

CHAPTER 2.

LITERATURE REVIEW.

2.1: INTRODUCTION.

The purpose of this study was to evaluate the effect that translating the MVPT-3's instructions into Afrikaans had on its reliability, when using the test to evaluate visual perception in South African 8-year-old Afrikaans speaking children. Literature on the following topics was researched in order to gain a background for the study;

- The characteristics and skills of 8-year-olds, including the differences between boys and girls,
- Visual perception, including the occupational therapist's role in the remediation of dysfunction,
- Motor-Free Visual Perception test, and the impact of culture on testing,
- Standardisation of tests to determine validity and reliability.

2.2: CHARACTERISTICS AND SKILLS OF 8-YEAR-OLDS.

According to Ambacher M^c Fall, Deitz and Crowe it is within the ages of 6 to 8 years that the most children get referred to occupational therapy. These children usually have one to two years schooling and are most commonly referred due to learning problems.¹ It was with this in mind that the researcher chose to investigate the 8-year-old population using the MVPT-3.

In South Africa an 8-year-old is usually in grade two, having completed one year of schooling.

2.2.1: GENERAL DEVELOPMENT.

- **Physical development:** Up until the age of 8 the child's physical growth has been fairly rapid. During the eighth year it starts to slow down, although the child's physical development is still steady. They start gaining greater control over the large muscles in their legs and arms, although their gross motor coordination is still slightly inconsistent. Their finger and eye hand coordination is also developing.¹⁰
- **Cognitive:** According to Piaget, the 8-year-old is just entering the stage of "Concrete Operations". This means that they are starting to understand and use different concepts that allow them to participate in their environment.¹¹ They have a basic understanding of numbers and understand the value of, as well as the use of money,¹⁰ and so enjoy bartering and bargaining, as they are able to evaluate an item's value in a more mature manner.¹² They have an attention span of approximately 20 minutes and are starting to understand the sequence in which events take place.¹⁰ Their ability to remember improves as well as their ability to deal with frustration and this allows them to reason deductively.¹¹ They are able to solve problems logically,¹¹ and can decide and think through actions that need to be taken in a given situation.¹⁰ They tend to stick to and enjoy problem solving,¹³ and being able to work independently when given direction.¹⁴ The 8-year-old is able to evaluate his/her own decisions deciding whether they were right or wrong.¹²
- **Emotions:** According to Kohlberg the 8-year-old child is in the stage of "Preconventional Morality". Within this period the child starts to become aware

of the standards that are set by others. ¹¹As a result of this, 8-year-olds develop realistic fears centered on their school, family and social circle, fearing that they might not measure up to the standards set. Eight-year-olds then try to measure up to these standards to avoid being punished, and rather seek rewards for good behaviour. ¹¹ Their self-image is built through experiences, which they felt were successful. They are still very sensitive to criticism¹⁰ and do not take failure easily.^{13, 15} Eight-year-olds tend to be very critical of themselves as well as others.¹⁴

- **Social interaction:** The 8-year-old is in what Eriksson describes as the stage of ‘industry versus inferiority.’ This means that they are able to separate reality from imagination and are starting to be able to do constructive work, because they are able to concentrate for longer periods of time. They are starting to master the expectations of their culture and are also learning to play with their peers,¹⁵ developing opinions about others¹⁰ as well as being aware of how others feel about them.¹⁴ The 8-year-old releases pent-up emotional tension through physical activities.¹⁰ Eight-year-olds tend to be outgoing, self-confident and social.¹⁴ They are no longer totally dependant on their parents and their parent’s recognition. They interact more with their peers and teachers, using them to fulfill their personal needs.¹⁵ They look for recognition and support from their parents¹⁰ as they become more aware of themselves within a social world.¹⁴ They enjoy new experiences and are interested in others and new cultures.^{12, 14} Although they tend to be slightly egocentric, they are starting to see another child’s or person’s point of view.¹³ Group work becomes more important as the 8-year-old matures

allowing him/her to develop a sense of belonging and security in groups.¹⁵ As the 8-year-old matures his friendships become closer and more positive.^{14,10}

