the planning of treatment strategies in occupational therapy. Without the initial remediation of the performance components in children with developmental delays, the outcome of treatment could easily result in the acquiring of splinter skills rather than providing a basis for further development.[13]

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Table 1: List of Performance Areas, Components and Contexts.

Performance areas	Performance components	Performance contexts
Activities of Daily Living Grooming Oral hygiene Bathing/Showering Toilet hygiene Personal Device Care Dressing Feeding and Eating Medication Routine Health Maintenance Socialisation Functional Communication Functional Mobility Community Mobility Emergency Response Sexual Expression Work and Productive Activity Home Management Clothing care Cleaning Meal Preparation/Cleanup Shopping Money Management Household maintenance Safety Procedures	Sensorimotor Component Sensory Sensory awareness Sensory processing Tactile Proprioceptive Vestibular Visual Auditory Gustatory Olfactory Perceptual Processing Stereognosis Kinesthesia Pain Response Body Scheme Right-Left Discrimination Form Constancy Position in space Visual-Closure Figure Ground Depth Perception Spatial Relations Topographical Orientation Neuromusculoskeletal	Temporal Aspects Chronological Developmental Life Cycle Disability Status Environmental Aspects Physical Social Cultural

Remediation implies treatment for the total or partial development or recovery of occupational components.[33] The process of remediation is based on certain assumptions about the nervous system and the learning process, as are described in the field of neuroscience.[13] Early development has certain distinctive characteristics, which is believed to be to the advantage of remediation in the young child. A few of these are:

- Accelerated tempo of development
- Plasticity of the brain
- Impressionability and adaptability of the young child
- Intentionality to learn and acquire new skills
- Existence of critical learning phases

Neuroscience is a fast developing field and new data on the functioning of the central nervous system is constantly emerging. Farber urges occupational therapists to become involved in study and research in the field of neuroscience, to seek new perspectives and be "...ready to integrate it with older but still valid concepts".[13]

Performance Components

A complete list of the performance components, which the occupational therapist should include in the treatment objectives to be remediated, is displayed in Table 1.

Gorga[38] names certain performance components, which she regards as of specific importance in early childhood intervention. These are motor control, sensory modulation, cognitive and social-emotional development, and adaptive coping.

- *Motor control* is the ability to use the body for mobility and because of its influence on the early development of social, emotional and cognitive components, it is often at the root of many treatment interventions.

- *Sensory modulation* is needed to regulate the sensory processes and forms an integral part of the infant and toddlers treatment enabling them to maintain a state of equilibrium. Gorga also regards sensory modulation as "essential for well developed functioning in other areas (i.e., cognitive performance)...".[38]

Care of Others Educational Activities Vocational Activities Vocational Exploration Job Acquisition Work or Job performance Retirement Planning Volunteer Participation Play or Leisure Activities Play/Leisure Exploration Play/Leisure Performance	Reflex Range of Motion Muscle Tone Strength Endurance Postural Control Postural Alignment Soft Tissue Integrity Motor Gross Co-ordination Crossing the Midline Laterality Bilateral Integration Motor Control Praxis Fine Co-ordination/Dexterity Visual-Motor Integration Oral-Motor Control Cognitive Integration and Cognitive Components Level of Arousal Orientation Recognition Attention Span Initiation of Activity Termination of Activity Memory Sequencing Categorisation Concept Formation Spatial Operations Problem Solving Learning Generalisation Psychosocial Skills and Psychological Components Psychological Values Interests Self-Concept Social Role performance Social Conduct Interpersonal Skills Self-Expression Self-Management Coping Skills Time management Self-Control	

In conclusion it would appear that the team should be included in the planning. As was described in 2.3.2, collaboration between team members and the family in the planning of treatment, is a prerequisite in the transdisciplinary team approached. Where this is not possible, the therapist should work in an interdisciplinary manner to ensure that her rationale of the treatment is in line with the intervention of other team members. Everybody involved

with the child, specifically the parents, should clearly understand where the treatment is heading and what outcomes are expected.

3.2.3 Treatment in Early Childhood Intervention

3.2.3.1 Theories and Approaches in Treatment

The variety clients and settings encountered by the occupational therapist in early childhood intervention demand a variety of treatment approaches from which scientific principles and techniques could be derived. The occupational therapist should thus have the knowledge of a wide variety of theories and treatment approaches, which would allow her to follow an eclectic treatment strategy within a holistic approach to service provision.

An overview of appropriate theories and treatment approaches to be used in early childhood intervention will be given in Table 2. The evolution and influence of two of these approaches will be further discussed.

Table 2: Theories and Approaches in Treatment.

Theories and Treatment Approaches:	Descriptions:
Cognitive-Behavioural approach[13]	The basic assumption of behavioural theories is that learning is always inferred from behaviour and it leads to either adaptive or maladaptive behaviour. In therapy, the child is actively engaged in learning to develop the specific behaviour necessary to function.
Neurodevelopmental treatment approach (NDT)[30]	Treatment requires that abnormal patterns be inhibited and replaced with normal patterns that will provide appropriate sensory information for motor learning.
Sensory integration approach (SI)[11]	The sensory integration approach is applied when sensory system processing deficits make it difficult for the child to produce an appropriate adaptive response. Sensory integration is based on neurological information processing and the process of organising sensory information in the brain to make an adaptive response .
Spatiotemporal adaptation approach[13]	This approach focuses on development of motor behaviour, with an implicit understanding that competence in motor

	skills promotes other facets of development. Adaptation to the environment is a key concept to this approach.
Psychodynamic (Psychosocial) approach[13]	Psychodynamic theory is designed to understand interpersonal relationships. The mind, as influenced by biological and social forces, plays a major role. The theory is concerned with the child's attempts to establish equilibrium between internal forces and those of the environment.
Model of human occupation[30]	This model seeks to explain the occupational functioning of persons. " The model focuses on both the individual's characteristics and the environment as factors that influence choices and behaviour."[30]
Learning theory[11]	Learning is seen as information processing, which is mediated by the brain. From this perspective, learning requires effective sensory reception, brain processing and motor behaviour for either movement or communication. Errors in information processing can lead to errors in occupational performance.
Cognitive-perceptual approach[30]	The cognitive-perceptual approach is concerned with the interference of perceptual and cognitive deficits in the performance of occupational tasks.[13] The aim of intervention for children with cognitive-perceptual dysfunction is to remediate the relevant components to promote function.
Motivational theory[13]	"Motivation is described as arousal to action, initiating moulding, and sustaining specific action patterns".[13] Success promotes feelings of efficacy and motivates further performance. Reinforcement principles can enhance or diminish motivation.
Biomechanical approach[41]	The biomechanical approach is applied when problems are experienced in maintaining posture through appropriate automatic muscle activity because of neuromuscular or musculoskeletal dysfunction. Function is restored by treatment of components such as range of movement, strength and endurance. Alternatively, artificial supports can be provided to substitute for lack of postural control and to provide the most efficient positions of the body for functional activity.

Two developments that have influenced the field of occupational therapy in early childhood intervention in particular, are the seminal works of *Jean Ayres* in *Sensory Integration* and *Karl and Berta Bobath* in *Neuro-development Treatment. As* these two approaches had such a profound influence on early childhood intervention, their development will be described in more detail.

- **Sensory Integration (SI)**

Based on her research into neuro-physiology and sensory integration, Jean Ayres's work, "Sensory Integration and Learning Disorders"[42], gave new direction to occupational therapists' clinical involvement in early intervention. She also made major contributions to the field of occupational therapy with the development of two standardised tests for the assessment of sensory integration, published in 1972 and 1989 respectively. Further contributions to the field included her use of scientific procedures in the description of syndromes such as Tactile Defensiveness, Gravitational Insecurity and Developmental Dyspraxia.[41] Ayres opened up the field of sensory modulation, which has become a major contribution to the occupational therapist in the treatment of children with disabilities.

Ayres's initial theories and research have been updated and revised by Fisher, Murray and Bundy and published in their work "Sensory Integration: Theory and Practice".[43] Numerous research studies, publications and workshops have been inspired by the earlier work of Ayres. These include:

- Clinical checklists and development scales.
- Tests to detect sensory modulation dysfunction in the very young child, developed in later years.
- The "DeGangi-Berk Test of Sensory Integration"[44] for nursery school children, devised and published by Berk and DeGangi.
- The "Test of Sensory Functions in Infants (TSFI)"[45], devised and published by DeGangi and Greenspan.

- **Neurodevelopment Treatment (NDT)**

This approach has evolved and developed since the early 1940's from the therapeutic work with neurologically impaired children, by Berta Bobath, a physiotherapist, and Karl Bobath, a physician. These treatment strategies were based on normal developmental patterns and applied to patients diagnosed with cerebral palsy.[41]

A variety of professionals such as occupational therapists, physiotherapists, communication pathologists can be trained in the use of NDT. Each professional adapts the basic treatment strategies to comply with the specific functions that are emphasised in her field of practice. For the occupational therapist it is of paramount importance to facilitate play and self-care activities with the aid of NDT techniques. Anderson, Hinojosa and Strauch[46] point out that the integration of NDT with play activities can pose a challenge even for the experienced occupational therapist. They regard it as "..... a complex task to try to elicit specific responses through [physical] handling while simultaneously engaging the child in purposeful play activities".[46] It is therefore important that the therapist be well informed and experienced in the theories and application of play in order to engage the child purposefully and at the same time enhance play behaviour.

The South African Neurodevelopmental Therapy Association (SANDTA) and the South African Institute for Sensory Integration (SAISI) have only recently heeded the plea of clinicians, trained in both approaches, for integration. During a National Congress in Cape Town in 1996, the two institutes combined their proceedings for the first time. All indications are that the combination of Sensory Integration and Neurodevelopmental Therapy is more beneficial for treatment in early developmental delays than when applied separately.

In summary, it is important to emphasise that the variety of treatment approaches that the occupational therapist needs to know and master, must be sufficient to effectively intervene in all the performance components and areas which fall within the domain of early childhood intervention. In order to interpret, select and apply appropriate treatment approaches in practice, the therapist should have an in-depth knowledge of biological, behavioural and medical sciences and understand the influence of pathologic processes on function.[13]

3.2.3.2 Application of Theory into Practice

Although theory forms the scientific basis of occupational therapy, a transition from the theory to intervention is needed so as to change dysfunction to function. The occupational therapist uses activities through which principles and techniques, derived from the treatment approaches, are transformed into practical applications. To enhance participation in activities and bring about change in behaviour, activities are therapeutically graded, structured, presented and appropriately adapted. The therapist also uses herself as a therapeutic tool in treatment and her relationship with the child is of utmost importance in the intervention process. The afore-mentioned aspects will hence be discussed:

- **Activities**

Occupational Therapy is primarily concerned with human occupation. The development of the academic discipline of occupational science, instigated by Elizabeth Yerxa in 1981, has enriched the scientific foundations of occupational therapy and has in turn been influenced by the evolution of the profession.[13] Occupational science addresses the form, function and meaning of human occupation. It thus epitomises the essence of occupational therapy, which is primarily concerned with how humans occupy themselves in a productive manner. A study of human activities and the ability to analyse them in terms of their essential characteristics evolve naturally from the study of occupational science and are prerequisites for effective service delivery by the occupational therapist.

In early intervention, the occupational therapist should select a specific task or activity that is culturally relevant, age appropriate, of interest and meaningful to the child. For the young children, play is an automatic and integral part of their lives.[13] All the characteristics that are considered to be important in the therapeutic use of activities are represented in play activities for the child. Simon[13] lists the characteristics of therapeutic activities as being goal directed, having significance and eliciting participation, reflecting life task situations, improving skills and being gradable in terms of levels of complexity. These characteristics are innate in play activities for the child.

Simon adds that, in addition to the above overall characteristics that should be considered for an individual child, qualities specific to each activity should also be analysed to determine its requirements for execution. Task analysis is, therefore, the basic skill that the occupational therapist employs to ensure that the activities she selected for each child will be optimally therapeutic. Activities should never be randomly chosen but always selected with care.

- **Grading**

The occupational therapist's ability to select an appropriate activity and manipulate the complexity level to the child's level of participation is of the utmost importance in order to elicit engagement in the activity. This engagement should give the child a sense of achievement, yet simultaneously challenge improvement of current skills. The therapist can increase or decrease the requirements of an activity and the demands of the task or adapt the environment.

A very important factor that may assist the occupational therapist in the grading of activities is her knowledge of the normal hierarchical development of skills in the developing child. Tasks are then graded in accordance with the sequence in which they are mastered during normal development.[13]

- **Structuring**

In order to enhance the child's participation in tasks and foster optimal functioning, the therapist should specifically structure the therapeutic environment. This involves the positioning of the child, the therapist's manual or bodily involvement, the furniture, apparatus and materials that are being used, as well as the exposition of the activity. Colangelo advises that adaptations to equipment and assistive devices be used to aid the correct positioning of the child if it is required.[41]

Even if all other requirements for effective intervention have been considered, ineffective structuring may still compromise the outcome of therapy. This is a skill that the therapist should apply diligently and if necessary, adapt continuously to ensure that the therapeutic objectives are being achieved.

- **Presentation**

The way in which therapy is presented to the child also plays a vital role in the attainment of therapeutic objectives. In this respect, the therapist also uses herself as a therapeutic tool and, as such, her presentation of herself is very important in the child-therapist relationship. Through the therapeutic relationship with the child, emotional and behavioural components may be addressed and influenced. According to the needs of the child, different attitudes such as playfulness, supportiveness, strictness, etc, could be adopted. It may also be appropriate to exert a certain amount of stress on the child. Williamson, Szczepanski and Zeitlin state that stress "...interpreted as a challenge often is associated with positive, energizing emotions".[41]

As far as the presentation of activities in therapy is concerned, basic principals regarding communication, teaching and learning methods and instruction should be considered in terms of the needs of the child. Practical factors such as time of completion, predictability of results and complexity of the activity should be controlled and adapted during presentation of activities to make it appropriate for the child.[13]

- **Adaptations**

The therapist's ability to bring about adaptations, in order to provide the child with ways and means for independent functioning, is a cornerstone of occupational therapy. Adaptation is the underpinning of the rehabilitative approach to treatment. It includes the adaptation of the client in the environment or the environment itself.

Modifications to the environment can range from simple procedures, e.g. restructuring of a room, to complex procedures such as seating or eating devices. Splints, orthotics and specially designed toys require special skills from the therapist in order to obtain the desired effect for the client. Additional training is often required in these areas. Gorga[38] feels that the application of adaptations in early intervention is particularly effective when they meet the parents' goals. Parents will tend to apply an adaptation more readily when it aids them in handling the child or if it optimises the child's independent functioning.

3.2.3.3 Early Intervention in Various Conditions

The classification of various conditions and terminology vary considerably in the field of paediatrics. Differences are often the result of a particular author's own frame of reference. A detailed discussion of the various classification systems and terminology fall outside the scope of the current chapter. A broader overview of the type of conditions the occupational therapist may encounter will be presented here.

Baloueff[13] uses the term *developmental delay* to refer to a wide range of childhood disorders and environmental situations. She refers to Tjossem's categorisation of three groups of children who either have developmental delays or are at risk for developmental deviations:

- The first group consists of infants with established risk. These would include various syndromes, sensory impairments, etc.
- The second group of infants is at biological risk for the probability of delayed or atypical development. These would include prematurity, low birth weight, etc.
- The third group consists of infants at environmental risk. Although biologically sound, these infants may develop developmental deviations due to depriving life experiences. These could include parental neglect, abuse, etc.

Semmler and Hunter[47] provide specific treatment guidelines to occupational therapists for a variety of conditions not often encountered in other literature on the subject of early intervention. These conditions include congenital anomalies, orthopaedic conditions, acquired head injuries and visual impairment. They also include conditions such as infection control, neonatal therapy, failure to thrive and child abuse and neglect.

Occupational therapists are often in a position where they have to intervene in a child's life without having a specific diagnosis. Having a formal diagnosis assists the therapist in directing the treatment. Without a diagnosis, treatment has to be conducted symptomatically. Clusters of symptoms often constitute a recognisable disorder, such as sensory modulation disorders or developmental dyspraxia. Conditions such as these are seldom diagnosed by the medical practitioner and the detection of these disorders falls mostly within the domain of the occupational therapist. Through the observation of specific behaviour over time the

occupational therapist can assist the medical practitioner in making a diagnosis such as attention deficit disorder and/or hyperactivity.

The occupational therapist will thus be involved in treatment of a child with any condition that will effect development in such a way that it curtails the participation in age appropriate life tasks and activities.

3.2.4 Management

"Historically,the emphasis in occupational therapy has been on treatment aspects of service".[13] In addition to sound intervention skills, the present-day occupational therapist also needs proficiency in management skills for effective service delivery. Hensey and Blanchard define management as working with and through individuals and groups to accomplish organised goals.[48] Perinchief mentions four main functions of management namely organising, planning, directing and controlling.[13] Scott adds motivation as a fifth important function.[48] All occupational therapists, to a greater or lesser extent, are expected to perform these functions as part of their administrative tasks and should therefore be trained to become proficient managers.

Marketing and fiscal management are of utmost importance in a competitive society or in circumstances where funds are already limited. These are specialised fields in themselves, and are usually the responsibility of the managers, but all occupational therapists need to have at least a basic understanding of the principles of marketing and fiscal management to be effective in their service delivery.[13]

Effective communication skills play a pivotal role in management. Perinchief[13] stresses the importance for therapists working in the health care system to understand issues surrounding communication. In the transdisciplinary team context (refer to 2.3), the occupational therapist could be the primary service co-ordinator in case management. In this supervisory role, effective communication skills are also of cardinal importance. Ernistine describes the responsibilities of the primary service co-ordinator as "...the co-ordination and monitoring of services across various service providers and the planning and integration of all resources and supports".[18] The primary service co-ordinator is also the professional who liases frequently

with the family and develops a trusting relationship with the parents. The responsibilities of the therapist in the role of a primary service co-ordinator, therefore, require efficient managerial and communication skills.

Two other aspects that the occupational therapist needs to consider in service delivery are those of legislation and ethical conduct. Johnson states that "Many aspects of an occupational therapist's work have their roots in legislation and, depending upon her specialization, the therapist must have a working knowledge of those statutes".[49] South Africa's national policy on matters concerning the child was discussed in 2.5.2 and therapists who are involved in early childhood intervention should be well informed about the strategies, programmes and services on a national level.

The Health Professions Council of South Africa, as well as the constitution of the Occupational Therapy Association of South Africa, describes the code of ethics for occupational therapy. Ethics evolve around the issues of beneficence and autonomy of the client, the competency of the service provider, the policies of the occupational therapy association, advertising, collaboration and teamwork, and professional conduct in general.[13] These issues should be considered during management and strict adherence to the code of ethics is essential for quality of services and lawful practice.

Efficacy in management is as important as excellence in intervention strategies to ensure that service provision is of a high standard and truly serve the child. In the case of early intervention, where the child is still a minor, it is the parents, or primary care-givers, that must be regarded as the clients who should be satisfied with the quality of service that is provided.

3.3 Curriculum Development and Training

3.3.1 New Directions for Training in Early Childhood Intervention

Traditionally, occupational therapists have served infants and pre-schoolers in institutional settings using a medical model of care. "The focus on individual disability, with minimal considerations of the role of family and environment on adaptive behaviour, has limited the scope and function of occupational therapy in the intervention process".[14]

The focus of services and programmes for young children have undergone marked changes and the essence of early childhood intervention has shifted from the medical model to a social model. An adequate knowledge base in family systems, educational aspects of programming, community- and home-based services and development of multidisciplinary teams is essential for long term service delivery in the future.[50]

Schaaf and Gitlin[14] refer to the findings of the Philadelphia Country survey that indicated a need for occupational therapists to move beyond traditional intervention approaches to meet the changing demands of the early intervention system. Three themes for the future emerged from this survey:

- The need for therapists to work in a consultative and collaborative structure with families, teachers and other persons involved with the child.
- The need for therapists to be skilled in small group processes in order to communicate across disciplines and to function effectively in a team.
- The need for therapists to actively consider and incorporate the individual's family, environment and culture in the assessment treatment and planning process.[14]

In the conclusion to their paper, Schaaf & Gitlin[14] stated that changing trends in early childhood intervention clearly identify new roles for occupational therapists in community-based service delivery and that advanced training is needed for therapists to function effectively in this capacity.

Another area of practice that has come under the limelight in the past few decades, is the neonatal intensive care unit (NICU). The focus on prevention, and the growing population of children with developmental delays, partly due to a higher survival rate after birth, has brought the role of treatment in the NICU under the attention of professionals.[51]

In 1993 a number of NICU related presentations were delivered at the AOTA Annual Conference in Seattle and were well attended.[52] One factor that contributed to this interest was the proliferation of hospitals in the U.S.A. requesting occupational therapy services for the NICU's.

Efficiency studies have shown that early development intervention, beginning in the NICU, has been effective in improving the developmental outcome of the at-risk infants. Hyde et al. emphasise the importance of early environment as follows: "The effect of the environment both in the neonatal period and in the first few years of life is increasingly being recognised as a major contributing factor in long term development".[51]

The NICU is considered an advanced area of practice and as a result requires specialised and advanced training for the occupational therapist involved in service provision in NICU.[53] Anzalone is quite clear about the importance of specialised training when she states that, "The knowledge, skills, and clinical reasoning required for safe, ethical, and effective occupational therapy practice in that setting demand a clinician with abilities far beyond that of the generalist".[52]

The occupational therapist's emerging role over the last decade in the NICU has posed unique challenges because ".... common paediatric occupational therapy concerns about muscle tone, head control, proper positioning, sucking, sensory integration, and motor behaviour must now be considered within a highly technical environment".[54] They feel that this setting also challenges the occupational therapist to new theoretical understandings about how an infant's earlier experiences lay the foundation for later development.

Holloway[55] regards one of the major roles of the occupational therapists in the NICU to be the incorporation of the parents in the care of the infant. Medical personnel are often so involved in the intensive care that these infants need to survive that the family's needs are overlooked. The NICU is a very stressful situation for the parents and infant, and the occupational therapist has an important role in the process of alleviating stress for the infant and the family. A family-centred approach to treatment should begin in the NICU with collaboration between parents and therapist regarding the current and future care of their child.

