A REVISION OF A SECTION OF THE HEARING AND SPEECH SCALE
OF THE GRIFFITHS SCALES OF MENTAL DEVELOPMENT

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Submitted in partial fulfilment of
the requirements for the degree of

MAGISTER ARTIUM IN CLINICAL PSYCHOLOGY

in the
Faculty of Health Sciences
at the
University of Port Elizabeth

January 1998

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ACKNOWLEDGEMENTS

The completion of this study was a culmination of the support, encouragement, effort and enthusiasm of many individuals. I would therefore like to express my sincere appreciation and thanks to each of the following:

My supervisors, Professor Dolores M. Luiz and Professor Cheryl D. Foxcroft, who provided invaluable guidance, support and expertise throughout the course of this study.

Mr Philip Collier for his patience and assistance with the statistical analysis.

Mrs Liza Jachens, for her assistance, willingness and patience in the collaboration of the children, schools and researchers for the collection of the data.

Miss Helen Kotras, for her assistance and invaluable contributions in proof reading the chapters.

The researchers, fellow interns and masters students for their assistance in the collection of the data.

The pre-school teachers and parents who allowed their children to be involved in the study.

The children themselves, who participated in the study, as without them there this would not have been possible.

The CSD whose financial assistance made a significant contribution to the completion of this study. The opinions expressed or conclusions reached are those of the researcher and should not be regarded as a reflection of the opinions and conclusions of the CSD.

The Association for Research in Infant and Child Development whose financial and research assistance contributed enormously to the completion of the study.

My family, whose support, love, patience, humour and encouragement over the years made this work possible.

My final thanks and acknowledgement, to the Almighty, with whom all things are possible.

I dedicate this treatise to my niece, Bianca Christina Augoustatos
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ABSTRACT

Since the introduction of the Griffiths Scales of Mental Development (Griffiths Scales) in the United Kingdom (1950) and South Africa (1977) they have become widely used and researched, both at a national and international level. Studies completed in South Africa have demonstrated the invaluable role the Griffiths Scales have fulfilled in the assessment of South African children of all cultural and socio-economic groups. However, research has indicated a need for the revision of the scales specifically relating to social and cultural factors that influence performance.

The aim of this study was two-fold, namely: (i) to revise the 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales, making them more culturally relevant for the children of our contemporary world, and especially in South Africa; and (ii) to describe the performance of South African children, between 60 and 83 months of age, utilizing the revised pictures.

For the qualitative component of the study a questionnaire pertaining to the small and large “Experimental pictures” was completed by the participants. The participants consisted of the executive committee members of the ARICD in the United Kingdom. Additionally 17 “expert” Griffith’s users and “lay-experts” working in early childhood development throughout South Africa, were included. Their responses were content analyzed and incorporated into the Experimental pictures. This resulted in the development of the Revised Griffiths pictures.

The quantitative component of the study utilized two sample pools. Sample 1 (n=204) and Sample 2 (n=180) were comprised of pre-school children aged between 60 and 83 months. Sample 1 was utilized for the 20 small revised pictures and the large revised SA picture, while sample 2 was utilized for the 20 small revised pictures and the large revised United Kingdom/ European/Australian picture. Furthermore, both samples, consisted of children from all cultural, socio-economic, language, and gender groups.
The major findings of the present study were as follows:

1. Referring to sample 1, only the White and Indian pre-schoolers correctly identified a mean number of small pictures above that which was proposed by Griffiths (1960). The Coloured pre-schoolers almost identified Griffiths (1960) proposed number.

2. Referring to sample 2, all excepting the Black pre-schoolers correctly identified Griffiths’ (1960) proposed mean of small pictures.

3. All children from sample 1 and sample 2 were able to identify more stimuli from the large revised pictures, than was proposed by Griffiths (1960).

4. All four cultural groups from samples 1 and 2, elicited a mean number of descriptive words below Griffiths’ (1960) proposed criteria.

5. White pre-schoolers from sample 1 elicited a mean number of descriptive sentences above Griffiths’ (1960) proposed criteria.

6. White and Coloured pre-schoolers from sample 2 elicited a mean number of descriptive sentences above Griffiths’ (1960) proposed criteria.

7. All four cultural groups from sample 1 and sample 2, elicited a mean number of personal or possessive pronouns below Griffith’s (1960) proposed criteria.

8. A general trend noted for the four cultural groups of both samples, was that the percentage of children who passed successive age-appropriate items, did not decrease stepwise as would be expected from the placement of items in order of difficulty.

In view of the latter finding, it is recommended that for South African children the placement of the items for the small and large pictures of the Hearing and Speech Scale should be revised in terms of their order of difficulty. It is furthermore recommended that separate norms for South African children be established for the Hearing and Speech Scale.

Key words: Griffiths Scales; Developmental Assessment; Speech and Language; South Africa; Britain; Non-contemporaneous; Culture-fair; Revision; Pictures; Scoring Criteria (1960).
Sedert die bekendstelling van die Griffiths Skaal vir Verstandelike Ontwikkeling (Griffiths Skale) in die Verenigde Koningkryk (1950) en Suid - Afrika (1977) is dit op Nasionale en Internasionale vlak gebruik en nagevors. Studies wat in Suid - Afrika voltooi is, het daarop gedui dat die Griffiths Skaal ‘n waardevolle rol speel in die evaluering van kinders van alle kulture en sosio-ekonomiese groepe in Suid - Afrika. Navorsing het egter aangedui dat daar ‘n behoefte bestaan om die Skale te hersien, veral met betrekking tot sosiale en kulturele faktore wat prestasie beinvloed.

Die doel van die studie was tweeledig: naamlik (1) die hersiening van die 20 klein prente en die groot prent van die Spraak en Gehoor Skaal van die Griffiths Skale. Die doel was om die prente meer relevant te maak met betrekking tot kultuur en die kontemporêre wêreld, veral in Suid - Afrika en (2) om die prestasie van Suid - Afrikaanse kinders tussen die ouderdomme van 60-83 maande te evalueer en te beskryf deur gebruik te maak van die hersiene prente.

Vir die kwalitatiewe komponent van die studie ‘is n vraelys, met betrekking tot die “Eksperimentele prente”, is voltooi deur die deelnemers. Die deelnemers het uit die uitvoerende komitee van die ARICD in die Verenigde Koningkryk bestaan. Adisioneel tot hierdie groep is is daar gebruik gemaak van 17 Griffiths “kenners” en “leke-kenners”, in Suid – Afrika, wie in die veld van kinder ontwikkeling werk. Die antwoorde is geanalyseer deur middel van inhouds analyse en is geïnkorporeer in die eksperimentele prente. Die resultate het aanleiding gegee tot die ontwikkeling van die hersiene Griffiths prente.

Die kwantitatiewe komponent van die studie het gebruik gemaak van twee steekproef groepe. Steekproef 1 (n=204) en Steekproef 2 (n=180) het bestaan uit voorskoolse kinders tussen die ouderdomme van 60-83 maande. Beide steekproewe het kinders ingesluit uit alle kultuur groepe, verskillende sosio-ekonomiese vlakke, verskeie tale en beide geslagte. Steekproef 1 is gebruik vir die 20 klein hersiene prente en die groot, Suid - Afrikaanse hersiene prent. Steekproef 2 is gebruik vir 20 klein hersiene prente en die hersiene Verenigde Koningkryk/Europese/Australiëanse prent.
Die hoof bevindinge van die huidige studie was soos volg:

1. In Steekproef 1 het slegs die Wit en Indiër voorskoolse kinders 'n hoër gemiddelde getal klein prente korrek herken as wat deur Griffiths (1960) voorgestel is. Die Kleurling voorskoolse kinders het byna Griffiths (1960) se voorgestelde gemiddelde getal prente herken.
2. In Steekproef 2 het alle groepe behalwe die Swart groep voorskoolse kinders die voorgestelde gemiddeld van Griffiths (1960) se klein prente korrek geïdentifiseer.
3. Al die kinders van Steekproef 1 en 2 het meer stimuli geïdentifiseer van die groot hersiene prent as wat deur die Griffiths (1960) kriteria voorgestel is.
4. Al die kulturele groepe van Steekproef 1 en 2 het minder beskrywende woorde gebruik as wat deur die Griffiths (1960) kriteria voorgestel is.
5. Wit voorskoolse kinders van Steekproef 1 het meer beskrywende sinne geïdentifiseer as die gemiddelde wat deur die Griffiths (1960) voorgestel is.
6. Wit en Kleurling voor-skoolse kinders van Steekproef 2 het meer beskrywende sinne geïdentifiseer as die gemiddelde wat deur die Griffiths (1960) voorgestel is.
7. Al vier die kulturele groepe van Steekproef 1 en 2 het minder persoonlike of besitlike naamwoorde gebruik as die gemiddelde wat deur Griffiths (1960) voorgestel is.
8. 'n Algemene tendens van al die kulturele groepe van beide die steekproewe, was dat die persentasie van kinders wat die opeenvolgende ouderdoms-korrekte items geïdentifiseer het, se tellings nie stapsgewys verminder het soos wat verwag sou word van die orde van moeilikheidsgraad nie.

In die lig van die bogenoemde bevindinge kan dit voorgestel word dat die orde van die moeilikheidsgraad van die items in die klein en groot prent van die Spraak en Gehoor skaal hersien word vir Suid-Afrikaanse kinders. Dit kan verder voorgestel word dat aparte norme vir die Suid-Afrikaanse kinders opgestel word vir die Spraak en Gehoor skaal.

Kern woorde: Griffiths Skaal; Ontwikkelings Evaluasie; Spraak en Gehoor Skaal; Suid-Afrika; Britanie; Nie-Kontemporêre; Kultureel regverdig; Hersien; Prente; Nasien Kriteria (1960).
Chapter one provides the background to the present study. The need for a developmental assessment focus is argued followed by a discussion of the social context of South Africa, the problems faced when testing in a multi-cultural society, the Griffiths Scales, language development and the concept of intelligence. The research problem and aim of the study are presented. Finally an outline of the chapters is provided.

DEVELOPMENTAL ASSESSMENT

The term *development* is defined as "orderly and relatively enduring changes over time in physical and neurological structures, thought processes, and behaviour" (Mussen, Conger, Kagan & Huston, 1984, p.4). One goal of studying development is to understand changes that appear to be universal. Another is to explain individual differences among children, a third is to understand how a child's behaviour is influenced by the context or situation in which they live (Mussen, et al., 1984), and a fourth is the early identification of possible developmental delays.

Perhaps the most distinguishing features of psychological approaches to the study of human development, are the assumptions of underlying continuities between behaviours at different points in the life span, and the attempt to understand how interactions between the individual and the environment at one point in time, make possible more elaborate interactions at some later point in time. A simple example concerns the question of continuities between early motor abilities, such a crawling and reaching, and later more sophisticated abilities, such as walking and pointing (Oskaar, 1983). Generally, developmentalists take the view that it should be possible to examine the ways in which infants and young children interact with the physical world and with other people, and to determine how they develop and change as a result. The behaviour of very young children is often highly complex, as for example in the case of language (Gesell & Ilg, 1946; Bloom, 1978). Needless to say, when developmental psychologists are studying language, the environment includes not only the physical environment provided by objects and materials, but also the social environment provided by other people (Bloom, 1978).
Holt (1979) has comprehensively summarized the necessity of assessment in childhood as follows: "Any child who is suspected of having congenital defect or deformity, a medical disorder, an impediment to educational progress or social activities or any deficiency of opportunities, is a potentially handicapped child and should be assessed" (p.151).

Holt (1979) further adds that:

Handicap is not a medical, educational or social problem to be treated, trained or counselled, but it is a burden which is impending a child's development. Our task is to ease this burden and so promote the development of the person. Comprehensive assessment is the cornerstone of this work (p.161).

Hence, the need for developmental assessment of infants and young children is crucial in the early identification of any possible handicaps. Information gained from assessments, serves not only as a tool for the correct diagnosis of the handicap, but also assists in the construction of appropriate intervention programmes (Alridge-Smith, Bidder, Gardner & Gray, 1980; Griffiths, 1984). The early identification of children who have special needs, is widely recognised as being of primary importance in assisting them to realise their potential. The Griffiths Scales of Mental Development (Griffiths Scales) play a pivotal role in this process (Luiz, 1994).

Developmental problems, which are first evident in infancy or early childhood, interfere with the future development of the child and may cause a life time of lowered untapped potential. Assessing a child incorrectly, because of an unreliable and/or invalid instrument, due to for example cultural bias, is just as dangerous, if not more dangerous, than not assessing a child at all. Furthermore, utilizing items which are non-contemporaneous can also have far reaching negative outcomes for the individual being assessed. In this connection there is a strong awareness of the need for a reliable, valid and contemporary assessment instrument for pre-school children. This is especially true when one looks at the social situation of the children of South Africa (Allan, 1992; Bhamjee, 1991; Stewart, 1997).
THE SOCIAL CONTEXT OF SOUTH AFRICA

South Africa is an immensely diverse nation, in terms of the cultures, languages, political affiliations and socio-economic status of our people. The future lies with our children, and hence they should be afforded every opportunity to derive maximum benefit from their new found circumstances. The South African society was divided along racial lines, for many decades. The Apartheid era has left Black children disadvantaged, many of whom are in need of assistance. The socio-economic and health status of South African Black, Coloured and Indian children is generally lower than that of White South African children. On average the infant mortality rate (IMR) of the country is 41.8 per 1000 live births. The IMR figures differ amongst the four cultural groups. These differences in infant mortality reflects the inadequacy of prenatal and neonatal care, the inability of health staff to attend births, and the sub-optimal living conditions and health of certain cultural groups in South Africa (Rip, Bourne & Woods, 1989).