- **Play:** Eight-year-olds become aware that they are able to influence events as well as their environment and this becomes a strong incentive evident in their play.¹⁶ This results in the 8-year-olds enjoying games with rules and regulations, which they will also make up as they go along.^{13, 14} Friends are very important and they tend to have a best friend and an enemy.^{10, 13, 14} They become more interested in real life games and less interested in fantasy games,^{14, 15} as this helps them to gain knowledge of a situation or experience, allowing them to learn how they should react.¹⁶ They will imitate new behaviours¹⁰ or friends to see how the experience feels,¹⁰ and enjoy it when they have mastered the behaviour.¹⁶ At this age you find that boys tend to play with boys and girls with girls.^{13, 14}

2.2.2: DIFFERENCES BETWEEN GENDERS AT EIGHT YEARS OLD.

According to Snell,¹⁷ Fong and Resnick there is no significant difference in the intelligence of males and females.⁹ During Snell's study of three different socio-economic groups, ranging from low to high, she found that South African boys were better listeners than girls in each socio economic group, which resulted in boys at this stage having better language development. Snell also found that girls did better on perceptual type tests, which involved an element of fine hand coordination.¹⁷ Boys on the other hand out performed girls in spatial related problems and this tendency increased until adolescence.¹⁷

However in motor development girls tended to out perform boys in fine eye hand coordination,^{17,9} and enjoyed doing schoolwork as it involved writing. Girls tended to write faster than boys and because of this, participate in activities that use their manual dexterity. Girls also have a better concentration and are more motivated than boys.¹⁷ Girls tend to accept class discipline more readily than boys and are more persistent when it comes to task completion.¹⁷

Boys on the other hand tend to perform better in activities using gross muscle development⁹ and eye hand coordination, using gross movement skills.¹⁸ This means that they prefer being involved in physical activities and find it difficult to sit still in the classroom. Boys tend to be involved in activities like kicking and throwing where their eye hand coordination is used. Boys also tend to be more aggressive than girls and so view school in a more negative light and have problems with obeying rules as set out in a classroom situation.¹⁷ Snell felt it was because of these negative behaviours and the fact that boys are harder to motivate, that more of them are referred for therapy than girls.¹⁷

Further differences between boys and girls are felt to be a reflection of social and cultural expectations and stimulations,^{9, 17, 19} rather than development. At this age a lot of gender related development takes place. Girls are expected to play with “girl” toys and boys with “boy” toys and participate in “girl” and “boy” activities. This may be the reason why they tend to segregate into different gender groups.¹⁹

2.3: VISUAL PERCEPTION.

According to Chandler, humans endeavor to understand and interpret the stimuli that they experience, by giving them meaning. He reports that the understanding and interpretation of the visual stimuli is the underlying process of human visual perception.²⁰

Visual stimuli are constantly experienced and fed to the central nervous system. Vision tends to dominate how we see the world and has a major influence on how we communicate with others, by influencing how we describe things in the world around about us.²⁰

2.3.1: DEVELOPMENT OF VISUAL PERCEPTION.

Zeitschel, Kalish and Colarusso proposed that visual perception develops firstly by recognizing an object (gross visual discrimination), secondly by analyzing the object (this is the ability to react to a specific component of the object), and finally by synthesizing (which is the ability to recognize the linear components).⁶

Newborns have rudimentary visual perceptual abilities that enable them to detect size constancy. They are able to see an object as a whole, but do not detect the fine details of that object. Within the first 4 months babies start to perceive motion because moving objects supply the child with more stimulation. They tend to see fast moving objects easier than stationary or slow moving objects.²¹ At the age of 4 months a child can fixate on a single object with both eyes. They also start to observe shape. Depth perception starts to develop between 5 months and 7 months. It is only at the age of 10 months that

an infant starts to observe the different parts of an object realizing that it makes a whole.