The greater involvement of the occupational therapist in the NICU has also given impetus to the post-hospitalisation treatment of the infant. This part of service provision is commonly known as *baby therapy*, and the occupational therapist has become increasingly proficient in dealing with this age group. Baby therapy is regarded as a specialised service and appropriate post-graduate training, especially in SI and NDT, is regarded as essential in dealing with the at-risk infant in treatment.

Although the evolution of occupational therapy services in the NICU has been slower to develop in South Africa, the contribution of the occupational therapist has been increasingly recognised over the past decade. Training opportunities for this specialised service remain a problem, however. The South African occupational therapists still rely heavily on literature and training provided by colleagues and institutions abroad. The danger of this is that culture specific knowledge and intervention cannot be implemented.

3.3.2 Current Status of Training in Early Childhood Intervention

In order to develop a curriculum for advanced training in early childhood intervention, it is necessary to consider the level of knowledge and skills of qualified therapists in the field. Due to the fact that their current status of proficiency would also have been influenced by undergraduate training, it advisable to consider this basic level of training as well. Research with regard to these aspects will hence be reviewed.

A number of studies have been conducted to look at the status of undergraduate training and the preparedness of new graduates to function in the field of early childhood intervention. Although it is generally acknowledged that this practice area requires skills and training beyond entry-level preparation, certain fundamental knowledge and skills should be present in newly qualified therapists.[56]

Thorp and McCollum suggested three levels of professional preparation for early childhood intervention:[56]

- The first level reflects the general body of knowledge in occupational therapy.
- The second level focuses on knowledge and skills as they relate to services to infants and their families.
- The third level reflects not only a fundamental understanding of the family system and communication skills with the family, but also the ability to function as a part of an interdisciplinary team.

In a study conducted by Humphry and Link[56], where they evaluated 43 undergraduate educational curricula for training within the USA, a lack of specific criteria and hours training were indicated on the second and third of the above mentioned levels of professional preparation. The second part of the study included recommendations of a panel of 9 experts in the field regarding entry-level education for occupational therapists, based on the results of the study. Their recommendations included a primary mission for early intervention, basic competencies needed by the occupational therapist starting work and several curriculum changes. Only the curriculum changes will be recorded for the purpose of this discussion. Those were:

- Greater emphasis on knowledge and skills for work within the family system and the ability to perform assessments that focus on parent-child interaction within the context of activity of daily living and family needs.
- An introduction to the theories and concepts of the interactive models of development of infants and families.
- An understanding of the role of occupational therapy with infants and families and the ability to describe how this integrates with other disciplines and early intervention teams.

- The provision of an opportunity to practise skills for consultation and programme development.
- An appreciation of ethnic, cultural and transcultural concepts and how they affect the service provision and family compliance.
- An understanding of the theory of play and how to incorporate family play into occupational therapy intervention strategies.[56]

In another study Hinojosa, Moore, Sabari & Doctor[57] also expressed their concern about the superficial level of basic occupational therapy training in the specialised field of early childhood intervention. They evaluated the efficiency of a 12-week clinical practical for students in an early intervention programme, combined with didactic programmes at a university. They felt that consistency between clinical and academic role models is a critical factor for ensuring positive reinforcement of content and values advocated in the field. All the students benefited from the combined clinical and academic programme and each student achieved the expected outcome except for experience in the Individualised Family Service Programme. The latter was however, due to limited opportunities.[57]

As under-graduate training generally seems to be insufficient to prepare the newly qualified therapist for the complex and versatile field of early childhood intervention, most therapists rely on continuing educational and on-the-job training to acquire the specialised knowledge and skills that are required.[57]

Hanft and Humphry refer to the need expressed by qualified paediatric occupational therapists for further training in early childhood intervention, following a study done by Lawlor. In this study, the therapists especially highlighted the areas of therapeutic techniques and family dynamics for further training.[10]

In a study done by Case-Smith[58], the following areas were indicated for further training, as it was felt that these are often not dealt with sufficiently in undergraduate training. These are:

- Skills in communication and consultation with team and family members.
- Developmental orientated fieldwork for child evaluation and assessment skills.
- Interpersonal skills for interactions with family members.
- Understanding of service delivery systems within early intervention.

- Use of assistive technology.
- Knowledge of feeding and oral-motor skills.

As was indicated in 3.3.1, the number of occupational therapists working in the NICU has increased over the last decade. In an overview of studies done by Hunter to investigate efficacy, quality and safety of occupational therapy in the NICU, he was alarmed by the results. One of the factors was that 17% of occupational therapists begin neonatal practice with no training or experience in this area. He states that: "Anything less than 100% agreement on the essential nature of these areas (knowledge and skills required for NICU practice) is worrisome because insufficient knowledge and skills may jeopardize infant safety, adaptation and development, and successful integration into the family unit".[59]
He concluded that it was to be hoped that the results of these studies would facilitate a more aggressive and effective effort toward the standard of NICU training and education.

Based on the studies done on the efficacy of undergraduate training and the overall level of competency of qualified therapists in the field of early childhood intervention, it is evident that a curriculum for post-graduate study in this field should take cognisance of these results.

3.3.3 Curriculum Development

Apart from the results of studies on the current status of training, there are other factors that also need to be taken into consideration in the development of a curriculum for advanced education. These are the importance of a link between clinical practice and academic curricula and the training methods that are considered to be effective for further education.

McCluskey emphasises the importance of a strong link between clinical practice and an academic curriculum for training. She mentions that "Academics are often accused of being out of touch with clinical practice".[60] It is, therefore, of paramount importance that surveys on the needs and expertise of qualified clinical therapists are conducted before an academic curriculum for further training is proposed.
Lawlor and Henderson[50] also conducted a study that investigated data on the clinical practice patterns of occupational therapists in the field of paediatrics. In their study a survey was conducted on a sample of 118 paediatric therapists drawn from the AOTA member list

(response rate 99,4%). The mean for the years of experience for the sample was 9.47. The purpose of their study was to gather data for future efforts such as establishing research endeavours, to design quality efficacy studies, to direct educational programmes, and to evaluate theoretical foundations of paediatric occupational therapy. Correlation between the results of this study and the current study will be indicated in Chapter 5. The considerable time lapse between the two surveys, however, needs to be taken in consideration when conclusions are drawn from the two sets of data.

As far as the training methods for further education are concerned, the importance of *multiskilling* and the use of *case studies* are considered.

Multiskilling, especially in the transdiciplinary team, is regarded as important for contemporary early childhood intervention. As was indicated in 2.3.3, the adoption of a policy of cross-training and multiskilling is often not easy for professionals. In a study done by Collins[61], occupational therapists' knowledge of multiskilling and how they believe the addition of skills should occur, were investigated. Collins concluded from the study that only a moderate understanding of multiskilling prevailed amongst the sample. The participants were aware that multiskilling is beneficial to both the occupational therapy profession and the clients it serves, but they were also wary of its potential risks or disadvantages. One aspect of concern was the preservation of the uniqueness of the profession.

It seems evident that the process of cross-training and multiskilling be best embarked upon within the confines of formal further training. Resistance and barriers could more easily be broken down over a period of time when professionals are in close contact whilst they are involved in further education. This would ideally constitute a course where professionals with different qualifications in the field of health services study together. It would therefore be advantageous if cross training could be incorporated into the curriculum for advanced study in early childhood intervention.

In formal further education where problem-based learning is pursued, case studies are a popular educational method. Dolmans, Snellen-Balendong, Wolfhagen, and van der Vleuten report that "Cases are the driving force behind students independent study in problem-based learning".[62] They stress, however, that the extent to which students will benefit, depends on

the quality of cases presented to them. They give seven principles, based on contemporary findings on the nature of learning and cognition. They are:

- The contents of a case should adapt well to students' prior knowledge.
- A case should contain several cues that stimulate students to elaborate.
- A case should preferably be presented in a context that is relevant to the students profession.
- Relevant basic science concepts should be presented in the context of a clinical problem.
- A case should stimulate self-directed learning by encouraging students to generate learning issues and conduct literature searches.
- A case should enhance students' interest in the subject matter, by sustaining discussion about possible solutions and facilitating students to explore alternatives.
- A case should match one or more of the faculty objectives.

These principles should be kept in mind in the development of a problem-based curriculum for further education in early childhood intervention.

3.4 Conclusion

In this chapter, the process of occupational therapy was described in order to provide a basis for the questionnaire that would be used to investigate the training needs and current level of skills of qualified occupational therapists in the field of early childhood intervention. Four major steps in the process were discussed namely evaluation, planning, treatment and management.

Evaluation was described according to the guidelines used by Meisels and Atkins-Burnett.[1] They emphasised the family-centred nature of evaluation, the importance of information sharing, the selection of tests with regard to functionality and practicability and the focus on abilities as well as disabilities in the child. The therapist's skills in observation and interviewing were regarded as being of importance in conducting a successful evaluation. Re-evaluation is a continuous process for assessing the effectiveness of treatment outcomes.

Planning included the setting of the goal of treatment and the consequent aims and objectives of treatment needed to reach the goal. Aims of treatment are formulated in terms of performance areas, which in the case of the young child constitute activities of daily living and play. Objectives of treatment are formulated in terms of occupational components, which should be remediated in order to provide the foundation for skills to be developed in the performance areas.

Treatment necessitates the knowledge of a variety of theories and approaches, which form the scientific foundation for the therapeutic use of activities. Other aspects that enhance the use of activities are the manner in which they are graded, structured, presented and adapted to fit the needs of a specific child. The therapist's use of herself as a therapeutic tool was also indicated. Occupational therapy is applied in various conditions and in the absence of a specific diagnosis, symptomatic treatment is often indicated.

Management constitutes the running of an effective service in the particular setting of employment. The responsibilities of the primary service co-ordinator in case management within the context of the transdiciplinary team were mentioned in addition to the general functions of management. The importance of legislation and ethical conduct were indicated in relation to management.

In the section on curriculum development and training, new directions in training, the current status of training, the link between clinical practice and an academic curriculum, and educational methods were considered.

New directions suggested that therapists change from adhering to the medical model to a social model of practice where the family becomes the focus point of intervention and the ecological context in which the family functions, is regarded as of utmost importance. The emphasis on prevention and very early intervention has also highlighted the importance of the NICU in the past few decades. The role of the occupational therapist in the NICU was discussed and it was emphasised that this is a specialised area of practice, which requires additional training in order to deliver a safe and efficient service.

A review of research studies on the current status of undergraduate training in early childhood intervention indicated that therapists are not sufficiently equipped to deal with this

specialised field without some sort of further education. In a study done by Lawlor, therapists indicated workshops as their preferred training format should they not embark on formal education.[10]

In formal further education, it was regarded important that a link should exist between clinical practice and the development of an academic curriculum. The research for the current study involving clinical therapists would serve the purpose of combining clinical and academic information to develop a training curriculum.

Due to the inherent resistance to, and lack of know how of, the process of cross -training and multiskilling, it was considered to be advantageous to include these into the curriculum for further education. Giuffrida and Kaufman concluded that to "...meet the challenge of adequately training professionals in a continuously changing health care environment, instructors can enhance conventional educational strategies by supplanting them with more innovative interdisciplinary models".[63] This objective would be met in the curriculum of the proposed M ECI where different professionals would train together to become specialists in the field of early childhood intervention.

Dolmans, et al.[62] indicated the significance of case studies as an educational method in problem-based education. They pointed out that specific principles must be adhered to in the formulation of cases in order for students to benefit maximally by this method.
Case studies are one of the major educational media to be used in the proposed M ECI. As such, it is therefore important to establish the most effective way of utilising this format of learning.

It would be up to the academics of the University of Pretoria to meet the challenge of developing the new M ECI in accordance with contemporary research results, theories and models and to adapt these to encompass the unique and often precarious circumstances that prevail in South Africa.

3.5 Summary

This chapter dealt with two main aspects namely the occupational therapy process and curriculum development and training.

The occupational therapy process was described in terms of evaluation, planning of treatment, treatment and management. The diversity of the various conditions which the occupational therapist deals with in intervention was pointed out. The importance of sound management skills for effective service delivery was emphasised and the role of legislation and ethics in management was indicated.

In the section on curriculum development, the new directions for training in early childhood intervention were indicated. The current status of training was also reviewed and relevant research studies in this regard were described. The importance of a link between clinical practice and curriculum development was emphasised. As far as the training methods for further education are concerned, the importance of multiskilling and the use of case studies was considered.

Chapter 4

Methodology

4.1 Introduction

In this chapter a description of the methodology used in the research is presented.

4.2 Aim and Objectives of the Study

4.2.1 Aim

A need has been identified at the Centre for Augmentative and Alternative Communication (CAAC) for the development of a specialised, trans-disciplinary Master's Degree in Early Childhood Intervention. **The main aim of the current study is to determine the content of the Occupational Therapy Module for the M ECI**. An important focus in this process was to establish the level of skills of qualified occupational therapists and therefore what the specific training needs of occupational therapists might be.

4.2.2 Objectives

A number of objectives which would form an essential part in establishing a comprehensive training framework in both the theoretical and clinical domains, were identified. These were:

- To determine the existing theoretical knowledge base of occupational therapists working in clinical practice.
- To determine the existing level of skills of occupational therapists in the assessment procedures for early intervention.
- To determine the existing level of skills of occupational therapists in the treatment of children in early intervention.
- To integrate and prioritise the identified needs in order to establish a framework for the proposed curriculum in early intervention.

4.3 Research Design

A descriptive research design was used in this study. Payton[64] defines the purpose of descriptive research "to discover some of the essential characteristics of a particular population as it exists in nature (in situ)". Descriptive research can be divided into subclasses:

- Qualitative research, which studies people, individually or collectively, in their sociocultural context.
- Nominal research, which is controlled observation, often used in case studies.
- Normative research, which defines average or typical characteristics of a given sample.
- Historical research, which focuses on past events rather than on the present.
- Developmental research, which describes a sequence of events over a long period of time.

The normative descriptive research design was appropriate for this study because the average and typical characteristics of the sample were required to draw conclusions on the training needs and skills of the respondents.

Payton further states that the two major methods for all the subclasses of descriptive research are the survey and the case study. He defines the survey as research "that exposes the sample to a predetermined set of questions, the answers to which can be quantified with descriptive statistics".[64] A survey method of gathering scientific data for the study was employed because descriptive statistics on the required data was needed.

Fowler[65] gives a clear breakdown of the characteristics of the survey:

- The purpose of the survey is to produce statistics, that is, quantitative or numerical descriptions of some aspects of the study population.
- The main manner in which to collect information is by asking the subjects questions; their answers constitute the data to be analysed.
- Generally, information is collected about only a fraction of the population, that is, a sample rather than from every member of the population.

Survey instruments for gathering the data include questionnaires, interviews, rating scales and checklists.[64] In this study the questionnaire was selected to provide the required data on the training needs and skills of occupational therapists with regard to early intervention. The advantages of reaching a larger population situated in a widespread area in a specified time frame at a reasonable cost were considered to be the most practical for this study.[65] The anonymity of respondents when answering a questionnaire, in contrast to the interview, was also felt to be important in this study. Respondents might feel threatened by revealing their limitations in their knowledge and skills in personal contact with the researcher. One of the disadvantages of the questionnaire that is sent by mail, is the tendency to be non-response. Fowler[65] states that, without applying other follow-up procedures, the response rate on the mailed questionnaires is likely to be less than 50%. The researcher had to consider this and implement counter methods in order to obtain the optimal response rate.

4.4 Sample

In order to achieve a representative sample, the official list of qualified Occupational Therapists, registered at the Occupational Therapy Association of South Africa (OTASA), was used to extract the research sample.

4.4.1 Selection Criteria

From the national list, only the occupational therapists practising in the field of paediatrics in the Gauteng, Northern and North West Provinces were included in the sample.

According to Fowler[65], a sample should, as closely as possible, approximate the characteristics of the population. The three selected provinces were felt to reflect the characteristics that would be encountered in other parts of the country.

These characteristics were:

- Human diversity.
  The number of therapists working in the field of paediatrics is large enough to give representation to a variety of characteristics such as race, gender, age group, years experience in the field, etc.

- Institutions of employment.
  Hospitals, special schools, clinics, private practices, institutions for disabled children, children's homes and educational institutions are represented in these provinces.[29]

- Educational institutions for occupational therapy.
  The University of Pretoria and the University of the Witwatersrand are in Gauteng and the University of Medunsa is in North West Province. If it is hypothesised that a large portion of therapists in these areas would have been trained at an university close by, there is still a variation in possible educational institutions and curricula present.

- Ecological context.
  Communities varying from affluent to very poor and urban to rural areas are represented in these provinces.

4.4.2 Selection Procedures

An area probability sampling was used to select the three provinces for the study. According to Fowler[65], this approach is used when a total land area is divided into exhaustive, mutually exclusive sub-areas with identifiable boundaries and a sample from these sub-areas is selected.

The term *subjects* will be used for the therapists who were included in the sampling process and the term *respondents* will be used for the therapists who responded to the questionnaire. The term *participants* will be used for the therapists who took part in the pilot study.

In order to select the final sample, a simple random sampling was used.[65] The following steps were implemented:

- An address list of the occupational therapists, registered at OTASA and practising in the field of paediatrics, was obtained from the Occupational Therapy office in Pretoria. Only those occupational therapists registered and working in Gauteng, Northern and North West Provinces were included in the working list.

- All 26 occupational therapists from the Northern and North West Provinces were included in the preliminary sample. In consultation with the statistician, it was decided that a more equal representation of the three provinces could be obtained if a preliminary selection for these two provinces was not made at this stage of sampling.

- From a total of 194 registered therapists in Gauteng, 97 were drawn from the list for inclusion in the preliminary sample. This was done by a systematic selection of even numbers, starting at no 2 and selecting even numbers on the list.

- The subjects on the preliminary list were then contacted telephonically and asked whether they were willing to complete the questionnaire. This was done in order to explain the importance of the study and to obtain a commitment for participation. This served as a counter measure against the problem of non-response to mailed questionnaires.[65] Anonymity was guaranteed during the conversation with the subjects..

The response to the telephonic contact was as follows:

Northern Province:

- Total in the preliminary sample was 16.
- 15 subjects agreed to participate in the project.
- The one subject indicated that she was no longer working with children and was thus not available.

North West Province:

- Total in the preliminary sample was 10.
- All 10 subjects agreed to participate in the project.

Gauteng Province:

- Total in the preliminary sample was 97.
- A total of 75 subjects was still needed for the final sample of 100 subjects.
- Of the subjects that were followed up, 9 could not participate. The reasons were as follows:
  - Two subjects had emigrated.
  - One subject had left employment and her current address was unknown.
  - Three subjects were erroneously included in the OTASA list and were not working in the field of paediatrics.
  - One subject works only with older children.
  - One subject was on holiday.
  - One subject had retired and felt that it was not appropriate to participate.
  - Out of the original 97 subjects from Gauteng Province, a total of 84 subjects was contacted, from which the remaining 75 subjects, needed to reach the total sample of 100, were obtained.

4.4.3 Description of the sample

The exposition of the final sample is displayed in Table 3:

Table 3. Exposition of sample.

Provinces	N
Gauteng	75
Northern Province	15
North West Province	10
Total subjects	100

4.5 Research Materials

A questionnaire had to be developed in order to ascertain the skills and training needs of occupational therapists in early childhood intervention.

4.5.1 Development of Questionnaire

Fowler[65] suggested several steps in the designing and evaluating of survey questions, which were followed in the development of the questionnaire. These steps are displayed in Table 4.

Table 4. Steps followed in the development of the questionnaire.

Preliminary design steps:	**Literature references:**	**Results:**
Focus group discussions	Discussions with focus groups about the relevant issues to be studied are recommended to ensure that questions address the issues at hand. "The primary purpose of these discussions is to compare the reality about which respondents will be answering questions with the abstract concepts embedded in the study objects".[65]	It was imperative that the current study followed the same rationale as that employed by the committee responsible for the development of the Master's degree in Early Intervention. To attain this objective a seminar programme, presented by the Centre for Augmentative and Alternative Communication (CAAC) during 2000, was attended. This enabled the researcher to design questions that would generate data, which could contribute to the development of the curriculum of the proposed degree. At the beginning of this phase, a

Preliminary design steps:	**Literature references:**	**Results:**
		layout of relevant issues was drafted for the research proposal (refer to Appendix A for layout).

Drafting questions	A literature review is to be conducted to ensure that relevant theories and results of previous studies are taken into account in the drafting of preliminary questions.[65]
	
	From the definitions of early childhood intervention reviewed in 2.2, the following main aspects were identified:
	• Teamwork
	• Family-centred intervention
	• Ecological context
	
	From the literature review on the occupational therapy process (refer to 3.2) and previous research studies (refer to 3.3) the main aspects in assessment and treatment skills
		Preliminary questions were formulated and the significance of each question was evaluated, keeping in mind that the contribution of this study was specifically aimed at providing input into the specialised module for occupational therapists.
		
		A list of questions were compiled under the following headings:
		• Biographical information
		  • Years experience
		  • Experience in age groups
		  • Fields of practice
		• Theoretical framework for EI
		  • Background knowledge
		  • Family-centred intervention
		  • Teamwork
		  • Community involvement
		
		A list of questions was compiled under the following headings:
		• Assessment in early

Preliminary design steps:	Literature references:	Results:
	were identified.	intervention • Screening and observation • Identification of disorders • Family-centred assessment • Functional assessment • Interpretation and documentation • Developmental tests and surveys • Treatment in early intervention • Approaches and techniques • Conceptual formulation • Performance components • Specific disorders • Principles and adaptations • Assistive technology • Family-centred treatment • Communication in counselling • Building resilience in the family • Handling of sensitive issues • Planning an individualised programme

Preliminary design steps:	Literature references:	Results:
Evaluation of preliminary questions: Cognitive laboratory interviews	"Once questions are in draft form, but before subjecting them to formal field pre-testing, a more formal kind of testing, commonly called *cognitive laboratory interviews,* is a valuable next step".[65] Interviews with co-workers are recommended to test the questions at this stage.	The preliminary questionnaire was presented to the Department of Statistics of the University of Pretoria for evaluation. The original eleven-page questionnaire was deemed to be too lengthy and comprehensive and the necessary changes had to be made. After collaboration with two experienced clinicians in the field of early childhood intervention, the questionnaire was reduced to seven pages with 163 different variables. Changes were also made to increase the clarity and make completion of the questionnaire easier..
Design, format and layout of the questionnaire	Fowler[65] emphasises that a self-administered questionnaire should be self-explanatory. Closed questions are recommended and the respondents should as far as possible only tick choices being made. The layout should be clear and uncluttered. He feels that it is sometimes, however, necessary to provide redundant	Professional assistance was obtained in the final exposition of the questionnaire to ensure accurate completion and coding. Definitions were added where it was deemed necessary and numbering for the respondent, the card and the variables was done. The rating scales were added and the cover letter was drafted.