At present, the total population of South Africa is approximately 41.5 million people. Research (Central Statistics Service, 1995) has indicated that more than three quarters (76%) of all South Africans are Black, while fewer than one in seven (13%) are White. Approximately one in every ten (9%) South Africans are Coloured and one in every thirty (3%) are Indian. Statistics show that the overwhelming majority of South African children are Black. Of the total population, 19.4 million (46.8%) are children under the age of 19 years, while almost 5.31 million (13%) are under the age of 5 years. The estimation is that this figure will rise to approximately 7.6 million by the year 2000. Consequently there is a greater need for assessment instruments for the historically disadvantaged groups in South Africa.

- the classification of South Africans as White, Black, Coloured and Indian is retained, so as to be in accordance with the Central Statistics Service (1995, 1996).
The 1995 October Household survey (OHS) indicated that 50% of the entire South African population live in urban areas, and 50% live in rural areas, in all nine provinces that constitute the country. Although half of the population live in rural areas, the distribution of people in urban and rural areas varies according to race. Almost two-thirds (63%) of the Black population live in rural areas as opposed to a far smaller proportion of Coloureds (16%), Indians (5%) and Whites (9%). Approximately 3.3 million children under the age of 5 years are living in the homelands. These children are especially deprived, due to the fact that education, health, and welfare services in these areas, tend to be weaker than in the rest of South Africa.

The extent of underdevelopment that the Black population of South Africa endured under apartheid, is clear when one looks at the age distribution of the South African population by age and gender. The distribution by age amongst Blacks, resembles the typical age-pyramid of developing countries. A large proportion of people are infants and young children, while among those aged 15 years and older, the proportion of people in each age category steadily decreases. Among Coloureds and Indians, statistics indicate that a transition profile of age distribution is emerging. The findings portray a situation which is somewhere between developing and developed countries. Among Whites, the findings indicate a profile which is typical of industrialized countries. There are proportionately fewer infants, pre-school children and children of school going age, compared to other population groups, while the proportion of older children is increasing. In other words, South Africa has a relatively young and expanding Black population, compared with the Coloured and Indian populations, and an ageing, shrinking White population (Development Bank of South Africa, 1995).
The educational services in South Africa are at present, a key area of discussion. In the past, access to education was not equally available to all South Africans. As a consequence, educational attainment among South Africans varied by race. Despite the findings which indicate a large discrepancy in access to education amongst Black people compared with Coloureds, Indians and Whites, the situation has shown a steady improvement over time. The OHS (1995) indicated that only 3% of Blacks aged 10 to 14 years, and 2% of Blacks aged 15 to 19 years, have received no education. This figure increases to 12% in the 35 to 49 year age-range; 29% in the 50 to 54 year age-range; 40% in the 60 to 64 year age-range; and finally to 56% in the 65 years or more age-range. Therefore, proportionately more people are entering schools over time, in order to obtain at least some basic education. In South Africa the literacy rate, which is defined as the percentage of people 13 years and older who have at least passed standard five, is 61.4% (Development Bank of South Africa, 1995).

Research indicates that there is a high pupil-teacher ratio in schools for Black children, and in many instances, many of the teachers are under qualified and schools have neither books or electricity. The Department of National Education's Educational Renewal Strategy (ERS) suggests pupil-teacher ratios of 35:1 for primary schools and 32:1 for secondary schools. Approximately 0.3% of the total population of South African attend pre-school; 13% attend primary school; while 0.09% are in special education (Development Bank of South Africa, 1995).

Approximately one in every 20 people (5%) in the country are reported to be disabled. The findings indicate that approximately 2.5% of the population have visual disability, 0.7% have a hearing or speech disability, 1.4% have a physical disability, 0.4% have a mental disability, and 0.3% have multiple disabilities, as indicated in figure 2. These figures may be an undercount, due to the stigma attached to certain types of disabilities. A similar proportion of males and females, Blacks, Coloureds, Indians and Whites, and those living in urban or rural areas (approximately 5% in each case) are reported to be disabled. There is a higher proportion of disability amongst older people compared to younger people. For example, only one in every 100 infants (1.3%) and pre-school children aged between 0 and 4 years are disabled, compared to one in every five people (19.6%) aged 65 years and older. Black people tend to develop disabilities at an earlier age than do people of other population groups. The findings indicate that amongst the Black population, the proportion
of disabled people increases slowly between the ages of 0 to 34 years (from 1.3% of all those aged 0-4 years to 4.4% of those age 30-34 years). After 35 years of age the proportion of disabled people begins to rise more readily (Central Statistics Service, 1996, 1997).

Figure 2
Percentage of the population with a disability

The South African situation is further complicated by the fact that the various groups are further subdivided into many cultural groups and each group speaks a different language or dialect, as depicted in figure 3 (Central Statistical Service, 1996). Furthermore, by virtue of South Africa's past political system, the socio-cultural and educational system for each group, has been developed independently from each other. Conversely, all population groups are expected to compete in a Western, industrially developing society. Consequently, the cultural and educational discrepancies existing between the various population groups, may compound the problem of constructing a single developmental evaluation measure for all South African children.
The assessment of children belonging to various cultural groups has received growing attention world-wide. In a multicultural society, such as South Africa, the practical problems facing cross-cultural assessment have mainly been associated with subcultures within a dominant culture. Anastasi (1982) stated that during all stages of development, heredity and environment interact and therefore shape human behaviour. Each culture encourages the development of behaviour that is adapted to its own values, norms, and demands. Since behaviour is influenced by culture, and since psychological assessment is a sample of an individual's behaviour, cultural influences are likely to be reflected in the person's test performance. Biesheuvel (1987a) highlighted the importance which factors such as culture, home background, formal schooling and nutrition, have on an individual's intelligence.

There is considerable evidence to suggest that interest in cross-cultural research is growing. With this growth has come the need to adapt (commonly called "translate") achievement, developmental, aptitude and personality tests, as well as psychological instruments, for use in multiple cultures and languages (Hambleton, 1994). Hambleton (1994) reported certain guidelines for adapting educational and psychological tests. The terms "adaptation" and "revision" are used interchangeably in the present study. These terms refer to the process involving the preparation of a test or instrument for use in a
second language or culture. Hambleton (1994) defined an instrument adaptation guideline as "a practice which is judged as important for conducting and evaluating the adaptation or parallel development of psychological and educational instruments for use in different populations" (p.233).

Manaster and Havighurst (1972) proposed that a "culture-common" test should have the following characteristics:

(i) it should tap aspects of cultural experience which are common to all people to whom the test will be administered;
(ii) it should be designed to have virtually the same degree of intrinsic interest for the different cultural groups to whom it will be administered;
(iii) it should use a form of language which is widely familiar; and
(iv) the directions should be stated in simple, operational terms which are easily understood.

The suggested guidelines (Hambleton, 1994) and proposed characteristics (Manaster & Havinghurst, 1972) were both incorporated into the present study.

The utilization of instruments which have neither been developed nor standardized in a particular culture, can prove to be biased and thus have long term implications for the individual involved. This raises the question of constructing a single test which can be utilized exclusively for a particular culture. However, the cultural and educational discrepancies existing between the various population groups, may compound the problem of constructing a single test for all South African children. Since the construction of a single test is fraught with many difficulties, an alternative approach has been put forward. This involves taking an existing culture-fair test, which is widely used in many countries around the world, and adapting it for use in all population groups of South Africa. This is where the Griffiths Scales of Mental Development (Griffiths Scales) play a critical role.

PROBLEMS FACED WHEN TESTING IN A MULTICULTURAL SOCIETY

Holt (1974) stated that as unobtrusive developmental variations and delays may be the first indication of serious conditions, early assessment of the potentially handicapped
child is of vital importance. Furthermore, it is emphasized that developmental delays may also reflect adverse environmental conditions, such as abuse and child battering in general.

The assessment of children in South Africa has entered a new era. There is increasing recognition that children from various cultural backgrounds need to be assessed. This is especially true for pre-school and kindergarten children who wish to obtain their education in a multi-cultural setting. This growing need brings forward the requirement for a "culture-reduced" instrument, that will allow for "culture-fair" assessment (Allan, 1992; Luiz, 1994).

Before such an instrument is adapted, investigations into the demographic factors of South African children need to be conducted. A dire need exists for developing a single, valid, reliable, contemporary and culture-fair test, for use in the assessment of infants and young children of all population groups in South Africa. However, this task is not only highly difficult and rare, but also time consuming and financially costly.

The developmental assessment of infants and young children, has been widely acknowledged as crucial in the early detection and intervention of any possible disability. Information obtained from assessment measures, serves not only as a tool for the correct diagnosis of any disability, but can also assist in the construction of appropriate intervention programmes (Bhamjee, 1991; Luiz, 1994).

Despite a concerted effort by researchers to address the need for the more reliable and valid assessment of pre-school South African children, the following shortcomings are evident:

(i) The existing developmental assessment measures are not comprehensive, with most tests, except the Griffiths Scales, focusing on specific aspects of development or providing a mere screening measure (Luiz, 1994).

(ii) Specific tests are standardized for specific cultural groups to the exclusion of others (Luiz, 1994), and there are limited standardized tests available to assess the development of 84% (OHS, 1995) of the pre-school population, namely, Black pre-school children.

(iii) Specific tests are standardized for specific age groups to the exclusion of others. The available South African assessment instruments do not provide for the age
range from birth to three years of age. This is evident even for White South African children, the cultural group for whom most of the tests are standardized (Luiz, 1994).

(iv) Due to the specificity of tests regarding age ranges and cultural groups, related research is fragmentary in nature, resulting in limited generalizability of findings (Luiz, 1994).

(v) Specific items within "culture-fair" tests are non-contemporaneous.

The above mentioned shortcomings have serious pragmatic implications. When a young Black, Coloured, Indian or White child younger than 3 years needs to be developmentally assessed, the testers are required to use instruments that are not standardized for these groups. The dangers in using a test on pre-school children who form part of a population which was not representative of the normative sample, have far reaching ramifications. Furthermore, due to the afore-mentioned shortcomings, it is evident that there are gaps in the assessment of the development of young children in South Africa. In order to fill such gaps, there is an urgent need to establish a valid, reliable test that covers the important aspects of development, and includes items for the first three years of life for the assessment of all South African infants and pre-school children. Since the construction of a single test is fraught with many difficulties, an alternative approach has been put forward. This involves taking an existing "culture-fair" test, which is widely used in many countries around the world, and adapting it for use in all population groups of South Africa (Allan, 1988, 1992; Bhamjee, 1991; Heimes, 1983; Luiz, 1994; Tukulu, 1996). This has already been carried out in South Africa on numerous occasions. Examples include the Minnesota Multiphasic Personality Inventory (MMPI) which has been adapted for use with Coloured and White South African children (Hart, 1970; Shillington, 1988); Foxcroft (1985) adapted the Reitan-Indiana Neuropsychological Test Battery (RINTB) for White, Coloured and Indian children; the Institute of Behavioural Science have adapted a variety of cognitive tests for use with Black children (Griesel & Richter, 1986; Griesel & Richter-Strydom, 1983); Allan (1988) adapted the Griffiths Scales for 5 year-old White English and Afrikaans South African children; Bhamjee (1991) adapted the Griffiths Scales for 3 to 8 year-old Indian children; and Tukulu (1996) for Xhosa speaking children.

In summary, future research on the Griffiths Scales need to focus on adapting the Scale, taking into account those biographical and social factors which previously mentioned studies (Allan, 1988, 1992; Bhamjee, 1991; Mothuloe, 1990; Heimes, 1983; Luiz, 1994;
Stewart, 1997; Tukulu, 1996;) have found to have a significant influence on performance. Progress could hence be made towards an assessment instrument which is more "culturally-neutral" and contemporaneous for all the children of South Africa.

**GRIFFITHS SCALES**

Since the introduction of the Griffiths Scales into South Africa 20 years ago, a considerable gap has been filled in the developmental assessment of infants and young children. Furthermore, the contribution made by the Griffiths Scales is also evident in the United Kingdom since its introduction in 1954. To date the Griffiths Scales have been successfully utilized in South Africa on a wide-range of population groups (Allan, 1988, 1992; Bhamjee, 1991; Heimes, 1983; Houston-McMillian, 1986; Lombard, 1989; Luiz, 1988a, 1988b, 1988c, 1994; Luiz, Oelofsen, Stewart, & Mitchell, 1995; Mothuloe, 1990; Stewart, 1997; Sweeney, 1994; Tukulu, 1996; Worsfold, 1993). Furthermore, the Griffiths Scales have been translated, using the Brislin (1970) back-translation technique into Afrikaans (Allan, 1988) and Xhosa (Tukulu, 1996). Also items from a number of Scales have been adapted (e.g., "potato" for "turnip"), making them more applicable for use within the South African context.