²¹ Below the age of 6 years whole objects are mainly observed and after this age the child starts to observe the different parts that make up a whole. ²¹ According to Zeitschel, Kalish and Colarusso the development of visual perception is most active between the ages of 5 to 8 years of age. ⁶

At the age of 8 a child learns to understand and make sense of letters and numbers. They also learn to write from the board allowing them to improve their visual motor integration skills. ²² The 8-year-olds will still reverse certain letters, ¹³ showing that their spatial perception is not fully developed, although they should know their right and left sides. ¹³ Their memory is improving ¹⁶ which helps with the development of their visual memory. Following this age, visual perception becomes more refined and then reaches a plateau at the age of approximately 12 years. ³

2.3.2: PROCESS OF VISUAL PERCEPTION.

Visual perception is a function of our eyes as well as our brain and is associated with reasoning. ²⁰ Visual images are seen as a whole rather than as parts but can be broken down into visual elements, for example line, shape, colour and texture. ²³ These images are received and interpreted by the brain. ⁴ According to Colarusso and Hammill, visual perception is not an independent process but involves the continuous interpretation and understanding of what is being seen at a given time. ³

Visual perception develops as the central nervous system matures but also depends on the experiences of a child.^{5, 6} Chandler states that visual perception is partly learned, but is also influenced by an individual's spatial skills, personality, gender, roles, environment, prejudice, age, values, motivators, motives and religious beliefs. He advocates that the basic processes of human perception are the same in all people, but that different interpretations are due to different environmental and temporal factors.²⁰

Visual perception is also influenced by sensory elements, i.e. light, sound, as well as cognition and language.²¹ Usually there is more than one sensory element present at any one time and so there is a process by which the stimuli are selected, segmented and integrated so that the person is able to understand the information.²¹ This course of processing and integrating the sensory stimulus greatly influences the result of what is perceived.²¹

Visual perception is reputed to involve different types of skills, which include form perception, spatial relations as well as constructional abilities.²⁴ Visual discrimination is said to be the foundation ability of visual perception and all processes develop from it. The different processes of perception (spatial relations, figure ground, visual closure, visual discrimination and visual memory) are interlinked but interdependent working together to enable a person to perceive and interpret an object correctly.³ Colarusso and Hammill believe that the critical factor of visual perception is how a child observes an object within his environment. This means that the child should be able to 'see' an object:

- in different spatial orientations,

- among other objects at a close distance,
- in relation to other objects or persons, and
- when only part of the object is seen.³

Colarusso and Hammill proposed that there is a reciprocal relationship between visual perception and cognition.³ Brekke, Williams and Follman supported this finding in identifying that spatial ability and the understanding of spatial relations is independent of intelligence, although intelligence is needed in understanding spatial cues in instructions as well as spatial relations.²⁵ Aslin and Smith found that language and cognitive- related factors influence the perceptual tasks of preschoolers and of older children.²¹ As a person ages it becomes more difficult to discriminate whether perceptual abilities are a result of perceptual mechanisms or of cognitive operations.²¹ Southey further reported that deficiencies in language, attention and memory have a more lasting affect on a person's functioning, than does visual perception.⁵

Jane Ayres, a well know occupational therapist, believed that visual processing was central to learning, and that visual processing included the other sensory systems, i.e. the vestibular system.²⁶ Hammill, Pearson and Voress suggested that visual perception is that function of the brain that organizes and interprets the physical elements of the visual stimulus, rather than the sensory elements of an object.²⁷ In order to understand the visual processes, it appears that visual perception of an object takes place before visual processing where the physical elements are processed along with other sensory stimuli.

2.3.3: THE IMPACT OF DYSFUNCTION OF VISUAL PERCEPTION ON PERFORMANCE.