Preliminary design steps:	Literature references:	Results:
	information: "If people possibly can be confused about what they are suppose to do, they will be."	
Field pretest (pilot study)	Once the survey instrument has been designed and was nearly ready to be used, a field pre-test would be done. Rating forms or interviews could be used for this. Aspects that should be rated are: • Readability • Clarity and consistency • Accuracy of answers[65]	Final approval was obtained from the Department of Statistics for the preliminary questionnaire (refer to Appendix B for Preliminary Questionnaire). The field pre-test (called pilot study in this thesis) is described in 4.5.2.

4.5.2 Pilot Study

4.5.2.1 Aim of the Pilot Study

A pilot study had to be conducted in order to test important factors regarding the questionnaire, namely:

- Whether the cover letter was clear and complete
- The exposition, clarity and completeness of the questionnaire
- The usefulness of the scales used in the questionnaire
- The content of the questionnaire
- The time taken to complete the questionnaire

4.5.2.2 Procedures of the Pilot Study

The procedure followed to implement the pilot study was as follows:

- A sample of convenience[64] of five occupational therapists working in the field of paediatrics was drawn. The following considerations were taken in the selection of the sample:
  - Representation of different institutions of employment, namely:
    - Private practice (participant A)
    - Academic institution (participant B)
    - Centre for Early Intervention (participant C)
    - Hospital outpatient department (participant D)
    - Specialised school (participant E)
  - Availability of respondents for personal contact in an interview
  - Expertise in the field of early childhood intervention

- Consent from all five participants for the pilot study was telephonically obtained. The requirements were explained to them.
- The preliminary questionnaire and a report-back form with instructions were sent to each of the participants (refer to Appendix C for Report-back Form).
- With collection of the report-back form, an interview was conducted with each of the participants in order to get additional feedback.
- Adaptations were made to the questionnaire in accordance with the feedback obtained from the pilot study (refer to Tables 5 – 11).

4.5.2.3 Results

The feedback from the 5 respondents on the pilot study and the subsequent adaptations to the questionnaire are displayed in Tables 5 – 11.

The final questionnaire was submitted to the Department of Statistics and approval was obtained

(refer to Appendix D for the Final Questionnaire).

Table 5: Cover Letter

Participant A	Participant B	Participant C	Participant D	Participant E	Adaptations to the questionnaire

Exposition:
• Use explicit headings in order to orientate the reader immediately to the purpose of the letter
• Use different font- and letter-sizes to improve the readability
• Change the sequence of the paragraphs to improve the flow of ideas
Content:
• It was not clear which students would qualify to attend the specialised module
	Exposition:
	• Use explicit headings in order to orientate the reader immediately to the purpose of the letter
	• Use different font- and letter-sizes to improve the readability
	Content:
	• In order to improve orientation and clarity, indicate the main sections which will be covered in the questionnaire
		Exposition:
		• No comment
		Content:
		• No comment
			Exposition:
			• No comment
			Content:
			• It was not clear which students would qualify to attend the specialised module
				Exposition:
				• No comment
				Content:
				• It was not clear which students would qualify to attend the specialised module
				• Unclear whether the questionnaire would only be distributed to occupational therapists
					Exposition:
					• Headings were introduced. The following were added before the letter started:
					  • Questionnaire
					  • Title of study
					  • Research study for Master's degree
					• A different font was used
					• Important aspects were emphasised by using bold
					• Different letter sizes were used
					Content:
					• It was stated that the results of the questionnaire would be used for a specialised module for occupational therapists as part of the transdisciplinary team
					• The title of the study that was added, indicated that the research was to be conducted on occupational therapists
					• The main sections to be covered in the questionnaire were mentioned in the cover letter

Table 6: Exposition of the questionnaire

Colour coding :

Preliminary questionnaire = Final questionnaire =

Participant A	Participant B	Participant C	Participant D	Participant E	Adaptation to the questionnaire
Spacing: • Spacing after the heading at 1 too large • Spacing of blocks to fill in years and months of experience should be smaller	**Spacing:** • Spacing after the heading at 1 too large	**Spacing:** • Spacing after the heading at 1 too large	**Spacing:** • More options to fill in tests required at 4.4	**Spacing:** • No comment	**Spacing:** • Spacing changed according to the recommendations • Options under 4.4 increased from 5- to 7- options
Print: • Headings must be made more explicit	**Print:** • No comments	**Print:** • No comments	**Print:** • No comments	**Print:** • Headings must be made more explicit • Use different font, letter sizes and bold more often in order to improve readability	**Print:** • Headings were blocked and enlarged • Font was changed and different letter sizes were used to highlight certain aspects
Content and sequence • Requests must be made more explicit • Repeat key word in request in sub-headings to assist attention	**Content and sequence** • Change the sequence 1.1 "Total experience in the field of paediatrics" and 1.3 "Field of	**Content and sequence** • No comments	**Content and sequence** • No comments	**Content and sequence** • No comments	**Content and sequence** • Requests were shortened and more explicit formulations used • The key word in a request, e.g. "skills", was used in all subsequent sub-headings

• Include definitions immediately after the appropriate question to assist in clarity
• The sequence of the sections in 5, "Treatment in Early Intervention" should be changed to facilitate a better flow of content
• Too many and complicated sections and sub-sections give rise to confusion
	practice"				• Definitions were shortened and displayed directly after the question
					• The sequencing in 5 was changed
					• Sequencing in 1 was not changed as it was felt that the total years of experience should precede specific experiences
					• Sections 1, "Biographical Information" and 2, "Community Involvement in Early Intervention" were combined into one section under the heading "Profile of Experience"
					  • It was felt that the original heading concerning biographical information was not applicable for the information that followed
					  • The original 5 sections could be reduced to only 4. Certain sub-sections were also reduced and 2, 2.1, and 2.2 became 1.5 in the final questionnaire

Table 7: Summary of number changes.

Summary of number changes to incorporate section 1 into section 2	
Preliminary questionnaire	Final questionnaire
1 Biographical information 1.1 Total experience in the Field of Paediatric 1.2 Experience in age groups 1.3 Field of practice 1.4 Experience in models of Treatment 2 Community involvement in Early Intervention 2.1 Experience in Human Diversity 2.2 Experience in Community Development	1 Profile of Experience 1.1 Total experience in Field of Paediatrics 1.2 Experience in Age Group 1.3 Field of Practice 1.4 Experience in Models of Treatment 1.5 Community Involvement in Early Intervention

Table 8: Scales employed in the questionnaire

Participant A	Participant B	Participant C	Participant D	Participant E	Adaptation to the questionnaire
• The scale in 4.4, where the therapist has to fill in the various test employed in evaluation, is not applicable The scale in 3, "Theoretical framework for	• No comment	• No comment	• No comment	• The scale in 4.4, where the therapist has to fill in the various test employed in evaluation is not applicable	• All the recommendations were implimented in the questionnaire. Ratings were omitted from no 4.4 and 3 was changed to a Yes/No response

Early Intervention" should be changed to a Yes/No answer. Training required on these aspects need not be rated and a simple Yes/No answer should suffice and simplify this section					

Table 9: Time taken to complete the questionnaire

Participant A	Participant B	Participant C	Participant D	Participant E	Adaptation to the questionnaire
• 3 takes too long to complete	• No comment	• 15 minutes	• 30 minutes	• 15 minutes	• 3 was adapted as described under "Scales used in the questionnaire" • In the revision of the content, all the sections were scanned for possible repetition of items

Table 10: Content of the questionnaire

Participant A	Participant B	Participant C	Participant D	Participant E	Adaptation to the questionnaire
2 Community Involvement in Early Intervention • 2.2 Experience in Community Development: It was difficult to interpret the questions under this sub-section	2 Community Involvement in Early Intervention • It was not clear how these questions are related to the specialised module for Occupational Therapy	2 Community Involvement in Early Intervention • Add: "Working with large groups of clients"	2 Community Involvement in Early Intervention • 2.1 Experience in Human Diversity: "Working in dis-advantaged environments" should be changed to: "Working with disadvantaged clients: • 2.2 Difficult questions to understand and respond to • 2.2 "Refer to resources in the community" should be added	2 Community Involvement in Early Intervention • No comment	2 Community Involvement in Early Intervention • This section was simplified and shortened • Most of the questions that were perceived as being difficult, would relate to issues that would be covered in core modules and was thus omitted • Section 2 was incorporated into section 1 and only relevant experience in community issues that would be familiar to Occupational Therapists was inquired into • The rating for these questions changed to a Yes/No response format • Recommendations of participants C and E for different wording and additions to be included were implemented
3 Theoretical Framework for Early Intervention • No comments	3 Theoretical Framework for Early Intervention • 3.1 Specific theoretical	3 Theoretical Framework for Early Intervention • 3.1 Theoretical content should	3 Theoretical Framework for Early Intervention • No comments	3 Theoretical Framework for Early Intervention • No comments	3 Theoretical Framework for Early Intervention • The following recommendations were not implemented: • "Biomechanical" is

	content should include: • Biomechanical • Neurological	include literature on black children			covered as an approach under 5.1 • "Neurological" would form part of other theories and will not be included on its own These theories are not culture specific and the application thereof for different cultures should be clinically applied during the course
4 Assessment in Early Intervention 4.2 Skills in Functional Assessment Procedures: Change "Using tasks applicable to everyday events and situations" to "Using everyday tasks, events and situations for assessment"	4 Assessment in Early Intervention No comment	4 Assessment in Early Intervention • No comments	4 Assessment in Early Intervention 4.3 Use of Specific Developmental Tests and Surveys: "Norm based tests" should be added	4 Assessment in Early Intervention • No comments	4 Assessment in Early Intervention • All these recommendations were implemented
5 Treatment in Early Intervention 5.1 Skills in the Application of Approaches and Techniques for Treatment: • Add "Baby Therapy"	5 Treatment in Early Intervention • No comment s	5 . Treatment in Early Intervention • 5.1 Skills in the Application of Approaches and Techniques for Treatment: Add Theraplay	5 Treatment in Early Intervention	5 Treatment in Early Intervention • No comment	5 Treatment in Early Intervention • Of the suggestions on possible additions the following were included: • 5.1 "Baby therapy" • 5.6 "Wheel chairs" as an example of equipment for ambulation The following suggestions were not included:

• 5.3 Skills in Treatment of Basic and Functional Abilities:
  • Seen as possible duplication of 5.1
 	
• 5.6 Skills in Adaptation through Assistive Technology:
  • Give an example of Equipment for ambulation
• 5.8 Skills in Management:
		• 5.3 Skills in Treatment of Basic and Functional Abilities:
		  • Add "Emotional development"
		• 5.4. Skills in Treatment of Specific Disorders:
		  • Add: "Temperament"
			• 5.3 Skills in Treatment of Basic and Functional Abilities:
			  • Seen as a possible duplication of 5.4
			
			• 5.4 Skills in Treatment of Specific Disorders:
			  • "Learning disorder" is often diagnosed after the child goes to school
					• 5.1 Play therapy is included and Theraplay is a type of play therapy
					• 5.3 Psycho-social is included and "emotional development" would fall under that heading
					• 5.4 Behavioural and emotional disturbances are included and "temperament" would fall under that heading
					• 5.4 The comment on "Learning disorder" is academically correct, but it is a well known term for occupational therapists and the use of other terminology would probably be confusing
					
					• Possible duplications 5.1, 5.3 and 5.4 were not seen as duplications:
					  • 5.1 asks for skills in treatment in of specific disorders.
					  • 5.3 asks for skills in treatment of

					basic and fundamental abilities • 5.4 asks for skills in treatment of specific disorders Although an overlapping in these areas exist, the emphasis of each one is different. It would also allow for different levels of skills because 5.3 is more basic symptomatic treatment whereas 5.4 entails a holistic treatment of the disorder. In 5.1 a more comprehensive knowledge of an approach is asked which often entails post graduate training. These sub-sections were not changed, but their order in the sub-section was changed to allow for a better flow of thought. 5.3 became 4.1. 5.1 became 4.2 5.4 became 4.3

Table 11: Summary of number changes and headings.

Summary of *number changes* and *wording of headings* in section 5 of the preliminary questionnaire to section 4 of final questionnaire.

5.	Treatment in Early Intervention (4)
5.1	Skills in the Applications of Approaches and Techniques for Treatment (4.2)
5.2	Skills in Planning for treatment (4.4)
5.3	Skills in Treatment of Basic and Functional Abilities (4.1)
5.4	Skills in Treatment of Specific Disorders (4.3)
5.5	Skills in Applications of Principles and Adaptations in Treatment (4.5)
5.6	Skills in Adaptation through Technology (4.6)
5.7	Skills in establishing Therapeutic Relationships (4.7)
5.8	Skills in management (4.8)
5.9	Building Resistance in the Family through facilitation of: Skills in Building Resilience in the Family through facilitation of: (4.9)
5.10	Facilitating the handling of Sensitive Issues/Situations Skills in Counselling of Sensitive Issues/Situations (4.10)

4.5 Procedures

4.5.1 Data Collection Procedures

The following steps were followed in order to collect the data for the research:

- The final questionnaire was mailed to each of the 100 subjects who had agreed to take part in the study.
- A four-week response time was allowed and the questionnaires could be returned either per mail in the self addressed franked envelopes, or faxed to the sender.
- The subjects could use the contact telephone number provided by the researcher to clarify any uncertainties they may have had regarding the completion of the questionnaire.

The response to the questionnaire was as follows:

- One of the respondents informed the researcher that she had been erroneously included in the OTASA list for paediatrics and only worked with adults. The blank questionnaire was returned.
- A final response rate of 87% was obtained. This positive response could be ascribed to the fact that the respondents had been contacted before the questionnaires were mailed. This allowed for personal contact with the respondants and a commitment was obtained from the selected sample. The high response could also be seen as interest by the respondents in the topic of early childhood intervention and a desire to participate in the development of an opportunity for further study in this field.

4.5.2 Data Recording Procedures

The following steps were implemented in the recording of the research data:

- The researcher coded all questionnaires with the appropriate numerical values for the yes/no, as well as the 1 to 4 point rating scales.
- The questionnaire contained only *closed* questions. There were some questions where respondants could add variables, should the aspects already mentioned be insufficient to reflect their experience. They were also requested to fill in the tests used for assessment (3.4). These additions were interpreted and coded by the researcher.

4.5.3 Data Analysis Procedures

The following steps were implemented in the analysis of the research data:

- The completed, coded questionnaires were handed in at the Research Support Section of the Department of Statistics of the University of Pretoria for computerisation. The SAS (Version 8) programme was used to do the statistical

analysis. The initial statistical analysis contained the following data for each of the 163 variables in the questionnaire:

- Frequency
- Percentage
- Cumulative frequency
- Cumulative percentage
- The frequency of missing responses on each of the variables was also provided

- The data spread sheets with computerized raw data and preliminary calculations were handed back to the researcher and checked for possible inaccuracies. All mistakes were marked and the data re-submitted to the Research Section.

- The final results were then presented to the researcher. In order to reflect the data in a concise manner, means were calculated and will be used to convey the results of the research in Chapter 5.

4.6 Summary

In this chapter the research design, materials and procedures for the study were presented. A survey, in the form of a questionnaire, was chosen for its descriptive and quantitative nature in discovering the essential characteristics of the chosen study population.

The sample was described with regard to the selection criteria and procedures and a description of the final sample was given. Written questionnaires were mailed to the subjects in the sample in order to reach a more widespread population, which would represent a variety of factors with regard to human diversity, undergraduate training and types of services in different institutions. In order to ensure the maximum response to the completion of the questionnaire, the subjects in the sample were contacted telephonically in order to obtain a commitment to participate. This method proved to be successful and a positive response rate of 87% were obtained.

The research materials were discussed and the development of the questionnaire was described according to the steps outlined by Fowler.[65] The procedures for the pilot study was explained and the results and consequent adaptations to the questionnaire are displayed in Tables 5 – 11. The final questionnaire was formulated and is displayed in Appendix D.

The data collection, data recording and data analysis procedures were given. The results of the study will be described in Chapter 5, together with a discussion of the significance thereof for the proposed curriculum. A critical evaluation of the questionnaire will also be conducted in order to provide recommendations for similar research in the future.

Chapter 5

Results and Discussion

5.1 Introduction

In this chapter the results of the questionnaire will be presented together with a discussion on the interpretation of the findings. This will address the main aim of the study, which is *to determine the content of the Occupational Therapy Module in a Master's Degree in Early Intervention.* A framework for the proposed curriculum will be presented in Chapter 6.

The results of the research will give consideration to the objectives of the study, which are:

- To determine the existing theoretical knowledge base of the occupational therapists working in clinical practice (5.3).
- To determine the existing levels of skills of occupational therapists in the assessment procedures for early intervention (5.4).
- To determine the existing levels of skills of occupational therapists in the treatment of children in early intervention (5.5).
- To integrate and prioritise the identified needs in order to establish a framework for the proposed curriculum in early intervention (6).

A profile of the *experience of the respondents* in the study was obtained in the first section of the questionnaire and these results will initially be presented (5.2). This data enables comparisons to be drawn between levels of experience and knowledge and skills.

5.2 Profile of Experience of the 87 Respondents

5.2.1 Years Experience in the Field of Paediatrics

The average years of experience of the 87 respondents are 9 years and 4 months with a minimum of 8 months and a maximum of 35 years. This constitutes a wide range of years, which could be considered as representative in a given sample.

The study results on the current status of training in early childhood intervention (refer to 3.3.2) indicated that newly qualified therapists on the whole are not sufficiently trained to deal with the specialised field of early intervention. In the sample for this study, it is evident that newly qualified therapists are, however, working in this field. This strengthens the viewpoint held by authors and respondents of surveys in 3.3.2 that further training should be undertaken in this field, especially by newly graduates.

5.2.2 Experience in Age Groups of Children

In this sub-section the respondents indicated whether they had experience in intervention in different age groups. Responses are indicated in Figure 1.

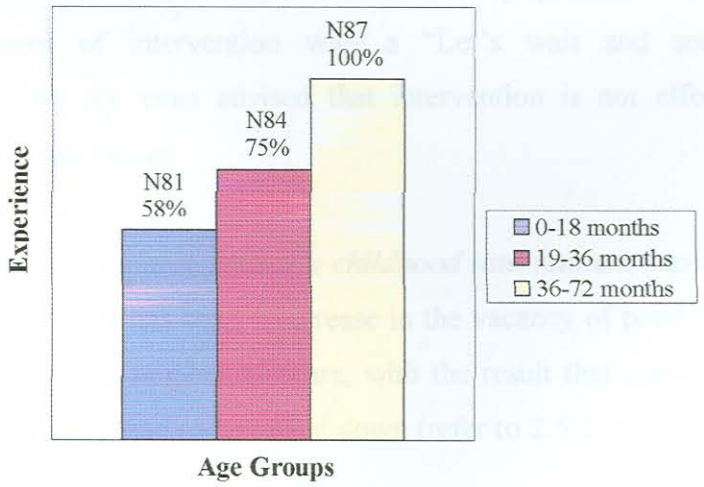

Figure 1: Experiences in age groups

All the respondents had experience in intervention of pre-schoolers but only 58% of respondents had experience with infants. In the study of Lawlor and Henderson[50] in 1989

(refer to 3.3.3) 80.5% of the occupational therapists in that sample from the USA had experience in working with infants. Taking the considerable time lapse between the two studies into consideration, it would seem that occupational therapists in SA have not caught up in the field of early intervention with infants after 11 years. This clearly indicates that very early intervention is not yet common practice in SA, as is the case in intervention with pre-schoolers. This could be attributed to different factors, namely:

- *Early referral is not yet common practice in South Africa and is not reinforced by legislation.* In contrast to the Public Law that was adopted in 1986 in the USA, which mandates early intervention services for infants and young children who have, or are at risk for, developmental problems[15], the national policy in South Africa does not yet reinforce the early referral of children by law (refer to 2.5.2).

- *Lack of knowledge concerning the benefits of very early intervention among professionals who are dealing with infants in hospitals, primary health care clinics and private consulting rooms.* In spite of research results of the past 25 years, which indicate that early intervention is effective[8], in the researcher's own clinical experience there are still a large number of physicians who are of the opinion that early intervention is unnecessary. Parents often report that they were advised by physicians to delay the commencement of intervention with a "Let's wait and see" attitude. Sometimes they are even advised that intervention is not effective and a waste of time and money.

- *Lack of services available for early childhood intervention, especially in the public sector.* There has been a increase in the vacancy of posts in the public sector over the past number of years, with the result that services that were previously available, had to be scaled down (refer to 2.5.2.2). [29]

- *Lack of training and competence in therapists dealing with infants.* Research studies, as were indicated in 3.3.2, indicated that under graduate training do not prepare therapists sufficiently for the field of early intervention and that,

unless further training is pursued, therapists are not always competent in dealing with the young child.

It seems, therefore, imperative that therapists in SA should become as experienced in intervention with infants as they seem to be with pre-schoolers.

5.2.3 Experience in Fields of Practice

In this sub-section respondents indicated in which fields of practice in paediatrics they are working or have previously worked. Responses are indicated in Figure 2.