A pertinent issue raised is whether available assessment instruments, such as the Griffiths Scales, which were developed for a specific cultural group at a specific time in history, can be legitimately administered and applied to a culturally different group within any one society. The Griffiths Scales main purpose was to fulfil the need for an intellectual assessment device for pre-school children (Heimes, 1983) in South Africa and the United Kingdom. However, since their introduction into South Africa (1977), numerous studies done by South African authors (Allan, 1988,1992; Bhamjee, 1991; Heimes, 1983; Luiz, 1994; Luiz, et al., 1995; Stewart, 1997; Tukulu, 1996) show that while the Griffiths Scales appear to be substantially culture-fair, some items require closer analysis and possible revision. Research at a national and international level (Allan, 1992; Luiz, et al., 1995) provided a preliminary analysis of all the items of the Griffiths Scales. The results indicated several items, which included the 20 small pictures and the large picture of the Hearing and Speech Scale, as culturally-biased and non-contemporaneous and thus in need of revision.

It was clearly evident that the revision of the Griffiths Scales for the children of South
Africa cannot be separated from the broader social context in which these children are currently growing up. As the test is utilized in diverse settings, in both first and third world contexts, the revision of the pictures needs to include such pertinent factors. Hence, if accurate developmental assessment of children from diverse backgrounds is desired, test items need to be adapted for the different contexts in which the test is to be used. It is therefore evident that the revision of the small pictures and large picture is likely to require separate, context-specific (Allan, 1992; Bhamjee, 1991; Luiz, 1994; Luiz et. al., 1995; Tukulu, 1996) and contemporary-specific aspects.

The Griffiths Scales, with special reference to the Hearing and Speech Scale, have been discussed in Chapter 2. As the main focus of the present study involved the Hearing and Speech Scale, the issues of language development and the concept of intelligence are briefly addressed below.

**LANGUAGE DEVELOPMENT AND THE CONCEPT OF INTELLIGENCE**

"Thanks to speech, man became man" (Humboldt, in Sampson, 1956). Of all of our gifts speech is the most specifically human. The human child vocalises at a very young age. They start their life with a cry and almost from the beginning, they express themselves in vague sounds (Gesell & Ilg, 1946). Their parent figure learns to distinguish their utterances and their references to pain, hunger and contentment by the end of the first month. At 6 months of age they are spending 3% of their waking time in speech activity. At 9 to 10 months they utter their first word. Vocabulary and understanding continue to increase, but it is not until about 18 months, that a consciousness of the meaning of speech dawns (McCarthy, 1930; Stern, 1924; Swan, 1992). At this age however, there is still much speech which is not in conventional form. In the pre-verbal stage of language development, the child's speech can be described as "incomprehensible" as it involves vowel sounds alone, or combinations of vowels and distinct consonants (Sampson, 1956).

Children vary widely in the age and the efficiency with which, they learn to use language. Studies of animals and infants have shown that communication and intelligent behaviour are possible without language (Moore, 1967). However, Piaget (1928, 1932, 1959) demonstrated how children, by verbalizing their thoughts, are brought to the test of reality; while the experiments of Vygotsky (1962) and his school (Luria, 1961) showed how learning could be vastly improved and made possible at an earlier age by the introduction of
verbal cues. Thus, the crystallization of concepts, the structuring of thought and the communication of ideas are promoted by language. Moore (1968) proposed that the child who learns to use this valuable instrument early, would have a permanent intellectual advantage over one who learns it late. The concern with language is of importance for clinicians working with the assessment and remediation of a child's language ability and disability (Harris, 1990).

In order to understand the language acquisition and the language development of a person, it is necessary to consider the person as a biological, psychological, social and cultural-intellectual being. Within the field of language development, numerous theories have been put forward, some more prominent than others. Griffiths (1954) stated that when assessing the speech of infants and young children, one must be aware of the child's reaction time. This suggests that there is a time-lag that can be observed between what the child hears and what he later attempts to produce or reproduce. It is likely that it is this gap between what is understood (passive speech) and what can be expressed (active speech), that becomes part of the complex stimulus to progress that is present in all normal subjects from infancy onwards. The theories and assessment measures pertaining specifically to language development and language acquisition have been discussed in Chapter 3.

A comprehensive assessment of a child's overall development should include a number of tests that would measure ability without penalty. This implies that a child's ability to perform tasks involving cognitive and associative responses should be measured. Since most language tests are by nature culturally bound, any attempts to measure a child's expressive and receptive language should be culture specific (McElroy, 1972).

PROBLEM STATEMENT AND AIM OF THE STUDY

Since the arrival of the Griffiths Scales in South Africa, some 20 years ago, several studies have been conducted at both national and international levels. The findings of these studies have been reviewed and evidence presented regarding the 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales, clearly indicated that the users of the Scale find these items to be culturally biased and non-contemporaneous, and thus in need of revision.
Hence, this study was aimed at providing a continuation of the research process existing in South Africa, which involved adapting a section of the Hearing and Speech Scale. The aims of the present study were two fold.

**Aim 1**: To revise the 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales of Mental Development, making them more culturally relevant for the children of our contemporary world, especially in South Africa.

**Aim 2**: To describe the performance of South African children, between 60 and 83 months of age, utilizing the revised pictures.

The reason for selecting this age group is that many children are tested in their sixth year (from 72 months), for evaluating their school-readiness and hence their school-placement.

As the present study is exploratory in nature, no specific hypotheses were generated. Instead the aims stated above guide the methodological approach used in the study, as described in Chapter 4, as well as the manner in which the findings are reported in Chapter 5.

**CHAPTERS OF STUDY**

Chapter 2 highlights the psychological assessment instruments, used for infants and young children. Special emphasis is given to the Griffiths Scales. Furthermore, the chapter describes the construction of the Griffiths Scales, and reviews both normative and clinical research completed on the Scale. In addition, recent research completed in South Africa is presented. Chapter 3 expands the theories of language acquisition. Furthermore, standardized tests specifically pertaining to childrens' language are addressed. The administration of the Hearing and Speech Scale and responses to the 20 small pictures and large picture are reviewed. Chapter 4 includes the methodology employed in conducting the study as well as, the analysis of the results. Chapter 5 provides the results and a discussion of the results. A critical evaluation of the study is presented in Chapter 6.
CHAPTER TWO
PSYCHOLOGICAL ASSESSMENT INSTRUMENTS USED FOR INFANTS
AND YOUNG CHILDREN

In this chapter the more widely used psychological assessment instruments for infants and young children are highlighted. The reason for their inclusion, is to gain an understanding of the development of the Griffiths Scales within a historical context. Special emphasis is given to the Griffiths Scales.

Hetherington and Parke (1986) stated that the developmental milestones for the acquisition of language, seem to arise in a regular and fixed order and usually at the same rate for all normal children around the world, irrespective of the culture to which they belong. This view is not shared by all researchers of language acquisition, although most agree that the period of onset is universal. As stated by Lennenberg (1966) researchers of language acquisition have never been struck by any discrepancies between vocalizations or communicative behaviour among children of "primitive" or "western" man. However, not all agree as to the cause of the onset, or its subsequent development. The trend of research can be capsulized in the following manner. There are researchers who propose that language is innate, that is man is destined to be verbal. There are others, who insist that language is a learned tool and that certain environmental controls precipitate this learning (McElroy, 1972). To date these views are yet to be resolved (Swan, 1992). A historical overview of the assessment instruments for infants and young children will now proceed.

It was towards the end of the 19th century that schools for special education began to emerge throughout the United States of America (USA) and Europe. This resulted in a need for a reliable and valid assessment instrument for children (Anastasi, 1976). In 1904 Simon Binet was on a commission in Paris to study the question of special education. The concern for mentally retarded children who could benefit from special education acted as a catalyst for the development of intelligence tests for children (Binet, 1903). This resulted in the development of the Stanford-Binet Intelligence Scale.

The Stanford-Binet Intelligence Scale, Fourth Edition (Stanford-Binet Scale) that is widely used today, stems from the original Binet tests. Norms were provided from the age of 2 years to adulthood in the 1972 edition (Thorndike, Hagen & Sattler, 1986). Despite the wide age-range of the scale, which has been considered one of its major assets, the test is
highly verbal in nature which is limiting for a handicapped person with verbal deficits (Simonsson, 1986). Furthermore, a profile of strengths and weaknesses cannot be obtained due to the fact that the Stanford Binet Scale only provides a general intelligence quotient (Allan, 1992). Murphy and Davidshofer (1988) stated that despite the assets of the scale which included the continuity between the original and the current test, as well as the general reliability and validity of the scale which appeared to be high, there is strong evidence to suggest that the scale is less reliable for younger children, especially in the age-range of 2 years 5 months to 5 years 5 months.

It was during the late 1920’s and early 1930’s, that the diaries of men like Darwin and Galton generated interest in the development of certain abilities in babies and children (Bhamjee, 1991; Heimes, 1983). The developers of intelligence realised that infancy was a topic important and worthy of further study (Darwin, 1877; Stern, 1914). This resulted in the development of two tests, namely, the Bayley Scales and the Gesell Developmental Schedules (Anastasi, 1982; Brooks & Weinraub, 1976; Gesell, Halverson, Ilg, Thompson, Castner, Ames, & Amatrude, 1940). Bayley (1933) published the California First Year Mental Scale, which was developed to study mental and motor development in infants for use in the Berkeley Growth Study. After many years, the California First Year Mental Scale was revised and restandardized (Bayley, 1955). The Bayley Scales of Infant Development (Bayley Scales) were published in 1969. Today the revised Bayley Scales are utilized with infants ranging from 1 month to 42 months of age (Bayley, 1993). This Scale is comprised of mental, motor and behavioural scales. The latter scale was developed to assess various aspects of personality development, such as emotional and social behaviour and goal directedness (Bayley, 1969, 1993).

In 1940 the Gesell Developmental Schedules (Gesell Schedules) were constructed at the Yale Clinic of Childhood development. The age-range measured by the Gesell Schedules extended from 1 month to 6 years of age. Four areas of development were measured, namely: motor development, language development, adaptive behaviour and personal-social behaviour (Griffiths, 1954). Age placements were determined by the percentage of subjects who passed each item. This allows for the comparison between the development of a particular child and a normative standard (Kaplan & Saddock, 1991). Although the Gesell Schedules were considered less standardized and more subjective than many other psychological tests, they have been regarded as a main source of data for many infant and pre-school tests that have subsequently followed (Brooks & Weinraub, 1976).
Researchers like Cattel (1940) and Griffiths (1954) designed their tests by improving and modifying tests that already existed (Anastasi, 1982; Brooks & Weinraub, 1976).

The Cattel Scales were developed by heavy reliance on the Gesell Schedules (Cattel, 1940). This test extends from 2 months to 2 years 5 months of age. Conflicting research findings regarding the reliability and validity of the Bayley and Cattel Scales has been proposed in literature (Brooks & Weinraub, 1976; Honzick, 1976; Thomas, 1970).

Wechsler, of the Bellevue Psychiatric Hospital in the USA, developed an initial scale, called the Wechsler-Bellevue Intelligence Scale (WBIS), which was composed of tests of two categories, Verbal and Performance. The WBIS now bears the title Wechsler Adult Intelligence Scale (WAIS). Later in 1949, Wechsler developed the Wechsler Intelligence Scale for children (WISC). The WISC assesses the intelligence of children between the ages of 5 and 15 years. In 1974 the WISC was replaced by a restandardized version, namely, the Wechsler Intelligence Scale for children-Revised (WISC-R). The Weschsler Scales changed from being an age-linked scale of intelligence to a point scale. Despite the fact that the WISC-R is said to be technically superior in terms of it’s construction procedures and reliability, validity studies have been insufficient and inconclusive (Anastasi, 1982; Groth-Marnat, 1984).

The Wechsler Pre-school and Primary Scale of Intelligence-Revised (WPPSI-R) was developed in 1989 as a downward extension of the WISC. It measures the intelligence of children between 4 years and 6 years 7 months of age, across 12 subtests. The subtests are grouped into a verbal and a performance scale (Wechsler, 1967, 1974). The major assets of the WPPSI-R appear to be the simple administration procedure, its popularity and familiarity to most psychologists, as well as the ability to assist in evaluating personality variables. Despite the above mentioned assets, the WPPSI-R remains deficient in terms of estimating IQ's of severely retarded children. Furthermore, the norms are said to be unsuitable to ethnic minority persons from lower socio-economic backgrounds (Groth-Marnat, 1984).