Visual perception is necessary in order to allow a child or adult to plan a movement, as well as for reading and writing.^{3,16} In order to execute or complete a given task an individual calls on various systems within the body to help him/her to plan and effectively complete the task. Some of the systems he/she uses are the perceptual, cognitive, neurological and musculo-skeletal systems. The perceptual system helps the person to plan present, as well as future movements or actions, using the cognitive system to recall past performances in order to adapt these movements or actions. Impairment in any one of the systems can greatly influence how an action is planned and followed through which influences occupational performance.¹⁶ Reid and Jutai's finding that failure to receive and interpret visual information correctly, greatly influences a person's ability to function and go about their daily tasks, also confirm this.⁴

According to Chandler vision is closely linked to reasoning, especially in the western cultures. He suggests that vision influences how we see our world, and thus influences our descriptive language and vocabulary.²⁰ Colarusso and Hammill state that a child with visual problems has difficulty understanding letter forms and direction and this will limit progress with reading and consequently academic work.³ Furthermore if a child has visual perceptual problems and has not caught up to his peers by the age of 12 years of age he will develop into an adult with reading problems,³ this will then limit his future by narrowing his work opportunities. Occupational therapists assess and intervene to help a

child improve their performance in academic learning,³ and consequently their long-term opportunities.

2.3.4: THE ROLE OF THE OCCUPATIONAL THERAPIST WITH CHILDREN WITH VISUAL PERCEPTION DYSFUNCTION.

The occupational therapist's job is to assess a child and then explore ways in which the child can be helped to become fully functional in their daily lives.²⁶ According to Bundy, Lane and Murray, occupational therapists help develop a child's "self actualization",²⁶ which means helping the child to perform and interact as best they can within their physical and socio-cultural environment. This facilitates the child in the development of his/her motor abilities, self-concept and social identities.¹⁶

To achieve this the occupational therapist assesses the child's performance within the areas of his/her play, activity of daily living i.e. self-care, schoolwork, and communication abilities.¹⁶ The occupational therapist assesses the underlying mechanisms that support learning. These include fine motor skills as well as visual perceptual skills.³ The assessment would be incomplete without the use of a standardised perceptual test to assess the child's visual perceptual processing. The occupational therapist, based on evidence, believes that the standardised tests are valid and reliable so when they are used in the correct context for which they were designed, will identify learning difficulties in a child.³ In addition non-standardised assessment scales, supported by a series of clinical observations, based on the development of the child are also used.⁵

Research has proved that the areas of visual perception and visual motor coordination are a problem in clumsy children with learning difficulties.²⁸ It is these children that are referred to occupational therapy²⁹ needing to be diagnosed and effectively treated, assuming there is a direct relationship between visual perception and the learning processes in a child.³⁰

It is also important to observe a child's attitude to his schoolwork / activity as well as in new tasks, and to observe how he copes with frustrations.³¹ The occupational therapist must also be aware of the environment in which a child lives and how this could influence his/ her ability to perform academically. The environment can influence the child by giving the freedom to act or to ignore a problem, or by demanding a certain type of behaviour.¹⁶

The occupational therapist then treats the child in order to help with his/her occupational performance, which in the instance of a child is his/her scholastic achievement.²⁶ Each child's treatment is then designed to meet his/her own specific dysfunction.¹⁸

Standardised tests are then once again used, considering the correct test/retest conditions for which the test was standardised, to monitor how a child has improved and so direct any further treatment.³

2.4: MOTOR-FREE VISUAL PERCEPTION TEST.

Research indicates that a greater number of children with poor visual perceptual skills have poor motor skills, compared to those without,²⁸ but poor motor coordination appears to be characteristic of most children with learning problems.²⁴ While Leonard, Foxcroft and Kroukamp proved that visual perceptual and motor skills were two separate abilities,^{32, 2} Murray, Cermak and O'Brien suggested that some aspects of visual perception were related to clumsiness but that clumsiness did not necessarily mean that a child had visual perceptual problems.²⁴ On the basis of the above, Newcomer and Hammill proposed that the two abilities, visual perception and motor coordination, had to be separated and that a test had to be designed to test visual perceptual skills which excluded motor skills or coordination.³³ It was with this in mind that the original MVPT was designed.