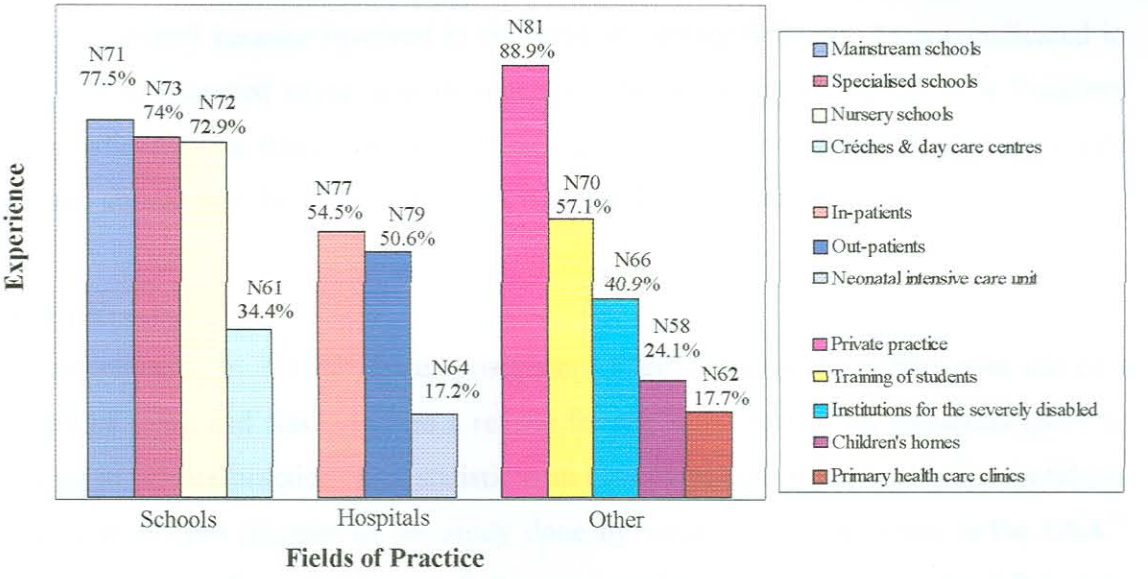

Figure 2: Experience in fields of practice

- **Schools**

  A high percentage of respondents have been/are working in mainstream (77.5%), specialised (74.0%) and nursery schools (72.9%). A considerably lower percentage (34.4%) of respondents have been/are working in crèches or day care centres. This correlates with the tendency that the younger the age group, the less experienced respondents were (refer to Figure 1).

  The bureau of marketing research of UNISA[66] indicate a total of 5 548 120 children in South Africa to be under the age of six years. Although it is to be expected that a large

number of these children would not necessarily attend crèches or day care centres and could thus not be reached through these venues, a considerable number of children would be located there. Together with the children who are already being seen in the nursery schools, it would be desirable for a higher percentage of therapists to be also involved in these centres. In this way, young children could be screened and treated before they even reach nursery school age.

- **Hospitals**

  An average percentage of respondents have been/are working with in-patients (54.5%) or out-patients (50.6%), but a considerably lower percentage were indicated with experience in the NICU (17.2%). Referring back to the discussion on the development and importance of service delivery in the NICU in 3.3.1, it is imperative that more therapists should become involved in this area of service delivery. As was indicated in 3.3.3, this is regarded as an area in which advanced training is needed. It is therefore clearly indicated that this is one of the major areas for further training on a postgraduate level and should thus be included in the curriculum for the Master's Degree.

- **Private Practice**

  As was indicated in 2.5.2.2, fewer posts were filled in the public sector over the past number of years and this could be a reason for the high numbers of therapists (88.9%) working in private practice. This statistic is in direct contrast to the 5.1% of respondents working in private practice in the study done by Lawlor and Henderson in the USA[50] (refer to 3.3.3). The time lapse of the two studies must, however, be taken into consideration and it is therefore not possible to estimate what the correlation would have been should their study have been conducted at present.

  The standard of service delivery in private practice is generally considered to be high, but this service is mostly inaccessible to a large percentage of the population, due to lack of transport or funds. Some practices offer services at a lower tariff to the less privileged members of the population in both school settings and in other institutions. These are, however, mostly limited to larger urban areas. The rural areas, where large populations in need of services exist, are mostly without services from either the public sector or from therapists working in private practice.

- **Primary Health Care Clinics**

In spite of the emphasis in the National Health Policy in SA on prevention through primary health care (refer to 2.5.2), few respondents (17.7%) are/were located in these clinics where the larger part of the population are being seen on a day to day basis. Opportunities for early screening and treatment, which should ideally commence in the very early years, are being missed, due to the lack of appropriately trained personnel working in these clinics. Members of the transdisciplinary team for early intervention should be involved in these clinics for early identification of at-risk children. Furthermore, primary health care clinics are a valuable setting for gaining professional experience in issues such as multiculturalism and family-centred intervention as well as an ideal opportunity for transdisciplinary training between members.

- **Institutions for the Severely Disabled**

The lower percentage of respondents (40.9%) who were involved in institutions for the severely disabled indicate the lack of treatment available to these children. Due to the fact that severely disabled children are also treated in other settings such as specialised schools, where 74% of respondents are/were involved, a larger number of severely disabled children would receive therapy. In Table 19, however, it is indicated that the respondents experience below-average skills in the treatment of neurological disorders. This seems improbable, because most children are admitted to special schools due to neurological conditions and it would be expected that respondents would feel more experienced and confident in dealing with severe disability.

- **Children's Homes**

The low percentage of therapists (24.1%) involved with children's homes is to be regarded as a major problem. These children, coming from deprived and traumatic backgrounds, would all be in need of early intervention. Lack of funds to afford services in private practices would exclude them from intervention, unless it could be provided via the public sector or by institutions themselves.

Children's homes would be an ideal setting for fieldwork for therapists who are enrolled for the Master's in Early Childhood Intervention. For instance, one of the areas in which the respondents indicated a lack of experience was working with large groups of clients

(refer to Figure 4). Groupwork is important when few personnel are available to deal with a large part of the population. Training of students in this regard could ideally be done in children's homes.

- **Training of Students**

  Slightly more than half (57.1%) of the respondents have experience in training of students. Having been in training would indicate that these respondents have a certain theoretical knowledge base as well as experience in conveying their knowledge and skills to other people. This is an important skill for aspects such as multiskilling, educating the community, advocacy, etc. In Figure 4, however, only 48.1% of the respondents indicated experience in educating the community. This would, therefore, seem that it could not be assumed that further training in the skill of conveying knowledge would not be necessary in the proposed curriculum.

- **Home Environment**

  The home environment was not indicated in the questionnaire as a specific area of practice. In retrospect, it is regrettable that a mean for the sample cannot be obtained for this field of practice. In the open section provided in the questionnaire, two respondents indicated that they are/were involved in treatment in the home environment. In the study done by Lawlor and Henderson[50] (refer to 3.3.3), 52.5% of the sample was involved in part-time treatment in the home environment. In the contemporary move towards family-centred intervention, (refer to 2.4.1) the home environment would be an ideal situation for fostering family involvement and creating an individualised programme for the child.

In conclusion, the low percentages of respondents involved in crèches/day care (34.4%), neonatal intensive care units (17.2%) and primary health care clinics (17.1%), contribute to the perception that these settings, although ideal for very early identification and intervention, are not being utilised maximally for this purpose in South Africa.

In retrospect it is regrettable that respondents were not asked to differentiate between *previous experience* and their *current field of practice* in the questionnaire. In this way a distribution profile of the respondents' current areas of employment could have been

compiled. This could have been significant in determining where the greatest needs for services, as well as training, are at present.

5.2.4 Experience in Models of Teamwork

In this sub-section respondents indicated their experience in working in different models of teamwork. Responses are indicated in Figure 3.

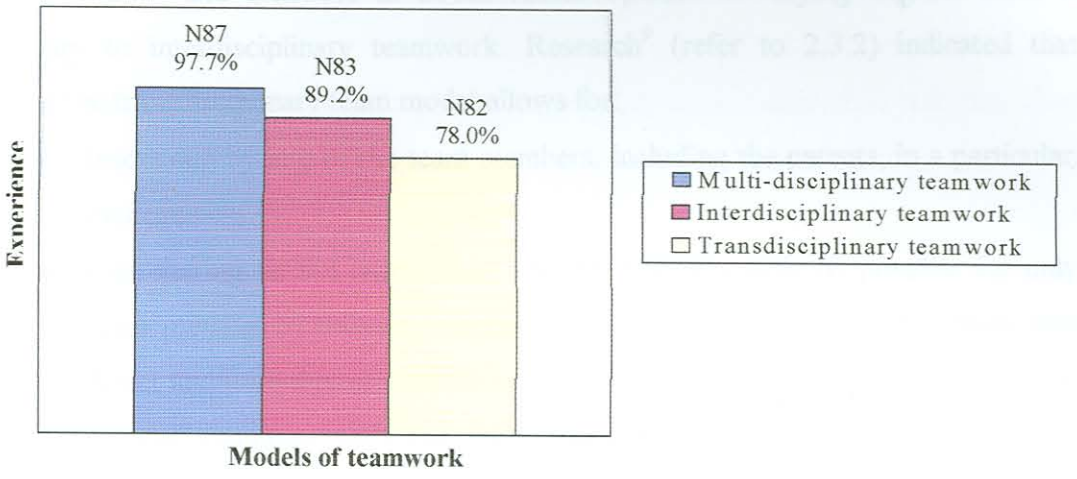

Figure 3: Experience in models of teamwork

The researcher has reason to doubt the accuracy of the high response obtained for experience in a transdisciplinary teamwork model. It seems possible that, in spite of descriptions included in the questionnaire, the difference between the first two models and the third one in practice could have been open to misinterpretation. This opinion is deduced from the fact that few practices in South Africa are conducive to transdisciplinary teamwork, as will be explained below.

The researcher formulated the following descriptions from the literature (refer to 2.3.2) for the questionnaire:

- **Multi-disciplinary** teamwork entails independent intervention from other team members, yet acknowledge their role and referring clients when necessary.

- **Interdisciplinary** teamwork entails independent intervention from other team members, but with shared responsibility and regular collaboration for formulating goals and providing a co-ordinated programme for therapy.
- **Transdisciplinary** teamwork entails intervention across disciplinary boundaries (role and skill sharing) and in close collaboration with other team members (including parents) to provide a fully integrated programme.

Most institutions and practices in South Africa operate in varying degrees from multi-disciplinary to interdisciplinary teamwork. Research[9] (refer to 2.3.2) indicated that the nature of the transdisciplinary team model allows for:

- leadership by any of the team members, including the parents, in a particular case management.
- role sharing to the extent that, should it be advisable or possible for only one team member to provide intervention for a period of time, other team members direct and train the responsible member to work across disciplinary boundaries.
- regular meetings with the team members involved in the case to evaluate outcomes and reformulate action plans.
- allowing the parents (and family) to take a very active part in the management of the intervention.

Although some elements of the above requirements may be present in varying degrees, intervention in South Africa seldom adheres to all of these. There are several possible reasons for this, for example:

- Fragmented services that prevail in SA, as was indicated in 2.5.2.1 and confirmed by various stake holders who attended the seminar programme presented by CAAC for the development of the proposed Master's Degree.
- Absence of team members due to economic reasons and inefficient professional-client rate in SA (refer to 2.5.2.2).
- Hesitancy of team members to share professional knowledge and a strong tendency to cling to role identity (refer to 2.3.3).
- The use of traditional models of teamwork and the upholding of the viewpoint that the medical practitioner is the leader of the team, still prevails to a large extent (refer to 2.3 and 2.4).

- Although therapists are more aware of the role of the family in case management and are willing to incorporate them more actively, parents are still mostly regarded as receivers of the service rather than leaders of the professional team (refer to 2.4.3).
- Family-centred institutions and services found in first-world developed and affluent countries[3], are not commonly available in South Africa (refer to 2.3.5). Responsibility for the development and maintenance of these should be taken on at a national level and are only possible if funds are available.

As far as the proposed Master's Degree is concerned, other means than referring clients to most of the current settings and practices will have to be found to bring team members closer to implementing a transdisciplinary team model.

5.2.5 Community Involvement in Early Childhood Intervention

In this sub-section respondents indicated experience in different kinds of involvement in the community. Responses are indicated in Figure 4.

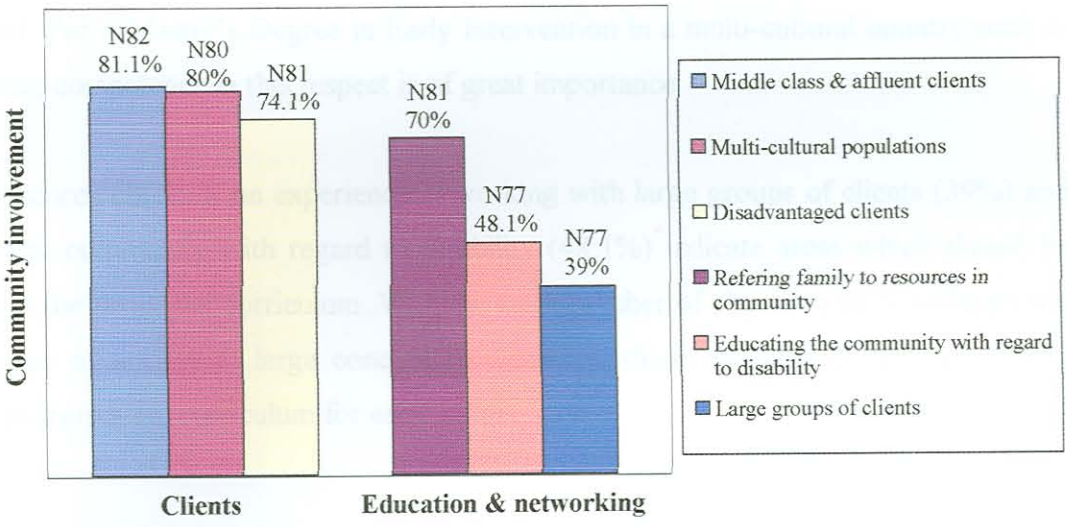

Figure 4: Community involvement in early childhood

Despite the description of the term *community* provided in the questionnaire, the researcher again came to the conclusion that some respondents misinterpreted the concept of community. This is deduced from the fact that there were a number of respondents who did not complete this section at all, which could indicate that they do not regard themselves to be

working in any kind of a community. As was indicated in the discussion in 2.5.3, there appears to be a lack of clarity on the use of terminology with regards to community issues.

The researcher formulated a description from the dictionary definition of *community* (refer to 2.5.3) for the questionnaire, which stated that a "... community is regarded as a group of people living and fulfilling their life tasks in a given area, regardless of economic class". The researcher hypothesises that in a South African context, many therapists associate the concept of "community" automatically with that part of the population who are regarded as previously or currently disadvantaged. It would, however, in most instances also refer to the lower socio-economic classes or underdeveloped populations. Very often these classes and populations are considered to be found mostly in the rural areas of South Africa. It is important for therapists to regard themselves as always functioning within given communities and to take cognisance of the ecological context (refer to 2.5.1) of that community in order to deliver a truly family-centred service to their clients.

Of further interest in the specific results, is the high rate of experience (80%) indicated in working with multi-cultural populations. Unfortunately, information was not required on the variety of different cultures they encountered or the level of competence that the respondents experienced. For a Master's Degree in Early Intervention in a multi-cultural country such as South Africa, competence in this respect is of great importance.

The lower scores obtained on experience in working with large groups of clients (39%) and educating the community with regard to disability (48.1%) indicate areas which should be addressed in the proposed curriculum. With the large number of clients to be considered and the ignorance of society at large concerning disability, these should become major focus areas in a postgraduate curriculum for early intervention.

5.3 Theoretical Framework for Early Childhood Intervention

In this section respondents were asked to indicate whether they required further training on specific theoretical content.

As was indicated in Table 8, responses were originally rated on a 4-point scale ranging from no need to great need. After the pilot study the scale was changed to a yes/no response. The feedback that led to this change was that a yes/no response would simplify this section and that a positive or negative response would suffice in indicating training needs.

In retrospect, this change was unfortunate in so far as it appeared that respondents felt hesitant to indicate a negative response due to the belief the fact that "further training is always desirable". This type of comment was indicated on various questionnaires that were received. A rating scale would have indicated the proportion of the need for further training as pertaining to the different aspects that were covered in the questionnaire.

The response to this section, as such, indicated a significant need for revision or further training on certain aspects. A percentage of between 50–74 positive responses would constitute a clear need, and between 75–100 an explicit need for further training, respectively.

5.3.1 Training Needed on Specific Theories

In this sub-section respondents indicated further training needs on specific theories. Responses are indicated in Figure 5.

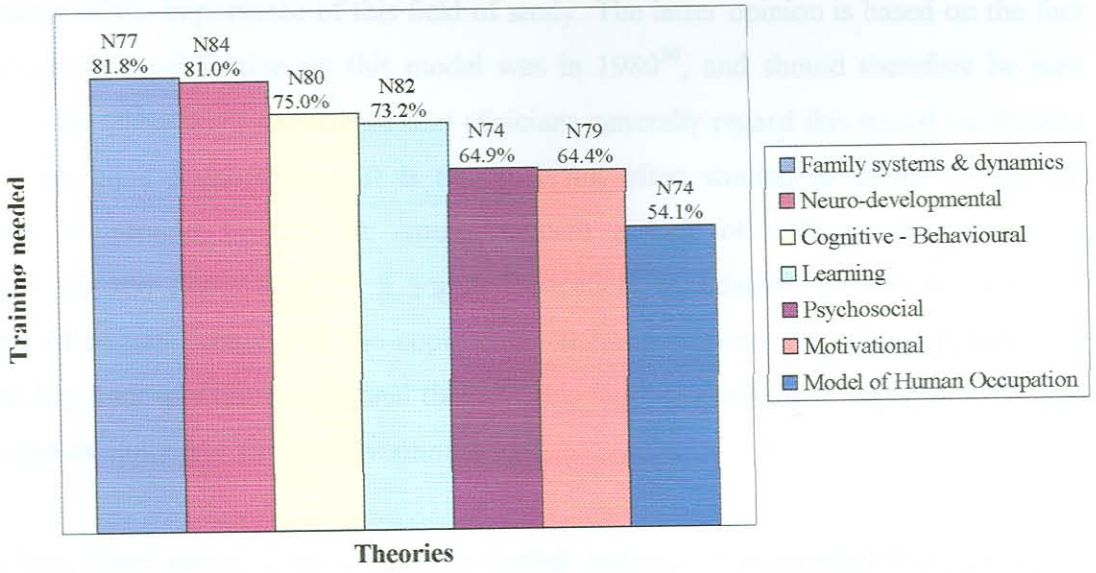

Figure 5: Training needed on specific theories

The concept of family-centred intervention is a contemporary development (refer to 2.4.3 and 3.3.1) and is only beginning to be incorporated into practices in South Africa. The positive response (81.8%) for further training in this respect underscores the concern in this regard expressed by clinicians[22] as was discussed in 2.4.3. Comprehensive study on family systems and dynamics has not traditionally been included in undergraduate curricula as was indicated in 3.3.2. The need for further training could, therefore, be regarded as a contemporary need of therapists to gain more knowledge about the family, as their understanding of the importance of a family-centred approach increases.

An explicit need for further training (81%) was indicated in neuro-developmental theories. Hopkins[13] points out that many treatment approaches and skills are based on developmental processes and theories. These theories have been considered as a cornerstone of occupational therapy for many decades. As such, the significant training need indicated for developmental theories should be addressed in a further study.

Explicit needs were also indicated for further training in cognitive-behavioural (75%) and learning (73.2%) theories while a clear need was expressed for psychosocial (64.9%) and motivational (64.4%) theories.

The relatively lower need (54.1%) indicated for information on the Model of Human Occupation may indicate either sufficient knowledge of this theory, or else a lack of understanding of the importance of this field of study. The latter opinion is based on the fact that, although first publication on this model was in 1980[30], and should therefore be well known, it is the researcher's experience that clinicians generally regard this model as of more academic than clinical importance. It is therefore not often studied in depth. Should the researcher's assumption be true, it would indicate a lack of understanding by some respondents on the importance of a sound theoretical foundation on the occupational functioning of human beings, and the applicability thereof, in practice. With occupation as one of the key concepts in occupational therapy, this would constitute a major shortcoming in knowledge as applied to early intervention.

On the whole, there seems to be a need for further training on theoretical foundations for treatment as was indicated by the response on this sub-section. The significance of thorough knowledge of theories and approaches in treatment was indicated in 3.2.3.

5.3.2 Training Needed on the Causes of Developmental Delay

In this sub-section respondents indicated their need for further training on the causes for developmental delays. Responses are indicated in Figure 6.

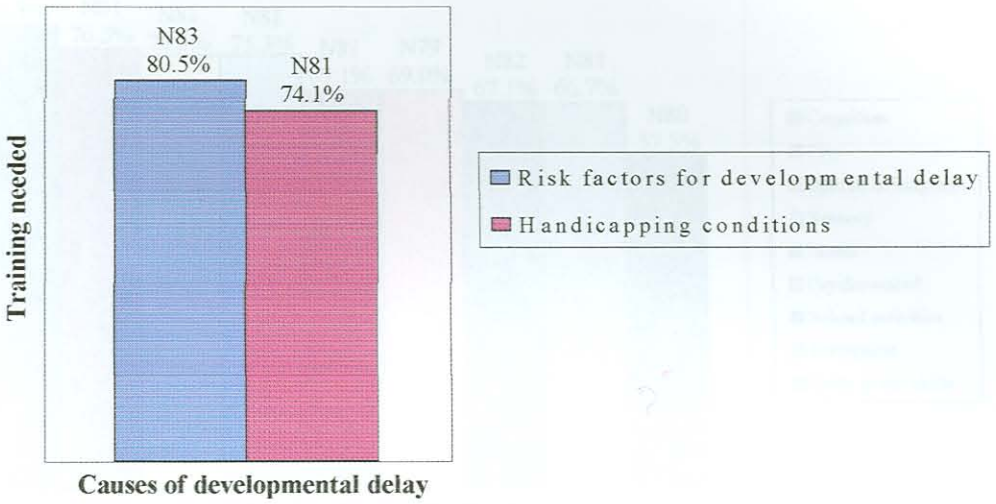

Figure 6: Training needed on causes of developmental delay

Ever increasing risk factors emerge as medical technology advances in keeping more babies alive, new diseases such as HIV/AIDS emerge, violence increases and families and society at large become less able to provide for the needs of the young (refer to 2.5.2.2).