In 1972, the McCarthy Scales of Children's abilities (McCarthy Scales) were published. Anastasi (1982) regarded the McCarthy Scales to be a well constructed instrument. The scale is suitable for children between the ages of 2 years 6 months and 8 years 6 months. There are 18 tests grouped into six subscales, namely: verbal,
perceptual-performance, quantitative, general cognitive, memory and motor. The general
cognitive score based on 15 of the 18 tests in the entire battery and expressed as a General
Cognitive Index (GCI), indicates the child's functioning at the time of testing with no
implications of immutability or etiology. The McCarthy Scales are not the ideal choice of test
for children who are mentally retarded, gifted, or below the age of 5 years, as they are
reported as having an inadequate floor and a low ceiling (Nuttall, Romero & Kalesnik, 1992).

Among the most popular non-verbal tests utilized today are the Test of Nonverbal
Intelligence (TONI), (Brown, Sherbenou, & Dollar, 1982); the Vineland Social Maturity
Scales (Vineland), (Doll, 1965); the Goodenough-Harris Draw-a-Person Test (DAP), (Harris,
1963); Raven’s Progressive Matrices (RPM), (Raven, 1938, 1947a, 1947b) and the
Kaufmann Assessment Battery for children (K-ABC), (Kaufmann & Kaufmann, 1983).

The DAP requires drawings of people, while the TONI, Raven and the K-ABC are
figural reasoning tests. Non-verbal tests have gained significance due to their so called
"culture-reduced nonverbal tests have not proved better for predictive purposes than the
usual verbal tests with minority groups in the United States or elsewhere” (p.487).
Additionally, all age groups and all areas of development are not included in any of the
mentioned nonverbal tests. The TONI and the RPM cannot be used for children younger
than 5 and 6 years of age respectively. The RPM consists of three separate tests and
should preferably be used in conjunction with a vocabulary test (Vass, 1992). The DAP and
the K-ABC cannot be used for children under 3 years and 2 years 6 months respectively.
Despite the Vineland including items for the first 3 years of life, it does not cover all important
areas of development, since it is only a measure of social competence.

The Word Intelligibility by Picture Identification test (WIPI) is utilized with both adults
and children in the assessment of speech discrimination. The test involves picture-pointing
which prevents the necessity of a verbal response as is required with many of the other
utilized tests of speech discrimination. This test has been standardized for use among
Xhosa speaking children (Samuels, 1995).

The Griffiths Scales were developed by Griffiths in the United Kingdom (1954, 1986)
for infants from birth to the ages of 2 years. The Griffiths Extended Scales were published in
1970 to cater for young children between the third and eighth year of childhood (Griffiths,
1970, 1984). The Extended Scales include a sixth scale, measuring practical-reasoning abilities. As the Griffiths Scales, especially the Hearing and Speech scale, are the focus of the present study, they are discussed in more detail below.

The concept of "developmental assessment" is synonymous with the name Ruth Griffiths (Allan, 1992). To date, Ruth Griffiths is one of the pioneers of the psychology of early child development in the United Kingdom. The Griffiths Infant Scale was devised by drawing substantially upon previously published scales, in particular the Gesell Developmental Schedules. Since previously published infant scales lacked speech items, Griffiths included twice as many speech items in her scale. She supported the view that speech was a "unique human intellectual task" (Brook & Weinraub, 1976, p.46) and should therefore be included in any infant assessment scale. She also included items of a social nature, especially for the first year of development.

Griffiths (1970) stated that each subscale of the Griffiths Scales was devised to be a separate and complete scale in itself. This allowed any one "basic avenue of learning", or process of development to be measured independently and as completely as possible. The origin and interactions among the basic avenues of learning, namely, the eyes, hands, voice and hearing, encompass the foundation on which the Scales were constructed (Griffiths, 1960). Griffiths (1960, 1970) emphasized the physiological functions as being responsible for the earliest beginnings of mental development. The physiological functions, which include waking, sleeping, and ingestion, are rhythmical, occurring regularly in time.

Vague sounds are evident from birth, later becoming vocalization and then babble. The young child listens to the sounds, voices and noises around him. Hearing and voice are two further basic avenues of learning which develop concurrently. Hearing takes place in time, as opposed to in space. A normal infant will begin to understand the spoken language occurring in his environment long before his inexperienced vocal organs are able to frame the responses. Performance and Speech are two broad sets of activities which represent different types of experiences. Furthermore, they are both main aspects of intellectual development, and together form the basis ultimately of formal education, both practical and verbal. Griffiths (1960) refers to the Hearing and Speech Scale as the most intellectual scale of the entire Griffiths Scales. She further stated that an advanced stage of development is reached when the older child learns to read and write, as all four basic avenues of learning (eye and hand, together with voice and hearing) co-operate in the
acquisition of this complex ability of understanding and reproducing written language.

Integrating the basic avenues of learning, the Griffiths Scales of Infant Development were constructed. The Scales included the assessment of locomotor development, personal-social adjustment, hearing and speech, hand and eye co-ordination, and performance. Griffiths later realized that certain skills and items of learning could not be logically fitted into any of the five subscales of infant mental development. Sequentially, Griffiths developed a sixth scale, measuring practical-reasoning abilities, for children between the ages 2 years and 8 years. This resulted in the development of the Griffiths Extended Scales, which were published in 1970 (Griffiths, 1970, 1984). These scales constitute the General Quotient (GQ) and are equal in difficulty at each age level. A brief description of the six Scales, with more emphasis on the Hearing and Speech Scale, follows:

The Locomotor Scale (AQ), provides the opportunity to observe certain physical weaknesses or disabilities, or more definite defects of movement. Items include walking up and down stairs, jumping over a rope, hopping, throwing and kicking a ball, to name but a few. The items require from the child normal physical strength, skill in speed and movement, rhythm and poise at a level compatible with their age.

The Personal-Social Scale (BQ), assesses personal and social development. At a level compatible with the child's age, a degree of self-help is required from the child in terms of personal cleanliness, efficiency at the table, etc. Information such as the child's name, home address, family name, etc., can be obtained through a friendly conversation with the child. Some degree of social interaction is required from the child and also co-operation in play with other children. Although emotional factors influence performance on all scales, they usually have a more definite effect on this scale. Griffiths (1984) stated that the over-protected child and the neglected, usually do rather badly on this scale.

The Hearing and Speech Scale (CQ), is the most intellectual of all the scales, and assesses both growth and development of language. This scale requires not only the comprehension of language, but also specific verbal expressive skills in terms of vocabulary, the use of different parts of speech, and the use of sentences and paragraphs. Items include, the naming of colours, the repetition of sentences with a varying number of syllables, the naming of similarities and opposites, the identification of stimuli picture cards, etc. When it comes to older children, it is the gradual enrichment of vocabulary, the use of
different parts of speech, learning to use sentences, and to develop paragraphs of
description in relation to pictures, that is assessed. Poor performance on this scale may
be a result of deafness or some degree of hearing loss, as opposed to low intellectual
functioning.

The Eye and Hand Co-ordination Scale (DQ), consists of items relating to handwork
and visual ability. Manual dexterity, co-ordination between the eyes and hands, careful work
and persistence in a task are required from the child. Information on a child's personality, as
well as their conception of space and form-relations can be obtained. Items include the
threading of beads, both formal and informal drawings, the cutting of paper, etcetera.

The Performance Scale (EQ), measures skills in manipulation, speed and precision
of work. Spatial perception and visual activity are needed for the completion of the tasks.
Items correspond with that on the Hand and Eye Co-ordination Scale in that some manual
performance is required of the child. Items of this scale include, building stairs and bridges
with blocks, the use of a formboard, pattern making, etcetera.

The Practical Reasoning Scale (FQ), focuses mainly on recording the earliest
indications of arithmetical comprehension, and the realization of the simplest practical
problems. This scale is only introduced to children over 2 years of age. It has value in
indicating a child's ability to benefit from formal schooling. Attention and concentration span
also plays a role on this scale, as with all the other scales. Items include the repetition of
digits (giving an indication of short-term auditory memory), as well as differentiation of
objects in terms of size, weight, length, and height.

The clinical merit of the Griffiths Scales is ever increasing. Not only has research on
the Griffiths Scales been generated from places as far a field as Canada (Ramsay &
Fitzharding, 1977), Columbia (Cobos, Rodrigues & De Venegas, 1971), France (Laroche,
Brabant & Brabant, 1976; Laroche, Gutz & Desbiolles, 1974), Germany (Brandt, 1983,
1984), China (Collings, Jupp, Maberly, Morris & Eastman, 1987), Norway (Sletten, 1970,
1977), Australia, Greece, Lebanon, the United States of America and South Africa; it has
also been administered to a wide range of children, including a deaf child (Luiz, 1988a), a
battered child (Luiz, 1988b), borderline mentally handicapped pre-schoolers
(Houston-McMillan, 1988) and a physically disabled child (Krig, 1988). Furthermore, the
Griffiths Scales can be seen to have filled the vacuum that existed in the developmental
assessment of young children in South Africa, in that they cover the first 3 years of life. Today, the Griffiths Scales are amongst the most widely researched tests for the assessment of infants and young children in the world (Luiz, 1994)

The Scales are a comprehensive test of development that provide information about the important areas of child development. They were developed by observing children interacting in their natural environment, busy with play, walking and talking; at home, in school playgrounds, on trains and in buses (Griffiths, 1970). Play is considered to be a universal activity, and research findings indicate that different types of play emerge at about the same age in children from different cultures (Kagan, 1981). The Griffiths Scales, by virtue of their construction and the fact that they include items common to other cultures, can be regarded as being potentially "culture-fair". Furthermore, the fact that the Griffiths Scales have been used in research world-wide and have been adapted for use in several countries, suggests that the Griffiths Scales are culture-fair.

Regarding the standardization of the Griffiths Scales, the British samples (Griffiths, 1960) used for the development and extension of the Griffiths Scales, were chosen to be as representative as possible of the total British community. The sample consisted of 2260 children from the first to the eighth year of life, and comprised:

(i) approximately equal number of boys and girls;
(ii) children from crowded urban areas as well as isolated country and coastal areas, and from different geographical areas of the country (England, Wales & Scotland);
(iii) children from different institutions, for example schools, child guidance clinics and play centres;
(iv) children in each age group of the sample which corresponded closely to the latest available population census (1960) in terms of occupation of the fathers.

In the standardizing and equalizing of the original Scales the number and percentage of children passing each item, were calculated for each two-months age group, beginning with the first two months of the first year, and continuing to the 96th month. In the final form of the Scales every item was placed as near as possible to the point were it was passed by 50% of the children in a two-month age group. The steady decline in the percentage of children passing the successive items in every scale, indicated that items in every scale are arranged in order of difficulty (Griffiths, 1960).
The Griffiths Scales are criterion-referenced in nature. Criterion-referenced testing, is used to identify an individual's status with respect to an established standard of performance. Individuals are compared to some established criterion, rather than to other individuals, hence the designation criterion-referenced testing. This approach measures level of mastery. Criterion-referenced tests can provide information closely related to instructional decisions, such as:

(i) whether the child is ready to proceed to the next level of instruction;
(ii) whether there are certain subskills that require more attention than others; and
(iii) what curriculum materials could assist the child with the mastery of the necessary skills (Heimes, 1983).

In criterion-referenced measurement the scale is usually anchored at the extremities, that is a score at the top of the scale indicates a complete or perfect mastery of some defined ability, or at the bottom this indicates an absence of the ability. Sattler (1982) proposed that the criterion-referenced procedures aid when behavioural objectives and individual teaching programs are sought. Table 1 indicates the established criterions suggested by Griffiths (1960) for the scoring of the 20 small and large pictures of the Hearing and Speech Scale (Scale CQ).

The Griffiths Scales were introduced to South Africa in 1977, and to date there are approximately 400 registered South African users. The Griffiths Scales have been translated, using the Brislin back-translation technique, into Afrikaans (Allan, 1988) and Xhosa (Tukulu, 1996). Extensive research conducted on a national and international basis has made it clear that several items of the Griffiths Scales are culturally-biased and out-dated thus in need of revision (Allan, 1988, 1992; Bhamjee, 1991; Heimes, 1983; Huntley, 1944, 1996; Luiz, 1994; Luiz, et. al., 1995; Stewart, 1997; Tukulu, 1996). These findings have been included in the present study.

Normative and clinical research completed at both a national and international level utilizing the Griffiths Scales, with special emphasis on the Hearing and Speech Scale, shall be presented.
Table 1
Griffiths (1960) scoring criteria for the 20 small pictures and the large picture utilized for Scale CQ

<table>
<thead>
<tr>
<th>AGE IN MONTHS</th>
<th>SMALL PICTURES</th>
<th>CORRECTLY IDENTIFIED</th>
<th>DESCRIPTIVE WORDS</th>
<th>DESCRIPTIVE SENTENCE</th>
<th>STIMULI</th>
<th>PRONOUNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
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<td>23</td>
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<td>28</td>
<td>12</td>
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<td>34</td>
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<td>6</td>
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<td>2</td>
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<td>44</td>
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<td>18</td>
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<td>58</td>
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<td>60</td>
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<td>70</td>
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<td>6</td>
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<td>76</td>
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<td></td>
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<td>3</td>
</tr>
<tr>
<td>86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

The figures in the table cells indicate the expected number to be achieved by a child at a particular age level.