Colarusso and Hammill used the following construction in designing the Motor-Free Visual Perceptual Test (MVPT). They described that the processes involved in visual perception are not independent of each other, but rather are interdependent and occur simultaneously.³ They also felt that the sub areas of perception were theoretical, but practically they were inseparable. They also felt that visual discrimination is the core/foundational ability underlying all visual perception, giving the person the ability to observe the differences and similarities between objects and pictures.³

The MVPT-3 is an updated version of the MVPT and MVPT-R test. New items have been added to the test and new standardisation data has enabled the test to be used over a

greater range of ages. The details of the new test items will not be discussed as they are not pertinent to the 8- year- old age group, but rather to the older age group. The new visual perceptual test items developed for the MVPT-3 reflect the understanding that perception and cognition go hand in hand and so does not provide different scores for the different processes of perception but rather results in a general score.³

The MVPT has been found to be an affective screening test especially when a large number of children need to be tested. The test takes only 10 –15 minutes to administer, not requiring a long period of concentration.² The MVPT was found to be one of the top 9 tests used by American occupational therapists used to assess children.³⁴ It is also widely used in South Africa as a screening test³⁰ although there has been criticism of the test because the MVPT only gives a global score of visual perception. Therapists find this problematic, as it does not really indicate where to start intervention.⁴

Brekke, Williams and Follman suggested that the MVPT was more useful in the evaluation of higher functioning children than those who were mentally challenged.²⁵ This may be due to the assumption of the authors that cognition goes hand in hand with visual perception,³ thus influencing their choice in test plates. The test was also standardised on children from the normal population.³

Due to the lack of funds in developing countries the occupational therapist as well as other professionals, i.e. psychologists, use assessment tools like the MVPT-3 that have been developed in another country, for example the USA.³⁵ These tests are often culturally biased, with contents specific to that culture.³⁶ Professionals often fail to

recognize the uniqueness of the culture and assume that the content of the test does not influence the ability of the child to perform. This can lead to misinterpretation of dysfunction as it has been proved that children from different cultures develop at different rates.³⁶

When a test is translated into another language it raises concerns about the language of standardisation versus the language of implementation. This can compromise the validity and reliability of the test as the translation may either cause subtle changes in meanings, or cultural interpretations of words may be evident.³⁵ Neuman, Greenberg, Labovitz and Suzuki translated Dunn's Sensory profile into Hebrew and found that the literal translation was difficult to achieve because of the change in the linguistic structure of the target language compared to the source language.³⁵ They also found that cultural influences on the language caused the children to react differently as they tended to interpret the questions differently, achieving a higher score when the test was presented in Hebrew than when given to them in English.³⁵ Language interpretations often also influence how a specific activity is undertaken.³⁷

Linge and Cameron evaluated the original MVPT's reliability using white, English speaking, South African children and proved the test to be temporally reliable.⁶ Southey also tested the temporal and internal reliability of the MVPT and found it to be valid when testing black South African children aged 6.0 to 6.9 years.⁵ Southey did not translate the test but administered it in English although English could have been their second language and this could have influenced her scoring.⁵

Bonder suggested that if a person is to fully comprehend the role that culture has on a person's performance, there should be a detailed evaluation of both the culture and the individual.³⁷ This leads to the question: What is culture?

2.4.1: CULTURE.

Krefting and Krefting describe culture as systems of learned behaviour patterns which are passed on from one generation to the next. These behavioural patterns are group orientated, directing group interaction with others and their environment. The behavioural patterns include everything that an individual learns as a member of the society.³⁸

According to Krefting an individual learns the guidelines for behaviour from his family, peers, and school as well as from his community in which he lives, he then interprets these guidelines individually.³⁸ Krefting suggests that culture has an unconscious affect on how an individual behaves.³⁸ Bonder suggests that culture is necessary for a human to develop, and that the cultural influences on an individual are not static but change as the person develops.³⁷ According to Krefting, culture is different to ethnicity.