Apart from revision of well established risk factors, the result in Figure 6 (80.5% and 74.1%) clearly indicates that therapists should be kept informed of the ever increasing complexity of risk factors and conditions causing handicaps which are prevalent. A description of what could be included under *risk factors* was, however, not given in the questionnaire and uncertainty amongst respondents about this concept could have caused an inflated response.

5.3.3 Training Needed on Early Childhood Development

In this sub-section respondents indicated needs for further training on different aspects of early development. Responses are indicated in Figure 7.

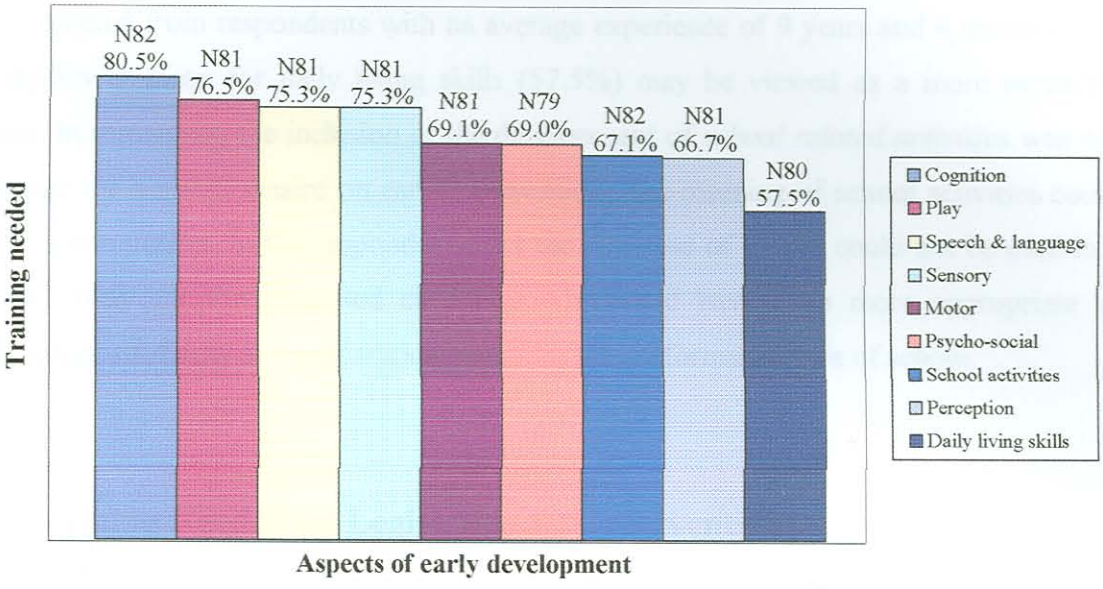

Figure 7: Training needed on early development

An explicit need is indicated for knowledge on cognitive development (80.5%). Language and perception could also be considered as being incorporated into cognitive development, and these scores should be considered in relation to one another[67]. Speech and language were grouped together in the questionnaire and a response of 75.3% indicates an explicit need for further training. Because this is not a specialised area of occupational therapy, a high mean on this may be expected. A relative lower need for additional training in perceptual development was indicated (66.7%), which is logical because this is a specialised field in occupational therapy. As such, an even lower mean should then be expected from qualified therapists. The overall high mean for further training in cognitive development is difficult to explain and in retrospect a description of terminology would have helped ascertain that all the respondents interpreted the concept in a similar way.

The expressed need for further training in sensory (75.3%), motor (69.1%) and psycho-social (69%) performance components is also to be considered high for qualified therapists. The overall high need for further training in this sub- section, in comparison with the level of

competency the respondents expressed in Table 17, shows a discrepancy between levels of knowledge and practical skills. This will be further discussed in 5.5.1.

As was described in 3.2.2.2, the relevant performance areas for occupational therapy in early intervention are play and daily living skills. The high mean for play (76.5%) would therefore not be expected from respondents with an average experience of 9 years and 4 months. The relatively lower mean for daily living skills (57.5%) may be viewed as a more moderate response. In retrospect, the inclusion of the development of *school related activities* was not appropriate for a questionnaire on early intervention. The meaning of school activities could also have been unclear to the respondents and the response of 67.1% could not be used in a meaningful way for the proposed curriculum. It would have been more appropriate to specify school readiness as a preparation phase for the performance area of school.

5.3.4 Training Needed on Legislation for Intervention

In this sub-section respondents indicated further training needs on legislation for intervention. Responses are indicated in Figure 8.

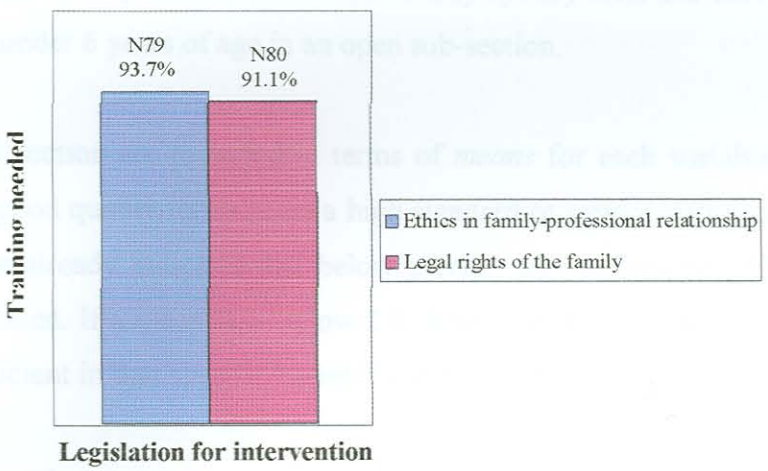

Figure 8: Training needed on legislation for intervention

The need for information on legislation (91.3%) and ethics (93.7%) as it pertains to the family, is very clearly indicated in this response. Legislation has continually developed and changed since 1994, as was indicated in the National Policy described in 2.5.2. With the

current emergence of a family-centred approach to intervention and the focus on the rights of the family and the child, as was stated in 2.5.2.1, therapists need to familiarise themselves with the most recent information in this regard. Ethics with regard to beneficence and autonomy of the client, competency of the service provider and professional conduct would be of particular importance in a family-centred approach (refer to 3.2.4).

In conclusion to this section, it appears that the respondents are in need of further training in the theoretical framework for early childhood intervention. Training needs were indicated for all the specific theories as was indicated in Figure 5, the causes of developmental delay in Figure 6, early childhood development in Figure 7, and legislation and ethics in Figure 8. In spite of a possible inflated result in this section due to the yes/no response, instead of a rating scale, cognisance should be taken of the distribution of responses on specific aspects to be considered for the proposed curriculum in Chapter 6.

5.4 Assessment in Early Childhood Intervention

In this section respondents had to rate their skills on different aspects of assessment according to the following scale: 1 = No skills, 2 = Below average skills, 3 = Average skills, and 4 = Good skills. Respondents could additionally specify tests and surveys being used to assess children under 6 years of age in an open sub-section.

Results for this section are provided in terms of *means* for each variable. As intervention should be of a good quality to maintain a high standard of service delivery, a mean below 3 for any variable already indicates that below average service will be provided and further training is indicated. If a mean falls below 2.5, it will be regarded as a clear indication that skills are insufficient in that specific variable and that further training is necessary.

Minimum and maximum responses on the rating scale are included to indicate the range that was obtained for each variable. The standard deviation (SD) of each mean are not used for further interpretation in this study, but are included should the response of an individual or a sub-group during future research be compared with the data obtained during this study.

5.4.1 Skills in Screening and Observation

In this sub-section respondents rated their skills in screening for different age groups and in observation of different aspects. The results appear in Tables 12 and 13.

Table 12: Screening for developmental delays.

Variables	N	Mean	SD	Min	Max
At risk infants [0-18 months]	85	2.61	0.74	1	4
At risk toddlers [19-36 months]	87	2.97	0.74	1	4
At risk pre-schoolers [3-6 years]	86	3.68	0.51	2	4

Table 13: Observation skills.

Variables	N	Mean	SD	Min	Max
Problems with regard to basic abilities	87	3.43	0.62	1	4
The effect of family-child interaction on the child	86	3.05	0.75	1	4
The needs of the family	86	2.92	0.81	1	4
The strengths/assets of the family	86	2.86	0.83	1	4

In the screening for developmental delays, the same distribution as was seen in the experience with different age groups in Figure 1 is prevalent. The younger the age group, the less experienced were the respondents and this is also reflected in the screening skills. Screening for developmental delays in infants (mean 2.61%) should be attended to in the proposed curriculum because early identification is of paramount importance for early intervention.

Of significance in the observation skills are the relatively lower means (2.92 and 2.86) on ascertaining the needs and strengths/assets of the family. As was indicated in Figure 5 and addressed in the discussion of the results in 5.3.1, knowledge is needed on family systems and dynamics, and a family-centred approach is still regarded as a contemporary development in most practices. Further training in this area is generally needed, as was also indicated in this sub-section.

Skills in Functional Assessment Procedures

In this sub-section respondents rated their skills in functional assessment procedures. These procedures are used in addition to formal tests in a clinical setting. The results are indicated in Table 14.

Table 14: Functional assessment procedures.

Variables	N	Mean	SD	Min	Max
Using everyday tasks, events and situations to assess	86	3.12	0.68	2	4
Assessing the child in the home environment	86	2.60	0.79	1	4
Assessing performance areas in ADL	86	3.26	0.60	2	4
Assessing performance areas in play	85	3.29	0.69	1	4
Assessing performance areas for school readiness	85	3.54	0.72	1	4

The only variable that indicates a lower mean in functional assessment procedures, is assessing the child in the home environment (2.60). As was discussed in 5.2.3, the home environment was not specifically included as a field of practice in the questionnaire and a representative response is not available. It is therefore not clear whether the emphasis of the response is on the setting which is not being utilised, or on the skill of assessing in an informal environment such as the home. As was seen, only 2 respondents added the home as an area of experience to the field of practice. Assessment in the home environment would, amongst other aspects, be ideal for ascertaining needs and strengths/assets of the family as was indicated in 5.4.1. This is an area that could be addressed in further training.

5.4.2 Skills in Interpretation and Documentation.

In this sub-section respondents rated their skills in interpretation of test results and documentation. The results appear in Table 15.

Table 15: Interpretation and documentation.

Variables	N	Mean	SD	Min	Max
Interpretation of formal test results	85	3.56	0.63	2	4
Identification of specific disorders	87	3.17	0.73	2	4
Evaluation of family's insight into the disability	87	3.22	0.75	1	4
Report writing	87	3.34	0.59	2	4
Verbal communication of results to team members	87	3.45	0.59	2	4

Respondents indicated competence in interpretation of test results and documentation skills. With reference to the tests that the respondents indicated in Table 16, most of these tests are structured with clear instructions for use and interpretation. Workshops on the use of most of these tests are also available on a regular basis in South Africa and should therapists have

attended these, it could further have aided them in their competency in interpretation and documentation of test results.

5.4.3 Use of Developmental Tests and Surveys

In an open sub-section therapists were requested to fill in the norm-related tests and surveys which they are currently using to assess children between 0 and 6 years of age. A variety of tests and surveys were indicated by the respondents. Some of these tests are not applicable to pre-schoolers and they were omitted. In this sub-section N = 84.

Results included only those tests or surveys which were used by 4 or more respondents. The respondents have not consistently indicated the specific edition of the test being used and information on this is therefore not available. Table 16 illustrates tests most frequently used as well as the percentage of respondents using these tests.

Table 16: Tests or surveys being used for assessment.

Test / Survey	Abbre-viation	Author	Age group	%
Developmental Test of Visual-Motor Integration	VMI	Beery, K.E. [68]	3-17 years	94.04
Developmental Test of Visual Perception	DTVP	Hammill, D.D. Pearson, N.A. & Voress, J.K. [69]	4-11 years	90.47
Test of Visual-Perceptual Skills	TVPS	Gardner, M.F. [70]	4-13 years	71.42
Clinical Observations adapted from Ayres	-	SAISI [71]	5 years >	54.76
Southern California Sensory Integration Test	SCSIT	Ayres, A.J. [73]	4-8 years	47.6
Goodenough – Harris Drawing Test	-	Harris, D.B. [73]	3-15 years	41.66
Miller Assessment for Pre-Schoolers	MAP	Miller, L.J. [74]	2-6 years	30.95
Gesell Preschool Test	-	Haines, J., Ames, L.B. & Gillespie, C. [75]	2.5-6 years	26.19
DeGangi-Berk Test of Sensory Integration	TSI	Berk, R.A. & DeGangi, G.A. [44]	3-5 years	23.80
Developmental norms [not always specified]			0-6 years	22.61
Strive towards achieving results together	START	Solarsh, B., Katz, B. & Goodman, M. [76]	0-3 years	16.66
Movement Assessment Battery for Children	MABC	Henderson, S.E. & Sugden, D.A. [77]	4-12 years	16.66
Test of Motor Impairment	-	Stott, D.H., Moyes, F.A. & Henderson, S.E. [78]	5-11 years	7.14
Motor-Free Visual Perception Test	MVPT	Colarusso, R.P. & Hammill, D.D. [79]	4-11 years	7.14
Test of Visual-Motor Skills	TVMS	Gardner, M.F. [80]	2-13 years	4.76
Bayley Scales of Infant Development	-	Bayley, N. [81]	1-42 months	4.76

According to the *Authentic Curriculum-Based Approach* in assessment, as described in 3.2.1, tests and surveys should be functional and compatible with the goals and aims of treatment. Bagnato[36] evaluated numerous tests and surveys according to their criteria for authenticity in their publication on this approach. None of the tests or surveys that were mentioned by the respondents in this study, was included in their evaluation. This could indicate that these tests are not regarded as appropriate for early intervention in the USA. According to the list of tests that were included for evaluation, it seems that developmental scales, profiles, and inventories, as well as checklists for parents, are more prevalent. These are also more applicable for the infant and the very young pre-schooler.

Of the tests and surveys that were mentioned by the respondents, it is significant that few are applicable to the 0 to 3 years age group. Most of the tests only commence in the later pre-school years and continue to middle childhood years. This gives the impression that they are actually intended for the older child. Referring back to Figure 1, the fact that less respondents indicated experience with the younger age groups correlates with a greater use of tests for the older pre-schooler. Perusal of these tests also indicates that they are more diagnostically orientated and require individual attention from the tester in a clinical setting. Parental participation is minimal and information on the child's strengths and assets are not necessarily derived from them.

In the study done by Lawlor and Henderson[50], the respondents had also to indicate the tests they used in the field of paediatrics (refer to 3.3.3). Of the ten tests that were mentioned, four tests correlate with the tests mentioned in this study. These were the *Miller Assessment for Pre-schoolers*, the *Bayley Infant Scales*, the *Gesell Developmental Test* and the *Test of Visual Motor Integration*. Whereas the VMI was only used by 11% of the respondents in their study, 94.4% of the respondents in this study indicated that they used the VMI. These differences further strengthen the perception that there is little conformity amongst therapists in the choice of tests in this field.

A problem area for therapists in South Africa is the lack of tests that have been standardised for the local population. One of the standards for selecting tests is that it should be field tested with children similar to those being assessed[1].

- The *Bayley Scales of Infant Development* has been researched in South Africa[82] to provide local norms for black infants. Only 4.76% of the respondents indicated the use of this test and it is unknown whether they use these adapted norms.

- Richter, Griesel and Rose[83] investigated *The McCarthy Scales of Children's Abilities* in 1994 for adaptations and norms applicable to black South African children. Although this test is used between ages 2 to 8 years, and would therefore be applicable for early intervention, none of the respondents indicated use of this test.

- The *START* [76], which was indicated by 16.66% of the respondents, is a survey that was compiled in South Africa. The norms were, however, taken from international developmental tests and surveys and were not researched and adapted for local populations.

- The *Herbst Test for Nursery School Children*[84] is a test that was standardised on a black and coloured population in SA, but none of the respondents indicated the use thereof.

- Helm and Concha[85] published their results on a study conducted to establish norms for a sample of South African urban black children on the *VMI* in 1990. Their conclusion that the original standardised norms of the test should be used with caution with urban black children, confirm the perception that tests should be appropriate for the population for whom it is intended.

In Table 4 the respondents indicated confidence in their skills to assess performance areas, but no tests for ADL or play were mentioned in the survey. The fact that confidence was also displayed in the use of everyday tasks, events and situations to assess could partly explain this, because these could be used to assess performance areas. However, there seems to be a lack in the use of standardised or norm related tests for the assessment of performance areas.

5.5 Treatment in Early Childhood Intervention

In this section respondents could rate their skills on different aspects of treatment according to the following scale: 1 = No skills, 2 = Below average skills, 3 = Average skills, 4 = Good skills.

Results for this section are provided in terms of *means* for each variable. The same cut-off points explained in 5.4, will be used for this section. A mean below 3 for any variable indicates a need for further training. A mean below 2.5 is regarded as a clear indication that skills are lacking in that specific variable.

5.5.1 Skills in Treatment of Basic and Functional Abilities

In this sub-section respondents rated their skills in treatment of basic (performance components) and functional (performance areas) abilities. The results appear in Table 17.

Table 17: Treatment of performance components and areas.

Variables	N	Mean	SD	Min	Max
Sensory performance components	87	3.18	0.69	1	4
Motor performance components	85	3.47	0.54	2	4
Oral-motor performance components	85	2.24	0.78	1	4
Perceptual performance components	87	3.61	0.54	2	4
Cognitive performance components	87	3.25	0.63	1	4
Psycho-social performance components	87	2.83	0.77	1	4
Play performance areas	87	3.09	0.74	1	4
ADL performance areas	82	3.24	0.60	2	4

The respondents displayed an overall competence in the treatment of performance components and areas. The means on only oral-motor (2.24) and psycho-social (2.83) performance components were below average.

In the study done by Case-Smith USA[58], further training in feeding and oral-motor performance components was one of the areas indicated for further training as it was felt that it had not been sufficiently dealt with in undergraduate occupational therapy training (refer to 3.3.2). In South Africa oral-motor components are generally regarded as the domain of the speech pathologist, in contrast to the USA where it is the domain of the occupational

therapist. Only occupational therapists who have attended postgraduate courses in this field, therefore, feel themselves competent in providing the intervention. In dealing with severely disabled children, it is imperative for the training of ADL that therapists should be competent in the treatment of feeding and oral-motor components.

Of further interest in these results are the relative contrasts between the high percentages indicated in Figure 7 for training needs in these components and areas, and the competence shown in the assessment and treatment thereof. For cognition, for instance, 80.5% of the respondents indicated a need for further training, but the mean for the competence in treatment skills is 3.25, which is average. Another example is play, where the percentage for further training is 76.5, but the mean indicated in Table 14 for competence in assessment is 3.29 and for treatment is 3.09, both within the average range.

A possible explanation for this could be that clinicians become experienced in the practical execution of procedures but gradually become ignorant of the theoretical foundations thereof. This view would strengthen the need for theoretical training in a Postgraduate qualification. An emotional status of insecurity about their theoretical knowledge and the ability to explain or even defend their practical skills on a theoretical level, could also have been present. As was explained in 5.3.3, training needs could not be rated as was the case with practical skills and respondents could have felt hesitant to give a no response, implying that they have adequate knowledge and need no further training.

5.5.2 Skills in the Application of Approaches and Techniques for Treatment

In this sub-section respondents rated their skills in the application of approaches and techniques for treatment. The results appear in Table 18.

Table 18: Application of approaches and techniques for treatment.

Variables	N	Mean	SD	Min	Max
Sensory Integration [SI]	87	2.94	0.91	1	4
Neuro-developmental Therapy [NDT]	86	2.57	0.86	1	4
Learning techniques	87	2.80	0.68	1	4
Behavioural-adaptation techniques	87	2.69	0.78	1	4
Bio-mechanical techniques	85	2.59	0.82	1	4
Play therapy	86	2.63	0.81	1	4
Group therapy	86	2.71	0.78	1	4
Baby therapy	85	2.11	0.90	1	4

None of the means for this sub-section falls within the average range. The nearest to average is a competency in Sensory Integration (2.94). Competency in baby therapy is the lowest (2.11), which is in accordance with the results up to this point on this age group. The below average score (2.59) on bio-mechanical techniques stands in contrast to the above average scores in Table 21 for *Structuring of the environment* and *Positioning of the child*. It indicates that these are not associated with each other. The below average score for group therapy (2.71) could be regarded in relation to the response on *Working with large groups of patients* in Figure 4. It would appear from the responses to both these variables that the respondents need more training in groupwork. With the prevalent time and economical restrictions, treating patients in groups should be more commonly used.

These results further strengthen the conclusion that clinicians, although they may feel competent in some practical skills, experience a need for theoretical foundations and the application thereof.

5.5.3 Skills in Treatment of Specific Disorders

In this sub-section respondents rated their skills in the treatment of specific disorders. The results appear in Table19.

Table 19: Treatment of specific disorders.

Variables	N	Mean	SD	Min	Max
Sensory modulation disorders	87	3.01	0.81	1	4
Developmental dyspraxia	87	3.03	0.75	1	4
Attention deficit disorder and hyperactivity	87	3.38	0.67	1	4
Visual impairment	87	2.51	0.88	1	4
Learning disorders	87	3.39	0.58	2	4
Behavioural and emotional disturbances	87	2.87	0.79	1	4
Psychiatric disorders	86	2.34	0.85	1	4
Neurological disorders and damage	86	2.76	0.81	1	4
Progressive disorders	87	2.43	0.76	1	4
Traumatised child	86	2.40	0.90	1	4

An explicit indication is given for further training in psychiatric disorders (2.34), progressive disorders (2.43), and the traumatised child (2.40). Clear indication is given for visual impairment (2.51), behavioural and emotional disturbances (2.87), and neurological disorders and damage (2.76).