Krige (1988), completed a longitudinal study of a physically disabled child. The study illustrated how the Griffiths Scales were utilized to assess a child's gains and losses in six separate areas of learning, over approximately a four and a half year period. This child had one finger on his right hand and two fingers on his left hand. Both feet had only two toes. He was assessed on the Griffiths Scales on four occasions. He was first seen at the age of 38 weeks, and subsequently at the ages of 26, 40, and 64 months. The Griffiths Scales allowed a comparison of the child's total potential (the general quotient) with that of his age group. Utilising the individual scales, it was also possible to pinpoint his strengths and limitations, and to ascertain any changes over time. Furthermore, the Griffiths Scales allowed the researcher to closely monitor the child's progress. Hence, Krige (1988) was able to give the child's parents the reassurance that their child continued to do well on the most intellectual scale namely, the Hearing and Speech Scale. The child had persistence.
and showed a remarkable degree of independence and courage. It appeared that their way of rearing their son, was contributing to the development of his potential. The feedback received through the continuous assessments was very important to the family system.

Luiz (1988a) conducted a case-study on a boy diagnosed on the Griffiths Scales as having a hearing loss at the age of 30 months. He was seen by the researcher for a further 3 years. Although the child did not have a history of congenital deafness, he had experienced pain in his ears. The audiologist was unable to assess him due to his high activity level and lack of co-operation. This study demonstrated the usefulness of the Griffiths Scales in the early diagnosis of a hearing problem. By assessing the six avenues of learning, it was demonstrated that the child was not generally retarded, but was in fact an intelligent child with a problem in a specific area.

Luiz (1988b) completed an 18 month follow-up study with a battered child who was first assessed at 31 months of age. This study described the case of a child who was removed from an extremely poor home environment as a result of neglect and battering. An assessment on the Griffiths Scales at the time of foster-care placement, and 18 months after placement, revealed the usefulness of the Scales in evaluating the extent to which a child, who has been removed from an unstable and impoverished environment, can benefit from a caring and stimulating environment.

Luiz (1988c) completed a comparative study of two scales of language development, namely, the Reynell and the Griffiths Scales. This study revolved around the need for the planned comprehensive assessment of children by multidisciplinary teams. With various professional members of an assessment team using different instruments, it is important to know whether the instruments measure totally different areas of development or whether they overlap. This study compared the age scores obtained on the Reynell Verbal Comprehension Scale (Scale AQ) and the Griffiths Hearing and Speech Scale (Scale CQ), when each was given to the same child. While the Reynell Scale (A) aims to assess entirely independently verbal comprehension in children between the ages of 1 and 6 years, the Griffiths Scale CQ, assesses both expressive language and verbal comprehension.

The two scales for children in each age range were compared. Results indicated that there was no significant difference in age scores for each of the age ranges. Although the correlation between the two scales was significantly high, the paired comparison revealed
that the two scales produced significantly different mean age scores. The most plausible explanation for this difference lies in the area of language development that each scale aims to measure. The Reynell Verbal Comprehension Scale measures verbal comprehension only and does not include expressive language, whereas the Griffiths Hearing and Speech Scale measures both verbal comprehension and expressive language.

Luiz (1988d) completed a study which was conducted over a period of 3 years. The study, which was a replication of Lister's British study (1981) with a South African sample, aimed to obtain developmental profiles of young children. The sample \((N = 93)\) comprised children between the ages of 2 years 6 months and 7 years 7 months. The results indicated that the general usefulness of the Griffiths' developmental profile for South African White children was thus confirmed. In addition to revealing the unevenness of patterns of development in such a large number of subjects, the use of the Griffiths Scales made possible an investigation of children's relative levels of functioning in specific areas. In particular, differences between children's use of language, verbal comprehension and expression (Scale CQ), their eye and hand co-ordination (Scale DQ) and their performance abilities (Scale EQ) were identified. Furthermore, the results of the study were similar to those found by Lister (1981).

The question raised was whether the Griffiths Scales can be considered to be valuable as a diagnostic instrument for the other South African cultural groups. The researcher stated that there was insufficient data relating to other groups, to have made a meaningful analysis similar to the present study.

Houston-McMillan (1988) completed a study with borderline mentally handicapped pre-schoolers. The study involved the identification and treatment evaluation using the Griffiths Scales of Mental Development. Using the same scales, their progress was evaluated over a 2 year period of attendance. The sample \((N = 27)\) comprised pre-schoolers between the ages of 3 years 6 months and 6 years.

An examination of the mean General Quotients (GQs), Personal-Social Quotients (BQs) and Hearing and Speech Quotients (CQs) obtained by the sample prior to commencement of school, with those obtained at the end of years 1 and 2, indicated that there was significant gain in scores over time, except for the Hearing and Speech Scale. Furthermore, the results indicated that the Griffiths Scales made a significant contribution
not only in the initial diagnosis of the children, but also in the evaluation of their progress. In addition, it provided parents with appropriate and accessible information on their child's progress. The Griffiths Scales also provided information which could be interpreted within the terminology of many different disciplines, and afforded the team members an opportunity to discuss their findings within a common developmental framework.

Heimes (1983) completed a study aimed to investigate the relationship between the Junior South African Individual Scales (JSAIS) and the Griffiths Scales. The study had specific aims of providing validity for the JSAIS, and providing the first step in establishing the validity of the Griffiths Scales for a South African population.

In 1981 the JSAIS was published in South Africa. The JSAIS was designed to test children in the age-range of 3 years and 7 years 7 months. The complete test consists of 22 subtests. Twelve of these subtests constitute the General Intelligence Quotient (GIQ) and are grouped into four subscales, namely the Verbal Intelligence Scale (VIQ), the Performance Intelligence Scale (PIQ), the Numerical Scale and the Memory Scale 1.

The question was posed as to whether the JSAIS complements the Griffiths Scales? The results indicated a generally high positive correlation between the scales. Thus, it may be said that the JSAIS and the Griffiths Scales indeed measure the same construct. Regarding the Hearing and Speech Scale and the VIQ of the JSAIS, the results indicated a significantly high positive correlation. Furthermore, the findings indicated that the JSAIS’s VIQ Scale provided more than a rough estimate of verbal intelligence. In conclusion, the study demonstrated that these two tests do measure the same construct, and have a high positive correlation, although based on two different methods of construction. The combined administration of the JSAIS and the Griffiths Scales, implies that these tests complement one another in dealing effectively with the early diagnosis of problems in young children.

Allan (1988) completed a study aimed to investigate whether the British norms (1960) of the Griffiths Scales were applicable for South African (SA) children. The sample (N = 60) comprised of 5 year-old English- and Afrikaans-speaking White SA children. Furthermore, the extent to which the subject variables of gender, language and SES influenced performance was investigated. The major findings of the investigation were that 5 year-olds in the SA and British standardization sample, differed significantly on the General Quotient
Children in the different SES groups differed significantly on the GQ and in their performance on four of the six scales, namely the Hearing and Speech, Eye Hand Co-ordination, Performance and Practical-Reasoning scales. On the Hearing and Speech, Eye and Co-ordination, and Practical-Reasoning scales, children from the upper SES group performed significantly better than those from both the middle and lower SES groups. On the performance scale and GQ, the upper SES group scored significantly higher than the middle and lower SES groups, and the middle SES group scored significantly higher than the lower SES group. Hence, Allan (1988) was of the opinion that socio-economic status be taken into account in the interpretation of the Scales.

Allan (1992) completed a comparative study on the performance of South African normal pre-school children on the Griffiths Scales. The study was aimed at extending previous research findings, by comparing the performance of South African Black, Coloured, Indian and White children on the Griffiths Scales. The sample (N = 200) consisted of children between 5 and 6 years of age. The applicability of the present British norms for South African children from the different cultural groups was also investigated. Furthermore, the extent to which the subject variables of gender, language and SES influence the test performance of these children, was investigated. An analysis of the performance of children from the four cultural groups on the items of the individual scales, was also conducted in an attempt to identify culturally-loaded items. With regards to the Hearing and Speech Scale, the results indicated that no consistent, significantly higher scores were found for children from a specific cultural groups. There were no significant differences between the cultural groups with respect to the General Quotient (GQ) and to their performance on the Personal-Social scale (BQ) and the Practical-Reasoning scale (FQ). With respect to the other four individual scales, the Coloured and Black groups did not differ significantly from each other. However, their performance differed significantly from that of the Indian and White groups. There were also significant differences in the performance of the Indian and White groups with respect to the latter four individual scales. There were no significant differences in the test performance of English- and Afrikaans-speaking Coloured children. However, the only individual scale on which White English-speaking children scored significantly higher, was on the Hearing and Speech Scale. This finding does not
necessarily indicate that the two language versions (English and Xhosa) of the Griffiths Scales are not equivalent. Culture must be considered to be a confounding variable in any study of the effect of language on test performance. Another aspect which could explain the significant difference on the Hearing and Speech Scale is the influence of the experiential world of the young urban child on test scores. Earlier research indicated that Black African children did not feel at home with pictorial representations (Biesheuvel, 1949; Minde & Kantor, 1976). Furthermore, it is possible that the children from different cultural and social groups were not equally familiar with some of the test items, which in turn affected their test performance. Allan (1992) stated that although the White and Black children were very similar in terms of parental education and occupational levels, Duminy (1973) proposed that the environment in which the Black child lives, is completely different from that of his White counterpart. Therefore, it is possible that the significant difference between White and Black children is due to cultural and environmental factors, rather than the language of the translation as such (Allan, 1992).

In comparison with the British standardization sample, a significant difference was obtained for White children who scored significantly higher with respect to the GQ, the Hearing and Speech Scale (CQ) and Practical Reasoning Scale (FQ).

Regarding the analyses of individual items, the items of each individual scale of the Griffiths Scales are arranged in order of difficulty (Griffiths, 1984). A decreasing trend was found in the percentage of 5-and 6-year-old children from each cultural group, who passed successive items of the individual scales. For the 5-year-olds from the British standardization sample and each of the South African cultural groups, the percentage of children who passed successive items of the individual scales was correlated. This was done for every individual scale. Allan’s (1992) study indicated that item bias may hinder a national multicultural standardization of the Griffiths Scales for South African children. The present British norms are furthermore not applicable for South African Indian and White children, but appear to be more applicable for South African Black and Coloured children.

Bhamjee (1991) completed a study which investigated the applicability of the Griffiths Scales for South African Indian children. The sample (N = 360) consisted of children between the ages 3 years and 8 years, with equal numbers of each gender group. The differences were most significant in the pre-school age group. The results of the study indicated that the South African Indian children performed significantly higher than their
British counterparts with respect to the General Quotient (GQ) at each age level, and on at least three of the six Scales (i.e., Personal-Social, Performance & Practical-Reasoning) at each age level. Bhamjee's (1991) findings regarding socio-economic status, are consistent with those of previous researchers, namely, that there were significant differences in the performances of children from the different socio-economic groups, with the children from the upper group performing better (Allan, 1988; Heimes, 1983; Hindley, 1960). Bhamjee (1991) stated that the use of the British norms would be a serious mistake, as it would result in a failure to identify specific problems. Furthermore, assessing children with material which is not "culturally- fair" can also result in a failure to identify specific problems.

Moore's (1967) longitudinal study which was completed with a sample \( N = 76 \) of British children (41 boys and 35 girls) who were tested at five ages: 6 months, 18 months, 3 years, 5 years and 8 years, yielded valuable information regarding language and intelligence. Regarding the question of gender and language acquisition, Moore (1967) found that at 18 months of age, the girls surpass the boys significantly on the Hearing and Speech Scale (CQ). In general ability, the sexes started virtually equal. The girls scored a little higher during the period of language acquisition (first five years of life) and were then overtaken by the boys. The early superiority of girls is in agreement with many studies summarized by McCarthy (1954). The fact that boys tend to catch up before school age (5 years of age) was also found by Templin (1957). In a study completed by Smith (1914), he found differences in favour of boys only in respect of vocabulary. Allan (1988, 1992) and Bhamjee (1991) found that the performance of boys and girls did not differ significantly on the Hearing and Speech Scale.

Worsfold (1993) completed a study aimed to establish how accurately Grade 1 performance can be predicted from (a) General Quotient (GQ) and (b) quotients of the six subscales of the Griffiths Scales. The results indicated that the Griffiths profiles of the subjects in the three scholastic groups (above average, average and below average) differed significantly on scales CQ, DQ, EQ, and FQ. Furthermore, it was found that the validity of the Griffiths Scales for predicting scholastic performance in Grade one was high. This justifies the inclusion of the Scales in a school-readiness test battery. In addition, the Scales are shown to be a valuable tool for the clinician, in the identification of children who may be scholastically "at risk".
Lombard (1989) completed a correlational study using the School Readiness Evaluation by Trained Teachers (SETT) and the Griffiths Scales. The children comprising the sample (N = 64) were aged between 5 and 6 years, and all from the White ethnic group. Lombard (1989) found a substantial relationship between the total SETT score and the Griffiths Scale GQ for both English and Afrikaans language groups. Specifically relating to the Hearing and Speech Scale and the Language and Developmental Scale of the SETT, Lombard found moderate correlations for Afrikaans-speaking children. The correlation coefficients for the remaining scales were low and not significant. Lombard (1989) suggested that a possible reason for the low correlations could be because the Griffiths Scales are a more extensive assessment, as opposed to the SETT which is a screening test.