Ethnicity is that part of the individual's identity that comes from being a member of a specific racial, religious or linguistic group. Ethnic groups can then differ within themselves due to education, and higher or lower socio-economic groupings.³⁸ In terms of this research this means that the Afrikaans group in the east of Pretoria will differ from that of the west due to the different educational and socio-economical levels. The expectations of the parents for their children will also differ,³⁹ for example parents in the

west may only expect their children to get jobs, whereas those in the east may expect their children to get college and university educations in order to get jobs.

All the above will have an affect on the outcome of a specific test administered to a specific culture and may lead to the level of difficulty of test items being different from culture to culture.³⁶ Baumgart and Halse question whether a test can ever be culture free,⁴⁰ although Whitford and Wilcock assure us that occupational therapy assessment protocols and guidelines are designed to be free of cultural influences,³⁹ but there has been criticism about cross-cultural validity of assessments that occupational therapists use. It is reported by Whitford and Willock that there is a gap between the therapists' knowledge of the different cultures and the theory they implement,³⁹ resulting in therapists having difficulty working with people from different cultures to themselves.³⁷

2.4.2: RELIABILITY AND VALIDITY OF A STANDARDISED ASSESSMENT TEST.

When choosing an instrument with which to test a child, it is very important that the therapist studies the test to make sure that it will provide her with the correct diagnostic results within the academic environment.⁴¹ The therapist must choose a test which competently measures the required area of function which the therapist wants it to measure (validity), and yields consistent results when repeated over a period of time (reliability).² According to Bailey it is also important to consider subject fatigue, motivation, learning, ability, the tester's skill and the test environment, all of which can

influence the test's reliability and should be considered when any standardised test is administrated to any type of child.⁷

2.4.2.1: RELIABILITY.

Reliability can be defined as the “consistency” or “repeatability” of a test like the MVPT-3. In other words does the test give us the same results each time it is implemented? Trochim says that reliability cannot be calculated but can only be estimated, due to the errors in tests, and for this reason there are different types of reliability.⁸

The traditional types of reliability are:

- a. *Temporal stability*,⁴² *Test retest Reliability*⁸ – refers to when a test instrument is given on two different occasions to the same people and similar results are obtained over time. The only problem with this type of reliability is that there could be learning/maturation that takes place due to the application of the test and the second group of results may differ from the first.⁴²
- b. *Form equivalence*,⁴² *Parallel forms Reliability*⁸ - is where two different test instruments based on the same content are given to the subjects.⁴² The problem with this type of reliability is that you have to have a lot of questions that cover the same content or area being examined.⁸
- c. *Internal consistency*^{42, 8} - this is where the Cronbach's alpha for the test scores is worked out.⁸ If no pattern is found in the students' answers it can be assumed that the test was too difficult and the students had to guess the answers.⁴² In this measure the consistency of the results are observed for various items within the construction of the test instrument. (MVPT-3)⁸

The Internal consistency is the reliability that is most frequently calculated, using the Cronbach's alpha to determine the reliability of a test.⁸

The authors of the MVPT-3 looked at different elements of reliability: The internal consistency³ of the test, to determine whether the MVPT-3 tests what it set out to test and test re-test (temporal) reliability to determine whether the tests results are consistent over time. Both of these positively concluded that the MVPT-3 can be used with individuals aged five and above.³

According to Chong Ho Yu reliability is necessary but not always sufficient for the validity of a test, as a test can be reliable (e.g. giving a constant weight) but not always valid (e.g. always being 500g out).⁴² This means that reliability does not necessarily mean that a test is valid, it is thus equally important to look at test validity.

2.4.2.2: VALIDITY.