Of interest is the below average mean on neurological disorders and damage, as this constitutes a large percentage of the population requiring early intervention. As was argued in 5.2.3, a large portion of the population which are seen for early intervention in different fields of practice, falls within this category and therapists should be well equipped to treat these disorders. At present, the circumstances of a violent and disturbed society, as described in 2.5.2.2, would only add to the category of neurological disorders and damage, as well as to intervention for the traumatised child. One respondent added the child with congenital disorders in the open section of this list.

5.5.4 Skills in Planning for Treatment

In this sub-section respondents rated their skills in planning for treatment. The results appear in Table 20.

Table 20: Planning for treatment.

Variables	N	Mean	SD	Min	Max
Planning aims of treatment	87	3.53	0.55	2	4
Evaluating effectiveness of treatment for adaptation	87	3.38	0.63	2	4
Analysis for requirements of tasks and activities	87	3.37	0.59	2	4
Formulation of home programmes	87	3.29	0.63	2	4
Stimulation programmes for larger groups	87	2.84	0.83	1	4

In the area of planning for treatment, it was only the stimulation programmes for larger groups that indicated a below average mean (2.84). This is an important skill in providing a service in a community-based approach as these programmes can be well applied to larger numbers of the population. Economic, time and logistical factors necessitate the use of large groups in South Africa. This should, therefore, be included in the curriculum.

5.5.5 Skills in Application of Principles and Adaptations in treatment

In this sub-section respondents rated their skills in application of principles and adaptations in treatment. The results are in Table 21.

Table 21: Application of principles and adaptations in treatment.

Variables	N	Mean	SD	Min	Max
Grading of treatment	87	3.41	0.64	1	4
Structuring of the environment	87	3.53	0.57	2	4
Adaptations to activities	87	3.51	0.59	2	4
Positioning of the child	87	3.40	0.58	2	4

Results indicate that respondents are competent in the application of principles and treatment as presented by the above mentioned variables. Principles and adaptations are derived from different theories and approaches as was indicated in 3.2.3. According to the results in Figure 5 and Table 8, the respondents indicated a need for further training in specific theories and approaches. In contrast to these responses, Table 11 reflects a positive response on the application of principles and adaptations in treatment. The contrast in these responses

could either imply that the relationship between the theories/approaches and principles and adaptations are not fully understood by the respondents or it could, again, reveal a discrepancy between theoretical foundations and practical skills.

5.5.6 Skills in Adaptation through Assistive Technology

In this sub-section respondents rated their skills in adaptation through assistive technology. The results appear in Table 22.

Table 22: Skills in adaptation through assistive technology.

Variables	N	Mean	SD	Min	Max
Splinting	87	2.23	0.89	1	4
Equipment for ambulation	87	2.31	0.92	1	4
Equipment for positioning	87	2.68	0.78	1	4
Power switch devices	87	1.84	0.83	1	4
Appropriate paper technology [APT]	87	1.92	1.01	1	4
Computer technology	87	2.15	0.87	1	4
Assistive devices for ADL	86	2.63	0.78	1	4

Means for all the skills for adaptation through assistive technology indicate an explicit need for training. In the study done by Case-Smith[58], the use of assistive technology was also indicated as one of the areas that needed further training (refer to 3.3.2). Respondents feel most competent in providing equipment for positioning (2.68) and assistive devices for ADL (2.63), but these are still below average.

The use of assistive devices is especially important in the treatment of severely disabled children. According to Figure 2, it was evident that only 40.9% of the respondents are/were involved in institutions for severely disabled children. This could explain the higher need for training in assistive devices. It was, however, also argued in the discussion of this result in 5.2.3 that the high percentage of respondents in Figure 2, which are/were involved in specialised schools, would also encounter a large number of severely disabled children in their work. As all of the above-mentioned variables in Table 22 are important for early intervention for disabled children, these need to be addressed in the proposed curriculum.

Chapter 6

Conclusion: Proposed Framework for the Curriculum

6.1 Introduction

The specialised module in the M ECI is an extensive module with an allocation of double the amount of credits and time in comparison to other modules. In this module professionals will obtain training within the framework of their own discipline and become specialised interventionists in their own field of practice. The content of the curriculum for this module is therefore of paramount importance to provide the necessary knowledge and skills to obtain the desired degree of advanced specialisation.

The emphasis in this chapter will be placed on the identified needs as were indicated by the research. A description of the prescribed framework for the M ECI will initially be given. The proposals for the curriculum will, as much as possible, be formulated to fit the stipulated framework for the M. ECI, but the researcher also took the liberty to add other suggestions that were deemed advantageous for the content as well as advanced training. Proposals for the content of the curriculum for the specialised module for occupational therapists will next be described. Suitable educational methods for training, related to the proposed content, will lastly be suggested. The proposed content and educational methods would provide a framework for the educators who are involved in the development and formulation of the curriculum for the M ECI.

6.2 Description of Prescribed Framework for the M ECI

The course is intended for medical and paramedical professionals involved in rendering services to infants and young children between the ages of 0 to 6 years of age. The course "... aims at equipping professionals with specialised knowledge and skills in the field of early childhood intervention, to function optimally in a changing and challenging social context...".[87] It poses as its focus areas:

- Working in teams with professionals and community members to facilitate social development
- Understanding their own role within the team of professionals
- Developing comprehensive strategies for intervention
- Critically evaluating the accountability, appropriacy and sustainability of service provision

The degree is presented as a 2 year distance education course with on site block periods of one or two weeks per year. The course work is presented in 7 modules over the two years. (Modules other than the specialised module, will be referred to as core modules in the text)
The modules comprise of the following:

First year

- Module 1: Theoretical framework and issues in early childhood intervention (30 credits)
- Module 2: Team building and management of early childhood intervention in the community (30 credits)
- Module 3: Family -focused community intervention (30 credits)
- Module 4: Assessment and intervention (30 credits)

Second year

- Module 5: Elective module in *one* of the following specialised areas: (60 credits)
  - Child Health
  - Severe disabilities
  - Nursing

- Nutritional care
- Occupational therapy
- Physiotherapy
- Communication intervention
- Social work
- Educational psychology

- Module 6: Applied research in early childhood intervention (40 credits)
- Module 7: Collaborative problem solving (20 credits)

The following teaching methodology will be used to conduct the course:[88]

Problem-based study method:

The coursework is oriented to develop the student's skills in analysing content, solving problems and applying specific knowledge within the field of early childhood intervention. This will mainly be done with the use of case studies and on-line discussions with other students and training personnel. At the beginning of the course each student is assigned to a multi-professional study group. This will facilitate communication and in depth understanding of the perspectives of different professionals through the use of the discussions.

Computer and Web-based presentation of study material:

Students need to have access to the Internet because all information concerning the course will be presented by means of the WebCT. This will enable lecturers to put study guidelines, notes, content references, assignments, tests, multi-media presentations and any other appropriate information on the Web. Interaction between students, and with lecturers, will be facilitated by registration on the List serve for the M ECI. Case studies will be distributed on CD-Rom and need to be accessed by students with the use of a computer.

Module presentation:

Although modules might differ in their structure and presentation, all modules should adhere to the following basic layout:

- Assessment should be done of prior knowledge. This will mostly be done in the form of a case study.
- An aim and objectives for the module will be formulated.

- An outlay of the units and readings for the module will be stipulated.
- 10 Prescribed case studies on video will be used for all the modules and only the perspective from which each case study is viewed, will differ according to the specific assignment.
- Student appraisals will include an individual and a group assignment.
  - The individual assignment will be required at the end of each module and would revolve around a case study.
  - The group assignment will be in the form of online discussions and should focus on open discussion on different views, creative synthesis of the issues under view and self-reflection on the functioning of the group.
- Content guidance will be provided in the form of questions to direct the student's perusal of literature and online discussions.
- Self-evaluation and rating of the assignment will be required in both the individual and group assignments. A percentage of the marks is allocated for this.

Prescribed books:

In addition to prescribed books and articles for each module, the primary prescribed text for the Masters is *Handbook of Early Childhood Intervention.*[1]

6.3 Content of the Curriculum for the Specialised Module in Occupational Therapy

Valuable information was obtained in the literature review and research results of this study and this will be incorporated into the proposed content for the curriculum. In order to determine the content of the curriculum for Module 5, an analysis of the research results and the literature was done and the outcome will be displayed in Tables 27 – 37. The emphasis will be on the identified needs and deficiencies in knowledge and skills as were indicated by the research results and the literature. This does not imply, however, that other aspects that are necessary to constitute a comprehensive curriculum should not also be included.

The following rationale applies for the interpretation of the tables:

- The same sequence of headings that was used for discussion of research results in Chapter 5, will be followed in this sub-section. . The appropriate reference numbers were data can be located in previous chapters are included.
- In the first column the identified needs/deficiencies that pertain to the specific content indicated by the heading of the table, are listed. *Primary* needs/deficiencies in the table refer to research data and *secondary* needs/deficiencies refer to data from the literature review in chapters 2 and 3.
- In the second column, the different aspects that can ideally be integrated with the content in the first column are listed. This will contribute to improved knowledge and skills outcomes when the primary and secondary needs/deficiencies are addressed in training.
- In the third column suitable educational methods that can be used for training are listed. In 6.4, a more comprehensive description of the educational methods that are suggested for training in the M ECI will follow.

Age groups

Table 27: Experience in Age Groups

Identified needs/deficiencies from the research and literature	**Knowledge and skills outcomes in training**	**Suitable educational methods for training**
Primary: • Experience in intervention for 0 – 18 months infants *Secondary:* • Knowledge on benefits of early intervention • Early identification • Early referral • Available services (5.2.2)	• Theories: Neuro-developmental and Family systems and dynamics (5.3.1) • Causes of developmental delay (5.3.2) • Early development (5.3.3) • Screening at risk infants (5.4.1) • Use of developmental tests (5.4.4) • Treatment of oral-motor component (5.5.1) • Baby therapy (5.5.2)	• Case Study • References for study material • Workshop (during block period) • Practical at primary health care clinic

Emphasis should be placed on early intervention for the 0 – 18 month old child. This would ensure that more therapists become efficient in providing, what is commonly known as, baby therapy. In the long term it would also contribute to the availability of more services for very early intervention and thus give impetus to the national policy of prevention of disability. Through the provision of services, early identification of problems and prompt referral to professionals could be encouraged and advocacy for the effectiveness of intervention at this very early age could be done.

Additional aspects, which are also indicated by the research results, that could ideally be integrated with training for this early age group are knowledge on neuro-developmental theory, early development, causes of developmental delays, screening of at risk infants and treatment of performance components.

Fields of practice

A number of fields of practice that were under-utilised in service provision for early intervention were identified in the research. As these fields of practice could also be used during practicals in post graduate study, they will further be discussed in terms of the training opportunities that they offer for the identified needs and deficiencies that were revealed in the research results and literature review.

Table 28: Primary Health Care Clinics

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training

Primary:
• Intervention in primary health care clinics
Secondary:
• Implementation of national policy for prevention of disability (2.5.2)
• Training of personnel and multiskilling (2.3.3 and 3.3.3)
	• Experience in age group 0 – 18 months (5.2.2)
	• Teamwork (5.2.4)
	• Community involvement: (5.2.5)
	  ◦ Diversity of clients
	  ◦ Education and networking
	• Causes of developmental delay (5.3.2)
	• Early development (5.3.3)
	• Legislation applied (5.3.4)
	• Screening for developmental delays (5.4.1)
		• Practical in a health care clinic
		• Report back / on-line discussion

	• Treatment of specific disorders (5.5.3) • Building resilience in the family (5.5.9) Counselling of sensitive issues (5.5.10)	

This field of practice is an ideal setting for collaboration in the team, cross training and multiskilling. It also provides the opportunity for a family-centred approach where the therapist could be involved in counselling of sensitive issues and building resilience in the family. As these clinics are located in different communities, it could provide ample opportunity for taking the diversity of families and their ecological contexts into account in service delivery. Networking, referral to resources in the community and education of the community in terms of disability could also be incorporated during service delivery in these clinics.

Intervention in primary health care clinics provides an opportunity for therapists to become involved in the 0 – 18 month old age group. Knowledge on early development would broaden and experience in screening of developmental delays would be obtained. A variety of causes for developmental delay and disorders would be encountered. The emphasis would be on prevention of disability and it would thus be an implementation of the national policy on childcare. Appropriate legislation and ethics for service provision would have to be taken into consideration and would provide an ideal learning opportunity for therapists in this respect.

Table 29: Children's Homes

Identified needs/deficiencies from the research and literature	**Knowledge and skills outcomes in training**	**Suitable educational methods for training**
Primary: • Intervention in children's homes *Secondary*: • Training of personnel and multiskilling (2.3.3 and 3.3.3)	• Team work (5.2.4) • Working with large groups of clients(5.2.5) • Theories: Psycho-social and Motivational (5.3.1) • Psycho-social performance components (5.5.1) • Behavioural-adaptation techniques(5.5.2) • Disorders: Behavioural and Emotional disturbances and	• Practical in a children's home

	Traumatised child (5.5.3) • Stimulation programme for large groups (5.5.4)	

Service delivery in children's homes provides an intervention opportunity for a large group of children. Screenings for developmental delays in a group and group therapy could be done in the home were the children are residing to provide a cost-effective service. This is also an ideal situation where a stimulation programme could be planned and implemented. The personnel of the home could be trained to maintain such a programme and teamwork could thus be developed to provide a more comprehensive service.

In these settings it could be expected to deal with a large number of children who have been traumatised and psycho-social and motivational theories would be needed to effectively provide intervention. Behavioural and emotional disturbances would be encountered and behavioural-adaptation techniques would be appropriate in the handling of these problems. All of the afore-mentioned aspects were all indicated in the research results as areas that need further training.

Table 30: Institutions for Severely Disabled

Identified needs/deficiencies from the research and literature	**Knowledge and skills outcomes in training**	**Suitable educational methods for training**
Primary: Intervention in an institution for severely disabled	• Handicapping conditions (5.3.2) • Bio-mechanical techniques (5.5.2) • Specific disorders: Neurological disorders and Damage and Visual Impairment (5.5.3) • Assistive technology (5.5.6)	• Practical: Application of assistive technology for one child • References for study material • Case study on severely disabled child

In this setting experience in treatment of a variety of handicapping conditions could be obtained. Insufficient experience in specific disorders such as neurological and visual impairment were indicated in the results and intervention for these conditions could be done in an institution where severely disabled children are admitted. As many of these children

are in need of adaptations to the environment as well as assistive technology to obtain optimal independence in performance areas, this setting can provide valuable training opportunities in these skills. Application of bio-mechanical principles and techniques could also be well incorporated into the treatment of the severely disabled child.

Table 31: NICU

Identified needs/deficiencies from the research and literature	**Knowledge and skills outcomes in training**	**Suitable educational methods for training**
Primary: Exposure to the NICU *Secondary:* Role of occupational therapy and advanced training (3.3.1 and 3.3.3)	• New born (5.2.2) • Teamwork (5.2.4) • Risk factors (5.3.2) • Counselling sensitive issues: NICU (5.5.10)	• Visit (during block period) • References for study material

Very early intervention should commence in the NICU and lack of experience in this field was clearly indicated in the research results and literature review. This setting provide valuable experience in the handling of the new born and knowledge on early development as well as risk factors that could later influence development. Involvement in the NICU could also provide a unique experience in teamwork and a family-centred approach. Together with other members of the team, the occupational therapist would be involved in counselling the parents on sensitive issues such as bereavement, maternal depression, effect of hospitalisation on the child and feelings of detachment or rejection. Even if a therapist is not working in the NICU, but is involved in early childhood intervention, a knowledge of the effect of treatment in the NICU are necessary for better understanding of the child and parents.

Table 32: Home Care

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training
Primary: • Home care *Secondary:* • Teamwork (uni-disciplinary approach) (2.3.2) • Paraprofessionals (2.3.4) or Fieldworkers (2.3.5) • Family-centred approach (2.4.3)	• Education and networking (5.2.5) • Theories: Model of Human Occupation (5.3.1) • Risk factors for development delay (5.3.2) • Legislation and ethics (5.3.4) • Observation of needs / strengths assets of the family (5.4.1) • Assessing the child in the home environment (5.4.2) • Building resilience in the family (5.5.9) • Counselling sensitive issues (5.5.10)	• Practical/Fieldwork

Involvement in intervention in the home could ideally be utilised for implementation of a family-centred approach. Observation of the strengths and needs of the family, assessment of the child in the home environment, counselling of sensitive issues and building resilience in the family could be done in the specific ecological context of the family. Education and networking in a particular community could follow when the family is referred to resources in the community for further support and services. In certain communities the use of fieldworkers would be appropriate to maintain services. Risk factors for developmental delays, especially from the environment, could be identified and addressed. Intervention in the home environment and community would necessitate the consideration of ethical conduct and legislation and thus bring these issues under the attention of the professionals involved in the service delivery.

Table 33: Teamwork

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training
Primary: • Teamwork	• Content of practicals mentioned in Tables 27-33 • Core module 2 applied in occupational therapy	• Practicals • Multi-professional study groups for group assignments and on-line discussions throughout course

Apart from the suggested additional ways in which experience in teamwork could be obtained in the specialised module, the prescribed framework (refer to 6.2) of the M ECI is planned in such a way to be conducive to the development of teamwork. One of the core modules is designated to team building and the multi-professional study groups for group assignments and on-line discussions will provide practical experience in teamwork.

Table 34: Community Involvement

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training

Primary:
• Awareness of different communities: clarification of concept
• Education of community on disability and networking
Secondary:
• Cognisance of ecological context (2.5)
• Diversity of clients (2.5.1)
	• Assessment and intervention applied for the background specified in the case study or encountered during practicals
	• Observation skills
	  • Needs of the family
	  • Strengths/assets of the family (5.4.1)
	• Building resilience in the family (5.5.9)
	• Core module 2 applied in occupational therapy
		• Case studies
		• Practicals
		• On-line discussions

Through the study and application of the Model of Human Occupation in occupational therapy, a greater awareness of the importance of the ecological context of the different communities where services are provided could be obtained. Cognisance should be taken of the diversity of families and their strengths and needs in their environment for effective service delivery. Education of the community on disability and networking are important for integration of the family and the child with disability into their community. Resources in the

community should be developed and used to help the family in building resilience and coping in their community.

In addition to the core module (refer to 6.2) which deals with management of early intervention in the community, ample opportunities should be provided in the specialised module for community involvement where all the above-mentioned issues could be addressed. Each case or practical that students are involved in should first and foremost be regarded from the ecological context thereof.

Table 35: Theoretical Framework

Identified needs/deficiencies from the research and literature	**Knowledge and skills outcomes in training**	**Suitable educational methods for training**

Primary:
• Specific theories:
  • Family systems and dynamics
  • Neuro-development
  • Cognitive -Behavioural
  • Learning
  • Psychosocial
  • Motivational
  • Model of Human Occupation
• Causes of developmental delay
• Early development
• Legislation
Secondary:
• Advanced training and specialisation in early intervention (3.3.2)
	• Application of theoretical framework in case studies, assignments, practical work and discussions
	• Core modules 1 and 3 applied in occupational therapy
		• Case studies
		• Assignments
		• References for study material

Emphasis should be placed on the theoretical framework for intervention. A need for knowledge on specific theories (refer to Figure 5) was clearly indicated in the study results. In addition to this, training needs for causes of developmental delays, early childhood development and legislation on intervention were also indicated. Some of these aspects will be addressed in the core modules but all of the identified training needs with regard to a theoretical framework should be regarded in the specialised module as well. The occupational therapist who specialises in early childhood intervention should have a thorough knowledge

of early development and the appropriate theories that underscore the practical application of assessment and treatment.

Table 36: Assessment in Early Childhood Intervention

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training
Primary: • Screening at risk infants and toddlers (5.4.1) • Observation of the needs, strengths and assets of the family (5.4.1) • Assessing the child in the home environment (5.4.2) • Selection of appropriate tests and surveys for early childhood intervention (5.4.4) *Secondary:* • Implementation of the *Authentic Curriculum-Based Approach* in assessment (3.2.1)	• Experience in age groups 0 to 18 months (5.2.2) • Home environment (5.2.3) • Causes of developmental delay (5.3.2) • Early development (5.3.3) • Core module 4 applied in occupational therapy case studies	• Assignments • References for study material on assessment and tests • On-line discussions • Practicals • Research in core module 6

In addition to the content that would be covered in the core module on assessment, emphasis in the specialised module should be on screening and assessment of the infant and toddler as well as selection of appropriate tests and surveys for early childhood intervention. As far as evaluation in the context of a family-centred approach is concerned, the study results indicated a lack of experience in assessing the child in the home environment as well as observation of the needs, strengths and assets of the family. Sound knowledge on the causes of developmental delays and early development is needed to enhance effective evaluation and these aspects should also be addressed.

Table 37: Treatment in Early Childhood Intervention

Identified needs/deficiencies from the research and literature	Knowledge and skills outcomes in training	Suitable educational methods for training

Primary:
• Treatment of performance components: (5.5.1)
  • Oral-motor
  • Psycho-social
• Application of approaches and techniques for treatment: (5.5.2)
  • SI
  • NDT
  • Learning
  • Behavioural-adaptation
  • Bio-mechanical
  • Play therapy
  • Group therapy
  • Baby therapy
• Treatment of specific disorders: (5.5.3)
  • Visual impairment
  • Behavioural and emotional disturbances
  • Psychiatric disorders
  • Neurological disorders
  • Progressive disorders
  • Traumatised child
• Stimulation programmes for larger groups (5.5.4)
• Adaptation through assistive devices: (5.5.6)
  • Splinting
  • Ambulation equipment
  • Positioning equipment
  • Power switch devices
  • APT
  • Assistive devices for ADL
• Building resilience in the family (5.5.9)
• Counselling of sensitive issues/situations (5.5.10)
Secondary:
• Advanced training and specialisation in early intervention (3.3.2)
	• Theoretical framework:
	  • Specific theories (5.3.1)
	  • Causes of developmental delay (5.3.2)
	  • Early development (5.3.3)
	• Core modules 3, 4 and 7 applied in occupational therapy
		• Case studies
		• Assignments
		• References for study material on treatment procedures
		• On-line discussions
		• Practicals
		• Workshops during block period

In addition to the aspects that were mentioned under the theoretical framework, specific attention should also be given to the application of approaches and techniques for treatment as well as intervention for specific disorders (refer to Table 37). Two of the approaches that were noted for further training were SI and NDT. As there are extensive post-graduate training available for these two approaches, it would not be advisable or possible within the time constraint of this module to duplicate the training thereof and students should instead be referred to the appropriate courses presented by the different associations for SI and NDT.