Mothuloe's (1990) study aimed to investigate the potential use of the Griffiths Scales as an assessment instrument for South African black children. Mothuloe examined the concurrent and predictive validity of the Griffiths Scales, compared the Griffiths Scales performance of black school beginners with that of their counterparts in the British standardization sample, and investigated the influence of certain subject variables on the Griffiths Scales performance of South African children. Mothuloe made a valuable contribution in the translation of the Griffiths Scales to Setswana. Mothuloe used a sample of 45 black Setswana-speaking children between the ages of 5 years 9 months and 7 years 3 months. He correlated their Griffiths Scales developmental quotients (GQ) with their Aptitude Tests for School Beginners (ASB) scores and their end-of-the-year marks.

The ASB is an aptitude test designed to assess the abilities of young children in the early school period. The complete test battery is comprised of eight subtests, namely Perception, Spatial, Reasoning, Numerical, Gestalt, Co-ordination, Memory, and Verbal Comprehension. The results indicated that the mean performance of South African Black children was similar to the British (1960) standardization sample. There was a significant positive relationship between the Griffiths Scales GQ and the ASB total. However, a correlation of the Griffiths GQ with the mean score of subjects on each of the ASB subscales, revealed that only the Spatial and Verbal Comprehension subtests of the ASB correlated significantly with the GQ scores.

concluded that the Griffiths Scales are an appropriate diagnostic measure for use with South African Xhosa-speaking children.

The Griffiths Scales have proven to be useful in assessing children who have various disorders and disabilities. Hanson and Aldridge Smith (1982) demonstrated the diverse nature of problems for which the Griffiths Scales are utilized. This is represented in figure 4.

Figure 4
The use of the Griffiths Scales for various problems

As can be noted from figure 4, children with delayed speech, are the second most common population group for which the Griffiths Scales are utilized. Children with a hearing
impairment fall into 9th position. It is these cases which further emphasize the urgent need to adapt the small and large pictures utilized in the Hearing and Speech Scale, so as not to bias those children who are already affected by a physical handicap.

Through studying the profiles of a number of children, Griffiths (1984) identified prominent patterns which can be used for diagnostic purposes. Graphically represented profiles are utilized to indicate the wide differences with respect to the children’s developmental abilities. To illustrate through an example, it is reported that a child who is physically disabled or suffering from some form of physical weakness, will fall out on the Locomotor Scale (Scale A) and the Eye and Hand Co-ordination Scale (Scale D), while the remaining scales will fall within the average range.

Lister (1981) purposes the relevance and value of utilizing graphically presented profiles. Lister (1981) found that substantial numbers of developmental profiles were characterized by marked unevenness. Children between the ages of 2 years and 7 years were included in his sample (N = 63). Luiz (1988d) substantiates Lister’s (1981) study and confirmed the usefulness of developmental profiles for identifying specific developmental delays in a clinical population of South African children. Luiz’s (1988d) sample (N = 98) consisted of children between the ages of 2 years 6 months and 7 years 7 months. In both Lister’s (1981) and Luiz’s (1988d) studies, a differences between the higher and lowest developmental quotients were around 16 points or more. Furthermore, through profile analysis, a vulnerable child could be identified by comparison with an established subtype profile. Subsequently, areas of risk by profile analysis could be identified and hence referred to the appropriate resource(s) for remediation.

Sweeney’s (1984) study aimed to determine whether certain profile typologies could be derived from the Griffiths Scales in the South African context. The sample consisted of 198 children in the age ranges 2-4 years (n=43) and 4-6 years (n=155). Three clusters were identified in each of the two groups. The clusters were labelled as a high ability group, an average ability group, and a low ability group. The results of this study suggested that clinical typologies for South African pre-schoolers and early school-age children, can be developed using the Griffiths Scales.

Huntley (1994) reported the following about the Hearing and Speech Scale, “In one sense the whole of the C Scale is culturally biased. But appropriate translations into other
languages are usually successful. ... The large picture probably needs updating and varying for different cultures” (page not numbered). Regarding the large picture (used in Scale CQ), when the child is asked to name 6 or more objects in the large picture [C.IV.I]. Huntley (1994) added,

“I always struggle to get much out of the pictures. Children no longer seem to look at such drawings, or perhaps it is the 1950’s style that is outdated. If the picture was full of dinosaurs, turtles and pizza, we would probably get sentences out of two and a half year olds!” (page not numbered).

Huntley (1996) compared the scores of children (N = 665) living in urban areas (n = 488) and rural areas (n = 177) on the Griffiths Scales. He found that the children in the rural areas scored significantly lower than those in urban areas, across all areas of development. The Personal-Social and Hearing and Speech Scales were the most highly significant.

Preliminary to the revision of the Extended Griffiths Scales, an international survey regarding the strengths and weaknesses of the Scale was conducted among the users of the test (Luiz, et. al., 1995). A number of problematic items which the users of the Scale perceived to be culturally biased and non-contemporaneous were identified. Pertaining specifically to the Hearing and Speech Scale, it was clearly indicated that the revision of certain items is needed. The 20 small pictures and the large picture were identified (See Table 2). The findings of this survey, together with the afore-mentioned studies, have been utilized in the revision of the 20 small pictures and large picture of the Hearing and Speech Scale.

Regarding research completed at both a national and international level on the use of the Griffiths Scales, their contribution has unquestionably been invaluable. The Scales have been utilized in case studies (e.g., Krige, 1988; Luiz, 1988a, 1988b), correlational studies (e.g., Heimes, 1983; Lombard, 1989; Luiz, 1988c; Mothuloe, 1990; Stewart, 1997; Worsfold, 1993), normative studies (e.g., Allan, 1988; Allan, 1992; Bhamjee, 1991) and validity studies (e.g., Luiz, et. al., 1995). Furthermore, their use has demonstrated the essential role that the Scales have fulfilled in the assessment of South African children of all cultural and socio-economic groups. However, an individual's performance on the Griffiths Scales is influenced by both social and cultural factors. Luiz (1994) reports social and cultural factors to be more influential on verbal items, for example with the large picture and the small picture-card depicting a flag (from Scale CQ). With special emphasis on the Hearing and Speech Scale, the influence of social and cultural factors results in the questioning of the
relevance of certain stimuli in both the large picture and 20 small pictures. Luiz, et. al., (1995) confirmed the need to replace such culturally-biased and non-contemporaneous items with items that are equal in difficulty, but more culturally relevant and contemporary to the children of South Africa. Other sources of research (Huntley, 1996; Stewart, 1997; Tukulu, 1996) are in agreement with Luiz et. al., (1995) reporting on the need for revision of the 20 small pictures and large picture of the Hearing and Speech Scale. Hence, the adaptation of these items is the next step in the research process with the Griffiths Scales. It is from this thought process that a section of the Hearing and Speech Scale was adapted, with special emphasis on the children of South Africa.

Table 2
Percentages of the ten least well received culturally-biased and non-contemporaneous items on the Extended Scales

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CULTURE FAIR (%)</th>
<th>CONTEMPORARY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B:6:3 Can go alone on errands to nearby shops</td>
<td>36</td>
<td>53</td>
</tr>
<tr>
<td>A:5:5 Can climb on and off a bus unaided</td>
<td>43</td>
<td>41</td>
</tr>
<tr>
<td>C:4:1 Name 6+ objects in the big picture</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>C:3:2 Picture vocabulary (12)</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td>B:3:2 At table uses spoon and fork</td>
<td>52</td>
<td>14</td>
</tr>
<tr>
<td>B:5:5 Can fasten shoe buckles</td>
<td>23</td>
<td>39</td>
</tr>
<tr>
<td>B:4:5 Helps lay table, places a few items</td>
<td>40</td>
<td>22</td>
</tr>
<tr>
<td>A:4:3 Marches in time to music</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>C:6:4 Knows 10+ capital letters</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>C:5:6 Names 12 objects in big picture</td>
<td>24</td>
<td>19</td>
</tr>
</tbody>
</table>

The figures in the table cells indicate the percentage of negative responses the items received on the particular category.

On reviewing the above mentioned assessment instruments for infant and child development, the Griffiths Scales and the Gesell Schedules appear to be the most suitable. These tests meet the requirements of an instrument which assesses the comprehensive development of infants and pre-school children. They can both be administered to infants and pre-school children and both cover the important areas of development. Despite the advantages of any assessment instrument, testing individuals within a culture for which the instrument was not developed or standardized can have long lasting consequences for that
individual been assessed. Hence, when living in a multicultural society, such as South Africa one needs to be continually aware of the possible limitations of the instrument utilized for the various cultural, or language groups.
CHAPTER THREE
LANGUAGE ACQUISITION

This chapter includes a discussion of the theories of language acquisition as well as, several of the standardized tests utilized in the assessment of a child's language. Furthermore, the administration and scoring of the Hearing and Speech Scale of the Griffiths Scales is briefly discussed.

THEORIES OF LANGUAGE ACQUISITION

Interest in child language and its development first grew in the scientific climate of positivism and evolutionism in the second half of the 19th century. It was influenced by Darwin's evolution theory. The initiators of child language investigation were philosophers, physicians, psychologists and educationalists (Mussen, et. al., 1984; Oskaar, 1983).

A German physiologist, Wilhelm Preyer, was the first to systematically research a child's entire development, including his language development. In the daily observation of his son, from birth to the end of the third year, a lot of attention was given to motor development, as well as to psychological development, with special emphasis to the development of the senses, memory, language and will. His work was commended for having considered the field as a whole and with scientific precision. The writings of his observations were recorded in a diary format and its merit found its way to places which include America, France, Poland and Bulgaria. Through the activities of psychologists and educationalists, on is able to divide the child language research of the late 19th century into two separate trends, which diverge from one another (Oskaar, 1983). Preyer and his followers, belong to the so called "intellectualist trend", which according to Stern and Stern (1907), "overestimates the intellectual meaning of the child's first language phase and also the child's independence in language production" (p.6).
Wilhelm Wundt, the founder of experimental psychology, started a new era, namely, the "voluntarist" (Oskaar, 1983). This was the name given to the second trend. Wundt and his followers considered language acquisition mostly as a product of imitation, and the first attempts at language as manifestations of emotion. Wundt, who closely observed the sound development of his own children, considered child language as a product of the child's environment in which the child participates almost entirely passively. According to Wundt (1911), a child is said to imitate most easily those sounds which he perceives most clearly.

The lively discussion which took place at the turn of the century between the "intellectualists" and the "voluntarist", showed that the well-known opposing opinions on the origin of language from Greek philosophy - the nature-nurture debate - had also been carried over to child language research (Oskaar, 1983).

In 1907, a climax of child language research was reached by work completed by two psychologists, Stern and Stern. Their impetus lay in the syntheses of the two theoretical trends mentioned above. They considered the realisation of child language to be the result of a convergence it was stated that,

*only in the continuous cooperation of the inner, compelling aptitudes for speaking and the external factors of environmental language which offer these aptitudes, contact points and the material for their realization, can the child's language acquisition take place* (Stern & Stern, 1928, p.129).

Their research was based upon detailed observation of two of their children until after the first four years, and it was supplemented from data from a third child and from relevant German and international literature. Stern and Stern (1928) divided the general trend of child language development into a preliminary stage and four further stages. They state that the main tasks in the acquisition of spoken language can be regarded as fulfilled by the fourth or fifth year of life. The stages proposed by Stern and Stern (1928) are as follows:
Preliminary stage

This stage covers the first year of life. The precursors to the actual performance of speech take place in four forms during this stage, namely: crying and babbling, as spontaneous ways of acting, as well as sound imitation and language understanding as reactions to what is heard. Around the third month the babbling period begins. At about the tenth month, the first word which is understandable in the environment may appear.

The First stage

This stage includes the age-range 1 year to 1 year 6 months. It was mentioned that when the isolated functions of the preliminary stage (babbling, meaningless imitation and speechless comprehension) form a unit, then actual speech begins. Furthermore, language exists as soon as there is a connection between one's own utterances and understanding, and when understanding is connected to one's own utterances. Utterances are understood as one word sentences, which lack a certain grammatical and conceptual character.

The Second stage

The age-range included in this stage is 1 year 6 months to 2 years. A rapid increase in vocabulary, as well as the awareness that each object has its own name, are two characteristics of this stage. Questions concerning the names of objects are raised. Sentences of two and more non-inflectional words follow the one-word stage. Non-inflectional words are described as exclamative, interrogative and affirmative. The viewpoints under which a child classifies the world around him occurs successively. One is made aware of this process through differentiation of the child's vocabulary. Stern and Stern (1928) differentiate substance, action, relation, and attribute stages: first nouns are developed, then verbs, followed by adjectives and finally prepositions appear.