The validity determines how well the test evaluates the field it is supposed to evaluate.⁴³

In the case of the MVPT-3 this would be how well it assesses visual perception. This is then called the construct validity, with visual perception being the construct.⁴³

According to Trochim construct validity can be divided up into:

- a. "Translation validity" which determines whether the test is a good representation of the construct of visual perception. This is done by assessing the face validity,

(on face value does it assess visual perception?), and content validity, (where the test is checked to contain the relevant areas of visual perception).

- b. “ Criterion-related validity”, which assesses whether the test evaluates the construct according to the theory that a person has about visual perception. In other words the performance of the test is checked against different criteria.⁴³

Trochim further breaks the Criterion-related validity into;

1. The predicative validity that asks the question whether the test is able to predict ability that it is theoretically constructed to predict. i.e. visual perception.⁴³
2. The concurrent validity, which evaluates whether the test distinguishes between groups that it should be able to distinguish between.⁴³ The authors of the MVPT-3 assessed this validity using the theory about visual perception when it comes to chronological age (visual perception skills increase as the individual gets older), cognitive ability (there being some type of correlation between visual perception skills and cognitive ability), academic achievement (showing a low correlation as visual perceptual skills are needed for learning) and other exceptional groups (a patient with head injuries is not expected to do as well as those without).³ They also assessed their theoretical view of the perceptual process, that it develops globally rather than in isolated parts.³
3. The convergent validity, which measures how well the test fares when compared to other tests that assess visual perception.⁴³ In the case of the MVPT-3 the authors assessed the correlation between the MVPT-3 and

the DTVP by Frostig, the DTVP-2, The Metropolitan Readiness Tests and the Durrell Analysis of Reading difficulties. The tests were proved to have significant correlation supporting a common variance.³

2.5: CONCLUSIONS FROM THE LITERATURE REVIEW.

An 8-year-old has reached the age where he/she is not growing physically fast, but steadily and is now developing cognitively. They have started to understand concepts and enjoy working on problems. Their concentration has improved and they are starting to become aware of the people around them. They are also becoming aware of the expectations that their culture, family and friends are putting on them, trying to avoid situations that prevent them from meeting these standards.

There is no significant difference between the genders as far as intelligence is concerned, although boys tend to do better in spatial related activities. Girls do better in fine hand coordination than boys, who tend to be more developed in gross motor coordination.

Their memory has improved which helps them with their visual memory. Their improved problem solving abilities allow the 8-year-olds to understand and interpret visual stimuli, which helps them when they are planning different types of movements, including moving within the environment, as well as writing. This means that the 8-year-old child is able to recognize and make sense of letters and words, being able to copy them from a blackboard.

Failure in any area will have a detrimental effect on the 8-year-old as he/she is sensitive to criticism, and this can lead to a poor self-image and impacting on his/her schoolwork.

It is the work of the occupational therapist to assess a child who is struggling at school with academic work to determine if he/she has deficits that occupational therapy can help, and then put together a treatment program that will be beneficial to that specific child. To enable the occupational therapist to do this she needs a perceptual test that is reliable, valid, appropriate and suitable for the specific culture of the child.

The MVPT-3 is a standardised test used to screen for visual perceptual problems. It is easy to use, does not have a motor element, does not take more than 10-15 minutes and is easy to score. In the standardisation of this test the authors tested its reliability and validity using an American and a Canadian population but each time the test was administered in English, even though it was administered to different ethnic groups. This led to the purpose of this study, which is to see if the test is reliable when translated into another language (i.e Afrikaans) and administered to another population with another culture (Afrikaans).

In order for the occupational therapist to assess a child she might have to translate the instructions of the standardised test so that it is appropriate for the language of the child. This can lead to problems, as it may influence the validity and reliability of the test. Neuman, Greenberg, Labovitz, Suzuku found that due to the difference in the original and target language it was not always possible to translate the test exactly from the

original language. They also found that sometimes there were different nuances in the target language for the words that would be lost/or gained in a literal translation and this could lead to the instructions being misinterpreted .³⁵