Except for the treatment of oral-motor and psycho-social components, the treatment of other performance components were not needed in this study for further training. Performance areas were also not needed and the subjects expressed confidence in their treatment skills thereof. As there was an explicit need expressed for further training in the development of the performance components and areas, application of approaches and techniques, and treatment of different disorders, the components and areas would, however, have to be addressed on a theoretical and practical level in the module. All aspects of treatment would incorporate the performance components and areas and as such, would become part of the content of the curriculum.

The skill to provide treatment for large groups of children is becoming more important in service delivery due to economic and logistical considerations. As this was indicated by the subjects as an area of inexperience, this too should be included in the in the curriculum.

In conclusion to the proposed content for the curriculum, it must be emphasised again that the complete occupational therapy process should be represented in the specialised module in order to provide a comprehensive training in early childhood intervention. The results of the study are of importance in order to indicate aspects that need more attention and should become focus areas in the curriculum. It is towards serving this purpose that proposals for the framework are given. Proposals for suitable educational methods of training, based on the literature review and the researcher's own experience in an educational institution, will hence be discussed.

6.4 Educational Methods for the Curriculum

A number of researchers acknowledge the importance of continuing education for occupational therapists working in the field of early childhood intervention and suggestions with regard to educational methods, based on their study results and experience, are provided. Their findings will briefly be reviewed as a background to the suggestions that will follow for the proposed curriculum.

6.4.1 Background to the Educational Methods

In a study done by Lawlor[10], almost half of the occupational therapists who indicated that they are in need of further training in the field of paediatrics, specify that they prefer *workshops* as a means of education. Humphry and Link[56] confirm the appropriateness of using workshops as a format for continuing education and emphasise the advantages for therapists to consult with and learn from an experienced expert in the field. Workshops should therefore be presented in a practical way to provide maximum participation and hands-on experience for the therapists.

Another educational method that is widely advocated for further education is supervised *fieldwork or practicals*. Giuffrida and Kaufmann[63] conducted a study to evaluate the efficacy of fieldwork and concluded that the " experience increased the participants' knowledge about childhood development and disabilities and their skills in active listening, team collaboration, and problem-solving among team members". McCluskey[60] also emphasised that in order for therapists to develop competence and gain confidence, they need supervised practice of skills. They add that although videos of assessment and treatment are strongly recommended as teaching aids, they should not replace supervised practice.

The use of *case studies*, especially in a problem-based curriculum, is strongly recommended by Dolmans, et al.[62]. Their views on the important principles that educators have to adhere to in the selection and planning of specific cases were discussed in 3.3.3. As was indicated in 6.2, the use of case studies is one of the major educational methods in the M ECI.

Other educational methods for continuing education include the use of *literature references* in the form of books and journals[56], *audio-visual material* such as *videotapes*[60], *assignments*[88]

and *discussion groups* with peers and instructors or mentors.[57] Hinojosa, Moore, Sabari and Doctor[57] expand on the importance of discussion groups and interpersonal contact with the supervisors in what they call the development of professional socialisation. According to them, professional socialisation is the process through which values, norms, roles, and skills are acquired. They stress the cardinal importance of having competent role models for students to follow in order to develop professional socialisation.

Proposals for suitable education methods for the specialised module in the M ECI, related to the content that was indicated in 6.3, will hence be discussed. The prescribed framework for the M ECI as was described in 6.2 will be kept in mind, but additional methods which are deemed to be suitable and necessary will be added.

6.4.2 Integration of Content into the Educational Methods

Case Studies

The case study for the pre-evaluation and the final individual assignment (refer to 6.2) should include some of the content that was indicated in 6.3. For this module, emphasis should be placed on the role of the occupational therapist in the team.

Based on the analysis of the research data (refer to Tables 27 – 37), the cases that are included in the curriculum should focus on the following:

- Age group 0 - 18 months
- Severely disabled child
- Community and family involvement
- Theoretical framework for intervention
- Assessment of assets and needs of the family
- Assessment of performance components and areas
- Identification of causes/risk factors for disability
- Various conditions
- Different approaches and techniques required for treatment
- Case management

An example of how the content could be integrated in different case studies, are displayed in Tables 38 – 40.

Fieldwork or Practicals

Through a number of mini-practicals during the time assigned to the specialised module, many of the aspects indicated in the research data could be addressed. The following suggestions are made in this regard:

- **Primary Health Care Clinic:**

Students could be assigned to a Health Care Clinic in their own work environment for service delivery over a period of 4 to 6 consecutive visits. In addition to a written report at the end of the practical, the experience gained during these practicals can be discussed and shared with other students and the lecturer during assigned on-line discussions. This would facilitate communal problem solving and learning. The content that could be covered during this practical was reflected in Table 28.

- **Children's Homes**

Two visits to a children's home during the block period on site is suggested for this practical. During the first visit a large group of children should be screened for their level of development in all relevant performance components and areas. Based on the assessment, a group treatment session should then be planned, and then presented during the second visit. Some of the personnel involved in the children's home could be involved in the presentation of the group which would serve as a training session for them. A discussion on the outcome of the group treatment and appropriate ways in which to handle the children could follow the session. The content that could be covered during this practical is reflected in Table 29.

The planning and implementation of a stimulation programme could also ideally be done in a children's home, but there would probably be insufficient time for this during the block period. Should there be time and facilities available for this in the curriculum, this would then become a mini-practical that the student could do in her own work environment. The outcome of this project could be presented in on-line discussions, a group discussion during the block period or in an assignment.

- **Institution for Severely Disabled Children**

Two visits to an institution for severely disabled children during the block period on site is suggested for this practical. During the first visit each student should assess a child for problems in performance areas. One appropriate assistive device that would improve the child's performance should be considered and discussed in the group. This device should be made during the second visit to the institution, which could follow a workshop on assistive technology. The content that could be covered during this practical was reflected in Table 30.

- **NICU.**

A visit to a NICU during the block period on site is suggested. This should form part of a workshop being held on Baby Therapy. The content that could be covered during this practical was reflected in Table 31.

- **Home Care**

A visit to the home of a disabled child in a rural setting during the block period on site is suggested. Assessment of the needs and assets in the home and the community should be made and counselling done with the family of the child with regard to any relevant issues.
The content that could be covered during this practical was reflected in Tables 32 and 34.

Workshops

Workshops during the block period on site is a practical method of conveying information and facilitating interaction and problem-solving in a number of aspects. The following 3 workshops are suggested:

- **Assistive Devises**

A one day workshop is suggested on the making and use of assistive technology. A selection of the following are suggested according to the specific needs of the students of a particular year group:

- Splinting
- Equipment for ambulation
- Equipment for positioning
- Power switch devices
- Appropriate paper technology
- Assistive devices for ADL
- Computer technology

- **Baby Therapy**

A 1-day workshop is suggested in the specialised field of intervention for the 0 to 18 months age group. This should include a visit to a NICU. This is an important workshop for addressing the significant need indicated in the research for experience in this age group (refer to 5.2.2). Early childhood intervention ideally commences with the very young and should therefore be pursued in SA.

- **Approaches and Techniques for Treatment**

A 1-day workshop is suggested on a selection of the following approaches according to the needs of the students in a particular year group:

- Play therapy
- Group therapy
- Bio-mechanical approach
- Learning theories and approaches
- Behavioural adaptation approach

As was discussed in 6.3.2 under Treatment for Early Childhood, the training of SI and NDT is not foreseen as being possible within the time constraint of this curriculum. Approaches not chosen for the workshop by a specific year group of students should be included in an assignment during that year.

Assignments

The following 3 assignments are suggested:

- **Report on Practical in Primary Health Care**

In addition to the on-line discussions conducted with regard to this practical, a written report is suggested. The emphasis in the discussions should be on the cases and intervention, but in the report the emphasis should be on the multi-professional collaboration, personnel training, multiskilling and networking that were accomplished.

- **Theoretical Assignment**

In lieu of the fact that a significant need was expressed in the research for further training in theoretical foundations and treatment approaches as such, it is deemed necessary that a theoretical assignment be done on this. It is important that the apparent discrepancy between therapists' confidence about their knowledge and skills be addressed (refer to 5.3.1 and 5.5.2). Although the theory would necessarily be covered, the students should, at an advanced level of study, also be expected to conduct an analysis, compare the application of theories, do a critical evaluation and give an integrated eclectic synthesis to conclude the assignment.

- **Assessment**

In addition to the assessments being done during practicals, an assignment on the use of appropriate tests and surveys for early childhood intervention could be done. It is suggested that students conduct a critical evaluation of tests currently in use and make recommendations with regard to the selection and development of tests that are age appropriate and compatible with children in the SA milieu. It is also suggested that the research that students have to do for Module 6 could be utilised to conduct studies in this regard.

Table 38: Case Study 1

Background	Theoretical framework	Assessment	Treatment

Case 1
Age: 12 months
History: Gestational period 32 weeks. 3 weeks in NICU. Hospitalised at 6 months for pneumonia. Feeding problems. Hypersensitive to touch and movement. Cries excessively. Delayed milestones, low tone.
Family: Second child. Mother had 1 miscarriage and lost 1 baby in cot death. Middle class, live in flat, both parents work. Children in care of nanny during the day.
	• Neuro-developmental theory
	• Family systems and dynamics
	• Model of human occupation
	• Community: Middle class, urban, flat
	• Risk factors for developmental delay
	• Early development
		• Screening development 0 - 18 months
		• Assessment of infant
			• Performance components and areas:
			  • Oral-motor
			  • Sensory
			  • Motor
			  • Psycho-social
			  • ADL
			  • Play
			• Approaches:
			  • SI
			  • Baby therapy
			• Treatment disorders:
			  • Sensory modulation disorder
			  • Low muscle tone

Table 39: Case Study 2

Background	Theoretical framework	Assessment	Treatment

Case 2
Age: 3 years
History: Full term, normal birth. Encephalitis at 8 months. Resultant visual impairment and CP. Behavioural problems and difficult to handle. Very delayed milestones. Cannot walk and poor speech and communication.
Family: Poor family, rural area, 5 children and 3 room house in squatter's camp. Able to attend outpatients clinic at local hospital twice per month.
	• Neuro-developmental theory
	• Cognitive-behavioural theory
	• Learning theory
	• Family systems and dynamics
	• Model of human occupation
	• Community: Poor, rural, squatter's camp
	• Risk factors for developmental delay
	• Early development
		• Observation of needs/strengths/assets of the family
		• Screening at risk toddler
		• Assessing the child in the home environment
		• Selection of appropriate tests
			• Performance components and areas:
			  • Sensory
			  • Motor
			  • Perceptual
			  • Cognitive
			  • Psycho-social
			  • ADL
			  • Play
			• Approaches:
			  • NDT
			  • Learning techniques
			  • Behavioural-adaptation
			  • Bio-mechanical
			• Treatment disorders:
			  • Visual impairment
			  • Neurological disorder
			• Skills
			  • Adaptation through assistive devices
			  • Building resilience in the family
			  • Counselling of sensitive issues/situations

Table 40: Case Study 3

Background	Theoretical framework	Assessment	Treatment

Case 3
Age: 2 years
History: Birth history and early development not known. HIV positive, previously abused and under nourished. Withdrawn and maladjusted. Displays fears and nightmares.
Family: Foster home in low socio-economic urban area. Biological father known and tends to interfere at times, visits foster home when drunk and demands to take his child. Biological mother deceased.
	• Neuro-developmental theory
	• Motivational theory
	• Psycho-social theory
	• Family systems and dynamics
	• Model of human occupation
	• Community: Low socio-economic, urban, foster home
	• Risk factors for developmental delay
	• Early development
	• Legislation
		• Screening at risk toddler
		• Selection of appropriate tests
			• Performance components and areas:
			  • Sensory
			  • Motor
			  • Perceptual
			  • Cognitive
			  • Psycho-social
			  • ADL
			  • Play
			• Approaches:
			  • Behavioural-adaptation
			  • Play therapy
			• Treatment disorders:
			  • Traumatised child
			  • Behavioural & emotional disturbances
			  • Psychiatric disorders
			  • Progressive disorder
			• Skills
			  • Building resilience in the family
			  • Counselling of sensitive issues/situations

6.4.3 Proposed Timetable for 2 Weeks Block on Site

In order to ascertain the feasibility of the educational methods that are suggested for the proposed curriculum within the allocated time frame, a timetable for the 2 weeks block on site was drawn up and is shown in Table 41.

Table 41: Proposed Timetable for Block Period.

Monday	Tuesday	Wednesday	Thursday	Friday
Week 1 *Morning* Introduction Seminar and discussion on assessment *Afternoon* Resource time	*Morning* First visit to children's home for group assessment *Afternoon* Resource time	*Morning* First visit to severely disabled child *Afternoon* Resource time	*Day* Workshop on the selected assistive technology	*Morning* Second visit to severely disabled child to make assistive device *Afternoon* Resource time
Week 2 *Day* Workshop on the selected approach for treatment	*Day* Visit to home environment in rural area	*Morning* Second visit to children' home and presentation of group treatment *Afternoon* Resource time	*Day* Baby workshop and visit to NICU	*Morning* Group discussions on relevant topics *Afternoon* Integration and conclusion

The suggested timetable allows time for an introduction at the beginning of the block period and a conclusion at the end. These are considered of great importance for the purposes of providing structure and clarity about requirements for the course, allowing for interaction between group members and educators, building confidence and fostering a feeling of cohesion in the group. As was seen in 6.4.1, the development of professional socialisation is deemed to be very important in education and the introduction, conclusion as well as the suggested group discussions would contribute positively towards this.
Time is also allocated for 3 workshops as it was indicated in the literature (refer to 6.4.1) that this is a popular and valuable educational method for further training. Ample opportunity is allowed for visits and fieldwork as this is also regarded as necessary to obtain an advanced level of specialisation in clinical skills as was indicated in 6.4.1. In common terms this is what is known among therapists as *hands-on* experience.

A seminar on assessment is deemed necessary to allow for an in-depth discussion on all the issues with regard to the evaluation of young children. Practical work and research on assessment will have to be conducted in additional time to the block period. Ample resource time is allowed for because the students would need time to obtain study material, prepare for the fieldwork and workshops and reflect and integrate the knowledge that they obtain during the block period. A social event for the group during this period is a necessity and time should be made available for this after a day's work.

6.5 Summary

In this chapter the prescribed framework for the M ECI was described to indicate the structure within which the proposals for the curriculum should fit. The suggestions made for the curriculum incorporated the methodology of the prescribed framework, but other methods which seemed to enhance the training of the specific content that were proposed were also included.

An analysis of the research results and literature was done to provide a framework for the suggested content that followed. It was emphasised that although the proposed content for the curriculum was based on the results of this study, the final curriculum should include a comprehensive content, which would encompass the complete occupational process as was

described in 3.2. It is further important that the content of the curriculum should be directed towards the South African context as was described in Chapter 2.

The prescribed methodological framework for the M ECI was incorporated into the suggested educational methods for the occupational therapy module, but it was felt that a variety of educational methods were needed to encompass the different needs that were indicated by the research. The use of fieldwork or practicals and workshops were added as it seemed to be of paramount importance from the literature that experiences and skills be obtained in a practical way, as this is not possible in discussions and assignments on video taped case studies only. To reach the level of expertise and specialisation that would be desirable for therapists who completed the Master's Degree, the practicals and workshops were deemed necessary.

In conclusion, it is the firm belief of the researcher that valuable data was obtained on the training needs of occupational therapists in the field of early childhood intervention. It is the sincere hope of the researcher that the study results and the suggested framework for the curriculum of the specialised module will aid the educators who are responsible for the momentous task of developing and formulating the final curriculum.

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Appendix A

Aspects in Early Intervention to be Covered in the Questionnaire:

Background and Sub-aims	Reference	Aspects to be Covered
Biographical information on application of current services and skills.	In a country such as South Africa where developed as well as developing areas exist, therapists must be equipped to work on different levels of intervention and in different settings.	Levels: Primary, secondary and tertiary health care. Programmes: Prevention, remediation, habilitation. Settings: Private practices, schools, hospitals, clinics
Sub-aim 1 To determine the training needs for a theoretical framework for early intervention	"Occupational therapists desiring a speciality area such as early intervention are encouraged to seek either continuing education or advanced academic degrees".[89]	• Normal and abnormal development • Risk factors and conditions • Theoretical approaches: • Asset– based approach • Community development • Family approach • Human diversity • Teamwork • Management and Facilitation
Sub-aim 2 To determine the training needs for assessment of children with developmental delays	"Assessment models are required which reflect the child's potential for resilience and adaptability, and which illuminate a profile of strengths as well as weaknesses".[3]	• Asset- based models • Screening procedures • Standardized tests and norms for SA population
Sub-aim 3 To determine the training needs for treatment of developmental delays	"A fundamental premise of all early intervention work is that the disabling effects of impairments can be reduced, thereby enabling children to lead fuller lives".[3] "Occupational therapists, as part of early intervention teams, offer services that promote an infant's performance of self-help skills; adaptive behaviour and play; and sensory, motor, and postural development".[89]	• Treatment approaches and principles • Functional use of activities in play, self-help, and school readiness • Stimulation and home programmes • Adaptations and aids • Parent counseling • Case management {in a trans-disciplinary context}

Appendix B
Preliminary Questionnaire

Dear Colleague,

Research study to determine the training needs of occupational therapists for training in early childhood intervention.

The purpose of this research study is to contribute to the planning of a curriculum for a transdisciplinary Masters degree in Early Intervention to be presented by the University of Pretoria. For the purposes of this study, early intervention is defined as between 0 – 6 years.

The content of the enclosed questionnaire covers the contemporary trends indicated in national and international literature and research on early intervention. The results of the questionnaire will be applied in a scientific manner to compile a framework for a curriculum which will specifically address the training needs of the occupational therapist as part of the transdisciplinary team.

Participation in the study involves the completion of the questionnaire and return thereof in the self addressed franked envelope before 12 July 2000. Participation is voluntary and withdrawal from the study at any time is possible. **Receipt of a completed questionnaire will be regarded as consent of participation.** Non-participants are also requested to mail the uncompleted questionnaire to the researcher for statistical reasons.

In order to maintain confidentiality, personal identity or the name of the institution of employment are not requested in the questionnaire and, should it be known, will not be revealed at any time. **Anonymity will be strictly maintained throughout the study and publication of results.**

Your participation is of paramount importance for the success of the research study and will be greatly appreciated. It will contribute to the development of an advanced academic degree, based on scientific data, which will benefit the profession, therapists and the clients that we serve.

Kind regards

Ms MC Aronstam
Dept of Occupational Therapy

Respondent no. V1 [ ][ ][ ] 1-3 Card no. V2 [0][1] 4-5

Encircle the appropriate code where applicable or else give your answer in writing in the space provided

Office use

1. Biographical information

1.1 Total experience in the field of paediatrics [write in]

Years	Months		
[ ][ ]	[ ][ ]	V3	6-9
		V4	[ ][ ][ ][ ]

1.2 Experience in age groups [Previously and currently]

	Yes	No		
0 – 18 months [infants]	1	2	V5	10
19 – 36 months [toddlers]	1	2	V6	11
3 – 6 years [pre-schoolers]	1	2	V7	12

1.3 Field of practice [Previously and currently]

	Yes	No		
Mainstream school [grade o]	1	2	V8	13
Specialized school [pre-schoolers]	1	2	V9	14
Nursery school	1	2	V10	15
Crèche/ day care	1	2	V11	16
Private practice	1	2	V12	17
Institutions for the severely disabled	1	2	V13	18
Homes for children	1	2	V14	19
Training of students	1	2	V15	20
Primary health clinics	1	2	V16	21

Hospital:	Yes	No		
• in-patients	1	2	V17	22
• out-patients	1	2	V18	23
• neonatal intensive care unit	1	2	V19	24

Other [please specify]

• _____	V20	25
• _____	V21	26
• _____	V22	27
• _____	V23	28

1.4 Experience in Models of Teamwork

	Yes	No		Office use	
Multi-disciplinary teamwork*	1	2	V24	☐	29
Interdisciplinary teamwork**	1	2	V25	☐	30
Transdisciplinary teamwork***	1	2	V26	☐	31

* Multidisciplinary teamwork entails independent intervention from other team members, yet acknowledging their role and referring clients when necessary.

** Interdisciplinary teamwork entails independent intervention from other team members, but with shared responsibility and regular collaboration to formulate goals and provide a co-ordinated programme for therapy.

***Transdisciplinary teamwork entails intervention across disciplinary boundaries [role and skill sharing] and in close collaboration with other team members [including parents] to provide a fully integrated programme.

2. Community* Involvement in Early Intervention

*Community is regarded as a group of people living and fulfilling their life tasks in a given area, regardless of economic status.