The Third stage

This stage covers the age-range from 2 years to 2 years 6 months. Inflexion is a characteristic of this stage, and comparison and conjugation also begin to
become evident. Questions include the name of objects, what (What is this?) and where (Where apple?) type questions, and confirmation questions (Can I eat it?). Stern (1967) states that during stage three the most important syntactic developments are, "intense use of series of sentences, whose parts are still grammatically in paratactic relation to each other, although they should logically express manifold relations and even subordination" (p.58). For example, "Mommy runs, daddy runs too".

The Fourth stage

This stage covers the age from 2 years 6 months and beyond, and involves the child learning how to express the co-ordination and subordination of ideas by hypotaxis. New formation of words are noticeable, as well as the use of compound sentences. The influence of progressive intellectualization on language improvement is acknowledged by Stern & Stern (1967).

Unlike Stern and Stern (1967), Jean Piaget (1967) and his followers stated that language can be defined only in terms of a cognitive framework. Piaget's theory of cognitive development is one that attempts to explain how the child adapts to and interprets objects and events in the world around him (Piaget, 1952a, 1967). He formulated a theory of intellectual development that views cognition as a special instance of biological adaptation. Piaget together with other cognitive psychologists maintain that language development reflects, rather than directs, cognitive processes. That is, it is cognitive development that guides a child's language acquisition (Mussen, et. al., 1984). Piaget postulated that a child's language develops in well-delineated stages, beginning from birth. Piaget differentiates at each stage between Mastery of Comprehension and Mastery of Expression (Kaplan & Saddock, 1991). Like Piaget, Griffiths (1960) differentiated between the comprehension (understanding, passive speech) of what is said around a child, and the child's ability to express (active speech) himself verbally. In her writings, Griffiths refers to several important stages of language development. The following stages are a synthesis of Piaget (1952a, 1952b, 1959) and Griffiths (1960).
0-6 months

Mastery of Comprehension

The infant:

- Shows startle response to loud or sudden sounds;
- Attempts to localize sounds, turning eyes or head;
- Listens to a soft bell nearby, searches for sounds with eye movement;
- Appears to listen to speakers, may respond with a smile;
- Recognizes warning, angry and friendly voices.

Mastery of Expression

The infant:

- Has vocalizations other than crying;
- Has differential cries for hunger, pain;
- Makes vocalizations to show pleasure (including laughter);
- Plays at making sounds;
- Babbles (repeats a series of sounds) to persons.

7-11 months. *Attending to language stage*

Mastery of Comprehension

The infant:

- Shows listening selectivity (voluntary control over response to sounds);
- Listens to music or singing with interest;
- Recognizes "no", "hot", own name;
- Looks at pictures being named for up to one minute;
- Listens to speech without being distracted by other sounds.

Mastery of Expression

The infant:

- Responds to own name with vocalizations;
- Imitates the melody of utterances;
- Uses jargon (own language);
- Produces two to four syllable babble ("goo-goo", "dadada");
- Has gestures (shakes head for "No!");
- Has exclamation ("oh-oh");
Plays language games (pat-a-cake, peek-a-boo).

12-18 months. **Single-word stage**

**Mastery of Comprehension**

The infant/young child:
- Shows gross discrimination between dissimilar sounds (bell vs. dog vs. mother or father's voice);
- Understands basic body parts, names of common objects;
- Acquires understanding of some new words each week;
- Identifies simple objects (baby, ball) from a group of objects or pictures;
- Understands up to 150 words by age 18 months.

**Mastery of Expression**

The infant/young child:
- Uses single words (mean age of first word is 11 months, by age 18 months, child is using up to 20 words);
- Uses sentences of four or more syllables;
- "Talks" to toys, self, or others, using long patterns of jargon and occasional words;
- Reacts to music vocally;
- Approximately 25% of utterances are intelligible;
- All vowels articulated correctly;
- Initial and final consonants often omitted.

12-24 months. **Two-word messages stage**

**Mastery of Comprehension**

The young child:
- Responds to simple directions ("Give me the ball");
- Responds to action commands ("Sit down");
- Understands pronouns (me, him, her, you);
- Begins to understand complex sentences ("When we go to the shop I'll buy you a sweet").
Mastery of Expression

The young child:
- Uses two-word utterances ("mommy sock", "all gone");
- Imitates environmental sounds in play ("rrmm-rrmm", "moo");
- Refers to self by name, begins to use pronouns;
- Echoes two or more last words of sentences
- Begins to use three-word telegraphic utterances ("all gone ball", "me go now");
- Produces utterances which are 26% to 50% intelligible;
- Uses language to ask for needs.

24-36 months. Grammar formation stage

Mastery of Comprehension

The young child:
- Understands small body parts (elbow, chin, eyebrow);
- Understands family name categories (baby, granddad);
- Understands size (the little one, the big one);
- Understands most adjectives;
- Understands functions (why do we eat, why do we sleep);
- Identifies a simple object when named (spoon, chair).

Mastery of Expression

The young child:
- Uses real sentences with grammatical function words (can, a, must, will, the);
- Usually announces intentions before acting;
- Holds "conversations" with other children, usually just monologues;
- Lessens jargon and echolalia gradually from their speech;
- Uses increased vocabulary (up to 270 words at 2 years, 895 at 3 years)
  includes slang;
- Produces speech which is 50% to 80% intelligible;
- Articulates P, b, and m correctly;
- Shows rhythmic disturbances in their speech.
36-54 months. *Grammar developmental stage*

**Mastery of Comprehension**

The young child:

- Understands prepositions (behind, between, under);
- Understands many words (up to 3 500 at 3 years, 5 500 at 4 years);
- Understands cause and effect (What do you do when you are cold?);
- Understands analogies (Food is to eat, milk is to).

**Mastery of Expression**

The young child:

- Uses correct articulation of *n, w, ng, h, t, d, k, g*;
- Uses language to relate incidents from the past;
- Uses wide range of grammatical forms (plurals, past tense, questions, negatives);
- Plays with language (rhymes, exaggerates);
- Produces speech which is 90% intelligible, with occasional errors in the ordering of sounds within words;
- Is able to define words;
- Egocentric use of language rare;
- Can repeat a 12-syllable sentence correctly.

55 months on. *True communication stage*

**Mastery of Comprehension**

The young child:

- Understands concepts of number, speed, time, space;
- Understands left and right;
- Understands abstract terms;
- Is able to categorize items into semantic classes.

**Mastery of Expression**

The young child:

- Uses language to tell stories, share ideas, and discuss alternatives;
- Shows increasing use of varied grammar;
- Is able to engage in spontaneous self-correction of grammatical errors;
Stabilizes the articulation of \( f, v, s, z, l, r, th \), and consonant clusters; produces speech which is 100% intelligible.

In order to understand the theories of language acquisition and language development, one must remember that man is a biological, psychological, social, intellectual, cultural and spiritual being. Therefore, questions about language acquisition need to be addressed from a holistic point of view, and individual deviations must always be expected, corresponding to the reality of human performance (Gesell & Ilg, 1946). Truby (1976) stated that "Every child is different ... Not only is the language of every child unique, but so is the developmental pathway associated with the establishment and accomplishment of that language" (p.84).

Furthermore, as is evident from the above, different schools, and hence theories of language development, do not agree when and according to which criteria, the beginnings of speech should be set. They vary from those schools who comprehend the beginnings of language from birth, and those who comprehend it at the two-word stage (Oskaar, 1983). These opposing views continue to be held by researchers of today (Bousted, 1989; Swan, 1992). Regarding the assessment of a child's expressive language Griffiths' (1960) proposed scoring criteria, utilized for the 20 small pictures and the large picture of the Hearing and Speech Scale, were devised from sound developmental theories which included the domain of language development.

**STANDARDIZED TESTS SPECIFICALLY PERTAINING TO CHILDREN'S LANGUAGE**

Language is of central importance in childrens' development and is vital for their success at school and in the world beyond. Normally developing children often seem to be inexhaustible sources of spoken language. They seem to relish their developing abilities and to use them on every possible occasion. However, the situation immediately becomes more complicated when an attempt is made to determine precisely what language a child is capable of producing, how much a child
understands, and, if the child appears to be experiencing difficulties, just where these difficulties lie. Furthermore, an important issue to keep in mind is that the assessment of a child's language occurs over a fixed period of time and within a finite number of situations. Development is never static, and therefore an assessment at one point in time is a frozen "snapshot" of a dynamic process. (Griffiths, 1945; Oskaar, 1983). The valid assessment of language is somewhat of an enigma for many clinicians working in the field of early child development. Despite the multitude of resources for language assessment, language continues to be one of the most challenging disorders to evaluate (Shipley & McAfee, 1992). This is no surprise when one considers how varied and complex language really is.

Shipley and McAfee (1992) maintain that speech-language samples are invaluable in the assessment of a child's communicative abilities and disorders. They propose that a speech-language sample is the basis for determining whether a problem exists and, if so identifying the child's specific deficiencies and needs. They maintain that the sample should be long enough to obtain a true representative of the child's speech and language. It is proposed (Bloom & Lahey, 1978; James, 1989) that a minimum of 50 distinct utterances is needed for a language sample. Owen (1991) forwards a number of recommendations in the collection of speech-language samples, all of which are in accordance with Griffiths' (1960, 1970) guidelines for the administration of the 20 small pictures and the large picture of the Hearing and Speech Scale, of the Griffiths Scales. These include: establishing a positive relationship before collecting a language-sample; using materials that are interesting and age-appropriate to the child; using phrases such as, "Tell me about ..." and "Tell me more about ...", as opposed to "What are ..." questions; altering the context and/or materials employed; and being as unobtrusive as possible.

Harris (1990) refered to a number of strategies, which are necessary in the assessment of an individual's language development. An elicitation procedure, which makes it possible to examine a very broad spectrum of linguistic abilities in a systematic manner over a relatively short period of time, is one such strategy. This procedure is designed to provide a child with the opportunity to respond to a specific set of stimuli. The relationship between the stimulus and the child's response, is
then taken as an indication of the child's mastery of a particular aspect of language.

There are two types of elicitation procedures. The first involves the child making a non-verbal response to a verbal stimulus, and is used as a measure of the child's comprehension of spoken language. The second requires the child to make a verbal response to either a verbal or a non-verbal stimulus, and is used as a measure of the child's ability to produce spoken language. In the present study the latter procedure, which involves the child generating a verbal response to a non-verbal stimulus, was utilized. The language area sampled in this procedure is production (or expression), as opposed to comprehension (Griffiths, 1970).

The main advantages of elicitation procedures, is that they give a relatively high degree of control over areas of linguistic ability which are being assessed. Furthermore, because the child is provided with simplified situations which have been specifically designed to help the child understand what is required, it might be argued that elicitation procedures should provide an optimal measure of performance.

Formal tests are the largest category of language assessment instruments. All of these tests rely upon some combination of elicitation strategies. To the extent that tests provide a standard form for the administration of these strategies, they are referred to as "standardized tests" (Harris, 1990). A limited selection of utilized standardized tests of children's language will be described. Since different tests are designed to assess different aspects of linguistic ability, they will be considered under four categories, namely: tests of articulation; tests of vocabulary; tests of grammatical ability; and tests of more general aspects of psycholinguistic ability.

Articulation tests

The Edinburgh Articulation Test (EAT) is designed as a screening measure for children whose articulation of English consonants is retarded or otherwise abnormal. The elicitation procedure includes the use of a picture stimulus. The procedure for administering the EAT, is to elicit a series of 68 non-imitated words from the child in response to a set of pictures. Normative scoring involves marking
the child's performance on each item as correct or incorrect, and converting this to a
standardized score or an age equivalent (Harris, 1990).

**Goldman-Fristoe Test of Articulation** is designed to assess sounds in the
initial, medial, and final positions (e.g., /l/ in light, balloon, and ball), allowing the
clinician to identify the number and types of errors (Goldmann & Fristoe, 1986).

**Vocabulary tests**

The **British Picture Vocabulary Test** (BPVT) measures the extent of an
individual's receptive vocabulary, by requiring a person to select one picture from a
set of four in response to a verbal stimulus. The person may respond by gesture or
by eye pointing. Standardized scales are available for children for as young as 2
years to 17 years 11 months of age. The use of the gestural response, means that
the BPVT may be especially useful with children who experience difficulties with
spoken language, including those who stutter, autistic children and children with
cerebral palsy (Harris, 1990).

**Peabody Picture Vocabulary Test-Revised** (PPVT-R) is a standardized
vocabulary test for ages 2 years 6 months to 18 years of age. It consists of 175
picture plates, each with four pictures. A stimulus words is spoken by the examiner
or shown on a printed card. The subject then points to or gives the number of the
picture which resembles the stimulus word most closely (Harris, 1990; Lezak, 1995).

**Expressive One-word Picture Vocabulary Test** and the **Expressive One-word
Picture Vocabulary Test - Upper Extension**. These tests are utilized in the
assessment of vocabulary through the elicitation of expressive language. The age
range include children between 2 and 11 years 11 months, and 12 and 15 years
respectively.

