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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

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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]

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- **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.

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- 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

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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.

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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]

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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.

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- *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

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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]

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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

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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

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	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.

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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.

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- **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]

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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.

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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.

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- **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.

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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

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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

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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.

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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.

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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.

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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.

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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.

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- 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.

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- 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

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(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

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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.

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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

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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.

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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.