Rate your current **experience** in community related issues in early intervention in the appropriate spaces according to the following scale:

No experience	Little experience	Moderate experience	Well Experienced
1	2	3	4

2.1 Experience in Human Diversity

Working with multi-cultural populations	1	2	3	4	V27	☐	32
Working in disadvantaged environments	1	2	3	4	V28	☐	33
Working in middle class and affluent environments	1	2	3	4	V29	☐	34

2.2 Experience in Community Development

Analyzing needs in a community	1	2	3	4	V30	☐	35
Analyzing assets in a community	1	2	3	4	V31	☐	36
Mobilizing resources in a community for support networks	1	2	3	4	V32	☐	37
Sustaining community involvement over a period of time	1	2	3	4	V33	☐	38
Educating the community with regard to disability	1	2	3	4	V34	☐	39
Integrating the family and disabled child into the community	1	2	3	4	V35	☐	40

3. Theoretical Framework for Early Intervention

Office use

Rate your current **need** for training on the following theoretical content related to early intervention according to the following scale:

No need	Little need	Average need	Great need
1	2	3	4

3.1 Knowledge of Specific Theories

Developmental theories	1 2 3 4	V36	41
Learning theories	1 2 3 4	V37	42
Motivational theories	1 2 3 4	V38	43
Cognitive – behavioural theories	1 2 3 4	V39	44
Psychosocial theories	1 2 3 4	V40	45
Model of Human Occupation	1 2 3 4	V41	46
Family systems and dynamics	1 2 3 4	V42	47
Other [Please specify and rate]			
• _____	1 2 3 4	V43	48 V45 50
• _____	1 2 3 4	V44	49 V46 51

3.2 Knowledge of Causes for Developmental Delay

Risk factors for developmental delay	1 2 3 4	V47	52
Handicapping conditions	1 2 3 4	V48	53

3.3 Knowledge of Early Development

	Normal	Delayed/ Abnormal			
• Sensory	1 2 3 4	1 2 3 4	V49	54	V58 63
• Motor	1 2 3 4	1 2 3 4	V50	55	V59 64
• Perception	1 2 3 4	1 2 3 4	V51	56	V60 65
• Cognition	1 2 3 4	1 2 3 4	V52	57	V61 66
• Speech and language	1 2 3 4	1 2 3 4	V53	58	V62 67
• Psycho-social	1 2 3 4	1 2 3 4	V54	59	V63 68
• Play	1 2 3 4	1 2 3 4	V55	60	V64 69
• Daily living skills [ADL]	1 2 3 4	1 2 3 4	V56	61	V65 70
• School activities	1 2 3 4	1 2 3 4	V57	62	V66 71

3.4 Legislation for Intervention

The legal rights of the family	1 2 3 4	V67	72
Ethics in the family-professional relationship	1 2 3 4	V68	73

Respondent no. V69 [ ][ ][ ] 1-3 Card no. V70 [0][2] 4-5

Office use

4. Assessment in Early Intervention

Rate your current **skills** on the following assessment procedures in early intervention according to the following scale:

No skills	Below average	Average	Good
1	2	3	4

4.1 Skills in Screening and Observation

Screening for developmental delays:			
• bat risk infants [0-18 months]	1 2 3 4	V71	6
• at risk toddlers [19-36 months]	1 2 3 4	V72	7
• at risk pre-schoolers [3-6 years]	1 2 3 4	V73	8
Skills in the observation of:			
• problems with regard to basic abilities	1 2 3 4	V74	9
• the effect of family-child interaction on the child	1 2 3 4	V75	10
• the needs of the family	1 2 3 4	V76	11
• the strengths / assets of the family	1 2 3 4	V77	12

4.2 Skills in Functional Assessment Procedures

Using tasks applicable to everyday events and situations	1 2 3 4	V78	13
Assessing the child in the home environment	1 2 3 4	V79	14
Assessing the child's functional skills in:			
• daily living (ADL)	1 2 3 4	V80	15
• play	1 2 3 4	V81	16
• school readiness	1 2 3 4	V82	17

4.3 Skills in Interpretation and Documentation

Interpretation of formal test results	1 2 3 4	V83	18
Identification of specific disorders	1 2 3 4	V84	19
Evaluate the family's insight into the disability	1 2 3 4	V85	20
Report writing	1 2 3 4	V86	21
Verbal communication of results to team members	1 2 3 4	V87	22

Office use

4.4 Use of Specific Developmental Tests and Surveys

Please specify and rate the formal or standardized tests are currently being used to assess children between o-6 years:

• _____	1	2	3	4	V88		23	V93	28
• _____	1	2	3	4	V89		24	V94	29
• _____	1	2	3	4	V90		25	V95	30
• _____	1	2	3	4	V91		26	V96	31
• _____	1	2	3	4	V92		27	V97	32

5. Treatment in Early Intervention

Rate your current **skills** on the following treatment procedures in early intervention according to the following scale:

No skills	Below average	Average	Good
1	2	3	4

5.1 Skills in the Application of Approaches and Techniques for Treatment

Sensory Integration [SI]	1	2	3	4	V98		33		
Neuro-developmental Therapy [NDT]	1	2	3	4	V99		34		
Learning techniques	1	2	3	4	V100		35		
Behavioural adaptation techniques	1	2	3	4	V101		36		
Bio-mechanical techniques	1	2	3	4	V102		37		
Play therapy	1	2	3	4	V103		38		
Group therapy	1	2	3	4	V104		39		
Other [Please specify and rate]									
• _____	1	2	3	4	V105		40	V107	42
• _____	1	2	3	4	V106		41	V108	43

5.2 Skills in Planning for Treatment

Planning aims of treatment	1	2	3	4	V109		44		
Evaluating the effectiveness of treatment in order to adapt	1	2	3	4	V110		45		
Analysis of tasks and activities to ascertain the requirements	1	2	3	4	V111		46		
Formulation of home programmes	1	2	3	4	V112		47		
Formulation of stimulation programmes for larger groups	1	2	3	4	V113		48		

No skills	Below average	Average	Good
1	2	3	4

Office use

5.3 Skills in Treatment of Basic and Functional Abilities

Sensory	1 2 3 4	V114	49
Motor	1 2 3 4	V115	50
Oral-motor	1 2 3 4	V116	51
Perception	1 2 3 4	V117	52
Cognition	1 2 3 4	V118	53
Psycho-social	1 2 3 4	V119	54
Play	1 2 3 4	V120	55
Daily living skills [ADL]	1 2 3 4	V121	56

Other [Please specify and rate]

• _____	1 2 3 4	V122	57	V124	59
• _____	1 2 3 4	V123	58	V125	60

5.4 Skills in Treatment of Specific Disorders

Sensory modulation disorders	1 2 3 4	V126	61
Developmental dyspraxia	1 2 3 4	V127	62
Attention deficit disorder and hyperactivity	1 2 3 4	V128	63
Visual impairment	1 2 3 4	V129	64
Learning disorder	1 2 3 4	V130	65
Behavioural and emotional disturbances	1 2 3 4	V131	66
Psychiatric disorders	1 2 3 4	V132	67
Neurological disorders and damage	1 2 3 4	V133	68
Progressive disorders	1 2 3 4	V134	69
Traumatized child	1 2 3 4	V135	70

Other [Please specify and rate]

• _____	1 2 3 4	V136	71	V138	73
• _____	1 2 3 4	V137	72	V139	74

5.5 Skills in Application of Principles and Adaptations in Treatment

Principles and adaptations to optimize participation in treatment:

• grading of treatment	1 2 3 4	V140	75
• structuring of environment	1 2 3 4	V141	76
• adaptations to activities	1 2 3 4	V142	77
• positioning of child	1 2 3 4	V143	78

Respondent no. V144 [ ][ ][ ] 1-3 Card no. V145 [0][3] 4-5

No skills	Below average	Average	Good
1	2	3	4

Office use

5.6 Skills in Adaptation through Assistive Technology

Splinting	1 2 3 4	V146 [ ] 6
Equipment for ambulation	1 2 3 4	V147 [ ] 7
Equipment for positioning	1 2 3 4	V148 [ ] 8
Power switch devices	1 2 3 4	V149 [ ] 9
Appropriate paper technology [APT]	1 2 3 4	V150 [ ] 10
Computer technology	1 2 3 4	V151 [ ] 11
Assistive devices for ADL	1 2 3 4	V152 [ ] 12
Other [Please specify and rate]		
• _____	1 2 3 4	V153 [ ] 13 V155 [ ] 15
• _____	1 2 3 4	V154 [ ] 14 V156 [ ] 16

5.7 Skills in establishing Therapeutic Relationships

• Therapist – child interaction	1 2 3 4	V157 [ ] 17
• Therapist – family interaction	1 2 3 4	V158 [ ] 18

5.8 Skills in Management

• Administration	1 2 3 4	V159 [ ] 19
• Organization	1 2 3 4	V160 [ ] 20
• Consultation	1 2 3 4	V161 [ ] 21

5.9 Building Resilience in the Family through facilitation of:

• child – parent interaction	1 2 3 4	V162 [ ] 22
• parent – directed problem solving	1 2 3 4	V163 [ ] 23
• parental ownership and responsibility for the child	1 2 3 4	V164 [ ] 24

5.10 Facilitating the handling of Sensitive Issues/Situations:

• bereavement in the family	1 2 3 4	V165 [ ] 25
• maternal depression	1 2 3 4	V166 [ ] 26
• detachment/rejection of the child	1 2 3 4	V167 [ ] 27
• trauma in the family	1 2 3 4	V168 [ ] 28
• neonatal intensive care unit [NICU]	1 2 3 4	V169 [ ] 29
• hospitalization of the child	1 2 3 4	V170 [ ] 30

Your time and co-operation in completing this questionnaire is greatly appreciated.

Appendix C

Report-back Form on Questionnaire for the Pilot Study

Dear Colleague,

Thank you for your participation in the pilot study. Please complete the questionnaire in full and write a critical evaluation under the headings provided in the form below. You may also make additional remarks directly on the questionnaire as well.

1 Clarity and Completeness of the Cover letter

2 The Exposition, Clarity and Completeness of the Questionnaire

3 The Usefulness of the Scales in the Questionnaire

4 The Content of the Questionnaire

5 The Time Taken to Complete the Questionnaire

6 Other comments

Thank you for your contribution. It is greatly appreciated.

Appendix D
Final Questionnaire
The Need for Occupational Therapists for training in Early Intervention in Childhood Disability

Research study for Master's Degree in Occupational Therapy

Dear colleague,

The purpose of this research study is to contribute to the planning of a curriculum for a transdisciplinary Master's Degree in Early Intervention to be presented by the University of Pretoria. The results of the questionnaire will be used to compile a specialised module for occupational therapists as part of the transdisciplinary team.

For the purposes of this study, early intervention in children is regarded as being between the ages of 0 – 6 years.

The content of the enclosed questionnaire covers the contemporary trends indicated in national and international literature and research on early intervention. The following aspects are covered in the questionnaire:

- Profile of Experience of Participants
- Training Needs for a Theoretical Framework for Early Intervention
- Skills in Assessment in Early Intervention
- Skills in Treatment in Early Intervention

In order to maintain confidentiality, personal identity or the name of the institution of employment is not requested in the questionnaire. **Anonymity will be strictly maintained throughout the study and the subsequent publication of results.**

Participation in the study involves the completion of the questionnaire and return thereof in the self addressed, franked envelope before 31 October 2000. **Participation is voluntary and receipt of a completed questionnaire will be regarded as consent of participation.**

Your name has been drawn from the OTASA address list. Your participation is of paramount importance for the success of the research study and will be greatly appreciated. It will contribute to the development of an advanced academic degree, based on scientific data, which will benefit the profession and the clients that we serve.

Please contact me for any enquiry at the following numbers:
(012) 803-3219 (home)
(012) 354-6040 (work)
(012) 329-3255 (fax)

Please return the questionnaire before 31 October 2000

Kind regards

Marlie Aronstam
Department of Occupational Therapy
University of Pretoria

Respondent no. V1 [ ][ ][ ] 1-3 Card no. V2 [0][1] 4-5

Encircle the appropriate code where applicable or else give your answer in writing in the space provided.

Office use

1. Profile of experience

1.1 **Total experience in the field of paediatrics** [write in]

Years	Months		
[ ][ ]	[ ][ ]	V3 [ ]	6-9
		V4 [ ][ ][ ][ ]	

1.2 **Experience in age groups** [Previously and currently]

	Yes	No		
0 – 18 months [infants]	1	2	V5 [ ]	10
19 – 36 months [toddlers]	1	2	V6 [ ]	11
3 – 6 years [pre-schoolers]	1	2	V7 [ ]	12

1.3 **Field of practice** [Previously and currently]

	Yes	No		
Mainstream school [grade 0]	1	2	V8 [ ]	13
Specialized school [pre-schoolers]	1	2	V9 [ ]	14
Nursery school	1	2	V10 [ ]	15
Crèche/ day care	1	2	V11 [ ]	16
Private practice	1	2	V12 [ ]	17
Institutions for the severely disabled	1	2	V13 [ ]	18
Homes for children	1	2	V14 [ ]	19
Training of students	1	2	V15 [ ]	20
Primary health clinics	1	2	V16 [ ]	21

Hospital:	Yes	No		
• in-patients	1	2	V17 [ ]	22
• out-patients	1	2	V18 [ ]	23
• neonatal intensive care unit	1	2	V19 [ ]	24

Other [please specify]

- _____ V20 [ ] 25
- _____ V21 [ ] 26
- _____ V22 [ ] 27
- _____ V23 [ ] 28

1.4 Experience in Models of Teamwork

Office use

	Yes	No			
Multi-disciplinary teamwork*	1	2	V24	☐	29

* Multidisciplinary teamwork entails independent intervention from other team members, yet acknowledging their role and referring clients when necessary.

	Yes	No			
Interdisciplinary teamwork**	1	2	V25	☐	30

** Interdisciplinary teamwork entails independent intervention from other team members, but with shared responsibility and regular collaboration to formulate goals and provide a co-ordinated programme for therapy.

	Yes	No			
Transdisciplinary teamwork***	1	2	V26	☐	31

***Transdisciplinary teamwork entails intervention across disciplinary boundaries [role and skill sharing] and in close collaboration with other team members [including parents] to provide a fully integrated programme.

1.5 Community* Involvement in Early Intervention

*Community is regarded as a group of people living and fulfilling their life tasks in a given area, regardless of economic status.

	Yes	No			
Working with multi-cultural populations	1	2	V27	☐	32
Working with disadvantaged clients	1	2	V28	☐	33
Working with middle class and affluent clients	1	2	V29	☐	34
Working with large groups of clients	1	2	V30	☐	35
Educating individuals and groups in the community with regard to disability	1	2	V31	☐	36
Referring the family to resources in the community	1	2	V32	☐	37

2. Theoretical Framework for Early Intervention

Indicate whether you **need** training on the following theoretical content related to early intervention.

2.1 Training needed on Specific Theories

	Yes	No			
Neuro-Developmental theories	1	2	V33	☐	38
Learning theories	1	2	V34	☐	39
Motivational theories	1	2	V35	☐	40
Cognitive–Behavioural theories	1	2	V36	☐	41
Psychosocial theories	1	2	V37	☐	42
Model of Human Occupation	1	2	V38	☐	43
Family systems and dynamics	1	2	V39	☐	44
Other [Please specify]					
• _____	1	2	V40	☐ 45	V42 ☐ 47
• _____	1	2	V41	☐ 46	V43 ☐ 48

Office use

2.2 Training needed on Causes of Developmental Delay

	Yes	No		
Risk factors for developmental delay	1	2	V44	49
Handicapping conditions	1	2	V45	50

2.3 Training needed on Early Development

	Yes	No		
Sensory	1	2	V46	51
Motor	1	2	V47	52
Perception	1	2	V48	53
Cognition	1	2	V49	54
Speech and language	1	2	V50	55
Psycho-social	1	2	V51	56
Play	1	2	V52	57
Daily living skills [ADL]	1	2	V53	58
School activities	1	2	V54	59

2.4 Training needed on Legislation for Intervention

	Yes	No		
The legal rights of the family	1	2	V55	60
Ethics in the family-professional relationship	1	2	V56	61

3. Assessment in Early Intervention

Please use the following scale to rate your **skills** on assessment procedures in early intervention:

No skills	Below average	Average	Good
1	2	3	4

3.1 Skills in Screening and Observation

Screening for developmental delays:

• at risk infants [0-18 months]	1 2 3 4	V57	62
• at risk toddlers [19-36 months]	1 2 3 4	V58	63
• at risk pre-schoolers [3-6 years]	1 2 3 4	V59	64

Skills in the observation of:

• problems with regard to basic abilities	1 2 3 4	V60	65
• the effect of family-child interaction on the child	1 2 3 4	V61	66
• the needs of the family	1 2 3 4	V62	67
• the strengths / assets of the family	1 2 3 4	V63	68

Respondent no. V64 [ ][ ][ ] 1-3 Card no. V65 [0][2] 4-5

No skills	Below average	Average	Good
1	2	3	4

Office use

3.2 Skills in Functional Assessment Procedures

Using everyday tasks, events and situations for assessment	1 2 3 4	V66	6
Assessing the child in the home environment	1 2 3 4	V67	7
Assessing the child's functional skills in:			
• daily living (ADL)	1 2 3 4	V68	8
• play	1 2 3 4	V69	9
• school readiness	1 2 3 4	V70	10

3.3 Skills in Interpretation and Documentation

Interpretation of formal test results	1 2 3 4	V71	11
Identification of specific disorders	1 2 3 4	V72	12
Evaluate the family's insight into the disability	1 2 3 4	V73	13
Report writing	1 2 3 4	V74	14
Verbal communication of results to team members	1 2 3 4	V75	15

3.4 Use of Specific Developmental Tests and Surveys

Please specify the norm based or standardized tests currently being used to assess children between 0-6 years:

• _____	V76	16	V83	23
• _____	V77	17	V84	24
• _____	V78	18	V85	25
• _____	V79	19	V86	26
• _____	V80	20	V87	27
• _____	V81	21	V88	28
• _____	V82	22	V89	29

4. Treatment in Early Intervention

Office use

Please use the following scale to rate your **skills** on treatment procedures in early intervention:

No skills	Below average	Average	Good
1	2	3	4

4.1 Skills in Treatment of Basic and Functional Abilities

Sensory	1 2 3 4	V90	30
Motor	1 2 3 4	V91	31
Oral-motor	1 2 3 4	V92	32
Perception	1 2 3 4	V93	33
Cognition	1 2 3 4	V94	34
Psycho-social	1 2 3 4	V95	35
Play	1 2 3 4	V96	36
Daily living skills [ADL]	1 2 3 4	V97	37
Other [Please specify and rate]			
• _____	1 2 3 4	V98	38
• _____	1 2 3 4	V99	39

V100 40
V101 41

4.2 Skills in the Application of Approaches and Techniques for Treatment

Sensory Integration [SI]	1 2 3 4	V102	42
Neuro-developmental Therapy [NDT]	1 2 3 4	V103	43
Learning techniques	1 2 3 4	V104	44
Behavioural adaptation techniques	1 2 3 4	V105	45
Bio-mechanical techniques	1 2 3 4	V106	46
Play therapy	1 2 3 4	V107	47
Group therapy	1 2 3 4	V108	48
Baby therapy	1 2 3 4	V109	49
Other [Please specify and rate]			
• _____	1 2 3 4	V110	50
• _____	1 2 3 4	V111	51

V112 52
V113 53

4.3 Skills in Treatment of Specific Disorders

Sensory modulation disorders	1 2 3 4	V114	54
Developmental dyspraxia	1 2 3 4	V115	55
Attention deficit disorder and hyperactivity	1 2 3 4	V116	56
Visual impairment	1 2 3 4	V117	57
Learning disorder	1 2 3 4	V118	58
Behavioural and emotional disturbances	1 2 3 4	V119	59
Psychiatric disorders	1 2 3 4	V120	60
Neurological disorders and damage	1 2 3 4	V121	61
Progressive disorders	1 2 3 4	V122	62
Traumatized child	1 2 3 4	V123	63
Other [Please specify and rate]			
• _____	1 2 3 4	V124	64
• _____	1 2 3 4	V125	65

V126 66
V127 67

Respondent no. V128 [ ][ ][ ] 1-3 Card no. V129 [0][3] 4-5

No skills	Below average	Average	Good
1	2	3	4

Office use

4.4 Skills in Planning for Treatment

Planning aims of treatment	1 2 3 4	V130 [ ]	6
Evaluating the effectiveness of treatment in order to adapt	1 2 3 4	V131 [ ]	7
Analysis of tasks and activities to ascertain the requirements	1 2 3 4	V132 [ ]	8
Formulation of home programmes	1 2 3 4	V133 [ ]	9
Formulation of stimulation programmes for larger groups	1 2 3 4	V134 [ ]	10

4.5 Skills in Application of Principles and Adaptations in Treatment

Grading of treatment	1 2 3 4	V135 [ ]	11
Structuring of environment	1 2 3 4	V136 [ ]	12
Adaptations to activities	1 2 3 4	V137 [ ]	13
Positioning of child	1 2 3 4	V138 [ ]	14

4.6 Skills in Adaptation through Assistive Technology

Splinting	1 2 3 4	V139 [ ]	15	
Equipment for ambulation (e.g. wheelchair, walking frame)	1 2 3 4	V140 [ ]	16	
Equipment for positioning	1 2 3 4	V141 [ ]	17	
Power switch devices	1 2 3 4	V142 [ ]	18	
Appropriate paper technology [APT]	1 2 3 4	V143 [ ]	19	
Computer technology	1 2 3 4	V144 [ ]	20	
Assistive devices for ADL	1 2 3 4	V145 [ ]	21	
Other [Please specify and rate]				
• _____	1 2 3 4	V146 [ ]	22	V148 [ ] 24
• _____	1 2 3 4	V147 [ ]	23	V149 [ ] 25

4.7 Skills in Establishing Therapeutic Relationships

Therapist – child interaction	1 2 3 4	V150 [ ]	26
Therapist – family interaction	1 2 3 4	V151 [ ]	27

4.8 Skills in Management

Administration	1 2 3 4	V152 [ ]	28
Organization	1 2 3 4	V153 [ ]	29
Consultation	1 2 3 4	V154 [ ]	30

No skills	Below average	Average	Good
1	2	3	4

Office use

4.9 **Skills in Building Resilience in the Family through Facilitation of**:

Child – parent interaction	1	2	3	4	V155		31
Parent – directed problem solving	1	2	3	4	V156		32
Parental ownership and responsibility for the child	1	2	3	4	V157		33

4.10 **Skills in Counselling of Sensitive Issues/Situations**:

Bereavement in the family	1	2	3	4	V158		34
Maternal depression	1	2	3	4	V159		35
Detachment/rejection of the child	1	2	3	4	V160		36
Trauma in the family	1	2	3	4	V161		37
Neonatal intensive care unit [NICU]	1	2	3	4	V162		38
Hospitalization of the child	1	2	3	4	V163		39

Your time and co-operation in completing this questionnaire is greatly appreciated.