The Hearing and Speech Scale (Scale CQ) of the **Griffiths Scales** consists of
a large coloured picture and 20 small coloured pictures, which are utilized for
assessing a child's expressive language development (Grove, 1982). When
assessing older children, it is the gradual enrichment of vocabulary, the use of different parts of speech, learning to use sentences, and to develop paragraphs of description in relation to the presented large picture, that comprises the Hearing and Speech Scale (Griffiths, 1960). The administration and scoring of Scale CQ is presented in more detail further on in the present chapter.

Tests of Grammar

The Word Order Comprehension Test (WOCT) was designed to determine whether a child, who is able to understand single words, can also understand the relationships which are expressed by different forms of word order. The test requires the child to select one of a pair of pictures to match a stimulus sentence. The test consists of nine sets of items and each set has two practice items and ten test items (Fenn, 1979).

The Northwestern Syntax Screening Test (NSST) was designed to be used as a screening device, in order to identify children between 3 years and 8 years of age, who require further assessment and possible intervention (Lee, 1969). The test measures the child's command of a range of syntactic forms, in terms of both comprehension and production (Harris, 1990).

The Test for Reception of Grammar (TROG) was designed to measure children's comprehension of a range of grammatical devices. It can be administered to children between the ages of 4 and 13 years. It is recommended as being particularly suitable for children suffering from specific language disorders, deafness, mental retardation and cerebral palsy (Bishop, 1982; Harris, 1990).

Tests of general psycholinguistic ability

The Reynell Developmental Language Scales (RDLS) provides separate measures of language comprehension and language production, which may be used independently or together in order to provide a comparison of a child's relative strengths and weaknesses in the two areas (Reynell & Huntley, 1985). The RDLS includes an elicitation comprehension procedure, in that the child is told to
manipulate simple toys according to a standardized administration procedure (Harris, 1990).

The Illinois Test of Psycholinguistic Abilities (ITPA) has become one of the best known and most widely utilized of all language tests (Harris, 1990). Like the RDLS, it is based on an explicit model of language comprehension and production. The ITPA is suitable for children between the ages 3 years and 10 years 3 months.

The Halstead-Reitan Batteries for children is comprised of two separate tests, namely the Halstead Neuropsychological Test Battery for children (HNTBC) and the Reitan-Indiana Neuropsychological Test Battery for children (RINTBC). The former is suitable for children in the 9-14 year age range, and the latter for children in the 5-8 year age range. The RINTBC consists of downward extensions and simplifications of tests in the older children's battery, plus six tests that Reitan designed for children in this age range. The Aphasia Screening Test, a subtest of the battery, is intended to identify certain failures of performance and specific deficits, by screening for a variety of language-based deficits including reading, spelling, articulation, and naming problems (Lezak, 1995; Llynd & Obrzut, 1981). Furthermore, the Aphasia Screening Test is useful in revealing receptive and expressive aphasic difficulties (Incagnoli, Goldstein & Golden, 1986).

The inclusion or exclusion of speech items from various scales utilized in the assessment of infant and child development, received increasing recognition from Ruth Griffiths. Griffiths (1960) stated that although the researchers (for example, Bayley, Shirley, Buhler, Gesell, and Cattell) include speech items, they vary to a large extent in the number of such items they include, and therefore in the importance they attach to the acquisition of speech and hence, the testers ability to measure language development. McCarthy (1930) stated that "many writers leave periods of several months, during which they evidently were more interested in motor, sensory, social, or emotional aspects of the children's development, and for which no language items appear in their scales" (p.481).
McCarthy (in Carmichael, 1946) added that, "Bayley does not have any language items from the twelfth to the seventeenth month, Shirley has none from the sixth to the ninth month or from the eleventh to the fifteenth month" (p.487).

The number of verbal items evident in the first two years of life range from five (Buhler & Hetzer, 1935) to twenty-eight (Gesell & Thompson, 1929), most of which belong exclusively to the second year of life. Griffiths saw a gap in the assessment of children's speech and language development. This resulted in Griffiths placing equal emphasis on speech, as on other aspects of human development. Speech development in the first year of life is an exceptionally rapid process. For this reason, the inclusion of speech items from birth is a necessary step for a thorough assessment of any infant. The Hearing and Speech Scale, of the Griffiths Scales contains fifty-two items altogether for the first two years of life. A few additional speech items occur in the Personal-Social Scale. Thus, Griffiths (1960, 1970) emphasised that a comprehensive assessment of an infant or child, should include speech-related items. Griffiths' inclusion of the speech items in the Griffiths Scales resulted in the development of a Scale which allows for a holistic and comprehensive assessment of infants and children in the present day.

ADMINISTRATION AND SCORING OF THE HEARING AND SPEECH SCALE OF THE GRIFFITHS SCALES

As the scope of this study does not allow the author to expand in any detail on the administration and scoring on all six Scales, readers are referred for further information to the Griffiths manuals (1960; 1970). As the Hearing and Speech Scale, with emphasis on the 20 small pictures and the large picture, is the focus of the present study these shall be elaborated below.

Administering and scoring the 20 small pictures and the large picture of the Hearing and Speech Scale

Griffiths (1970) suggested that testers make the fullest notes possible of the
children’s verbal responses. The reasoning behind this suggestion was that the
responses, for example, to the large picture, are evidence of the child's earliest
capacity for composition. Some children speak at length, enjoying the picture,
searching out as many objects as possible, and talking about them. However, the
time used in recording as much as possible from the large picture, can yield valuable
information for a more complete assessment. Responses can provide information
on such matters as, the number of objects named, parts of speech used, length of
sentences, descriptive sentences, etcetera. Therefore, anything said by the child in
response to the picture, and as much as possible of the child's verbal responses
throughout the examination, should be recorded.

The 20 small pictures of the Hearing and Speech Scale were originally utilized
with children in their fourth sixth month of age, i.e., their second year of life (item
C.II.15). It is at this age that one small picture is utilized in order to obtain a verbal
response. However, due to the revision and restandardization of the Birth to 2 years
Griffiths Mental Development Scales (Huntley, 1996), the Picture Vocabulary (20
small pictures) begins from the third year (C.III.2). The child is expected to name 12
of the small pictures correctly. These pictures are numbered in order of difficulty.
Babbled names can be accepted only if they are well known and likely to be used in
the home: e.g., "wow-wow" for "dog", "pussy" for "cat", etcetera. Immaturity, such as
"poon" for "spoon" is scored plus, but these immature words should be recorded.
The small pictures are shown one at a time in correct order, as numbered on the
back of the pictures. The tester stops if the child fails six pictures consecutively.
The number of pictures which the child needs to name correctly in order to pass the
item, depends on the age of the child being tested (Griffiths, 1954, 1960; Huntley,
1996).

The large picture of the Hearing and Speech Scale is first utilized in the child's
fourth year of life, where they are asked to name 6 or more (6+) objects in the large
picture (Item C.IV.1). The large coloured picture is produced and the child is asked:
"Tell me all about it". The child can be encouraged, but objects must not be pointed
out, nor must questions be asked about details. One may ask: "What can you
see...? What are they all doing?”. By the child’s fifth year of life (58 months) (Item C. V.5) s/he should describe the picture in one or more descriptive sentences, and not merely name the objects in it. For a sentence to be scored correct it must comprise of 6 or more syllables. Everything the child says should be recorded. As was the case with the small pictures, so is the administration and scoring of the large in line with the theories of language acquisition referred to above.

As the author’s subject population was between 60 and 83 months of age (i.e., between 5 and 6 years) special emphasis for this age group is given to the scoring criteria suggested by Griffiths (1970). At the age of 60 months (Item C.V.6) the child is expected to name 12 or more objects/stimuli in the large picture. At the age of 66 months (Item C.VI.3) the child is expected to use 6 or more descriptive words when responding to the picture. At the age of 70 months (Item C.VI.5) the child is expected to use 6 or more personal or possessive pronouns when responding to the picture. And finally, when the child is 76 months (Item C.VII.2) s/he is expected to use 3 or more descriptive sentences when responding to the picture.

The responses given to the large picture and the small pictures are to be scored according to the guidelines given in the manual (Griffiths, 1960). The large picture is scored in four ways. The one measurement involves the child naming the objects/stimuli in the picture. The second involves the child using descriptive words; thirdly descriptive sentences; and finally the child’s use of personal and possessive pronouns. The 20 small pictures are scored positive (correct) if the stimuli was identified by the child. See Table 1 for the expected number of correct responses (criteria) proposed by Griffiths (1960), when scoring the 20 small pictures and the large picture of the Hearing and Speech Scale (Scale CQ).
CHAPTER FOUR
METHODOLOGY

PROBLEM FORMULATION

Since the introduction of the Griffiths Scales in South Africa (1977), several studies have been conducted at both national and international levels. The findings of these studies have been reviewed in the previous chapters of the present study. Evidence presented regarding the 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales, clearly indicated that the users of the Scale perceived these items to be culturally-biased and non-contemporaneous, and thus in need of revision.

Hence, this study was aimed at providing a continuation of the research process existing in South Africa, which involved adapting a section of the Hearing and Speech Scale. The aims of the present study were two fold.

Aim 1: To revise the 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales, making them more culturally relevant for the children of our contemporary world, especially in South Africa.

Aim 2: To describe the performance of South African children, between 60 and 83 months of age, utilizing the revised pictures.

A two-fold methodological approach was used to investigate the aims. Firstly, in order achieve aim 1, a qualitative methodology was employed. Secondly, in order to achieve aim 2, a quantitative descriptive methodology was employed.

METHODOLOGY FOR THE QUALITATIVE PHASE

Research Approach

In order to reach the first aim of the study a qualitative, exploratory and descriptive research approach was utilized (Gmeiner & Poggenpoel, 1996). The aim was to elicit data on the perceptions of a broad spectrum of individuals, who are working within various cultural groups, as well as with children from various cultural and age groups.
Although qualitative research has received criticism largely regarding its limitations for generalizability, replicability and researcher bias, these are outweighed by its many advantages, which made it more pertinent for the initial component of this study (i.e., the exploratory phase) (McGiugan, 1990). The advantages include the fact that deliberate avoidance of predetermined research hypotheses and theories, enables the researcher to identify unanticipated outcomes. This in turn ensures that the richness, quality and depth of data is maximised and preserved (Geertz, 1973). Also advantageous, is that validity checks are included in qualitative research (Marshall & Rossman, 1989).

Because qualitative studies often forfeit the rigor of statistically-based checks and hypotheses, they can yield interesting descriptions which nevertheless lack convincing evidence. To counteract this methodological weakness, a quantitative stage was used in the second phase of the study.

Participants

For the qualitative component of the study, non-probability sampling, specifically purposive sampling was employed. Purposive sampling involves the researchers using their own judgement about which respondents to choose, and selecting only those who best meet the purpose of the study. The advantage of purposive sampling is that the researchers can use their research skills and prior knowledge to select respondents appropriately (Bailey, 1987). The resultant population consisted of the executive committee members of the Association for Research in Infant and Child Development (ARICD) in the United Kingdom. Additionally 17 “expert” Griffith’s users and “lay-experts” working in early child development throughout South Africa, were included in the exploratory stage of the study. The participants were asked to comment on the cultural appropriateness and relevance of the 20 small revised experimental pictures and the large revised experimental pictures.

Measure

Letters were sent to the selected participants. An open-ended questionnaire was utilized for the qualitative component of the study (See Appendix A for the questionnaire & cover letters). The questionnaire was constructed with three open-ended questions pertaining to the 2 large revised experimental pictures (one having a contemporary South African focus, and the other a contemporary British/European/Australian focus) and the 20 small revised experimental pictures, as discussed in Stage 1 below.
Bailey (1987) lists several advantages of open-ended questions, including:

(i) They can be used when all of the possible answer categories are not known, or when the researcher wishes to see what the respondent views as appropriate answer categories;

(ii) They allow the respondent to answer adequately, in all the detail he or she likes, and to clarify and qualify his or her answers;

(iii) They can be used when there are too many potential answer categories to list on the questionnaire;

(iv) They are preferable for complex issues that cannot be condensed into a few small categories; and

(v) They allow more opportunity for creativity or self-expression by the respondent.

According to Bailey (1987) the disadvantages of open-ended questionnaires include:

(i) They may lead to collection of worthless and irrelevant information;

(ii) Data are often not standardized from person to person, making comparison or statistics such as computation or percentages difficult;

(iii) Coding is often very difficult and subjective, leading to low intercoder reliability;

(iv) Open-ended questions require superior writing skills, better ability to express one's feeling verbally, and generally a higher educational level than do closed-ended questions;

(v) Open-ended questions designed to be general and to explore all dimensions of the subject may be too general for the respondent to understand what is meant, requiring the use of probes or for more specific follow-up questions, administered by the interviewer;

(vi) Open-ended questions can require much more of the respondent's time and effort, and may engender a high refusal rate; and

(vii) Open-ended questions require more paper and make the questionnaire look longer, possibly discouraging some respondents who do not wish to answer a lengthy questionnaire.

Bailey (1987) stated that the advantages of mailed questionnaires include:

(i) A considerable saving of money;

(ii) Time saving;
(iii) The questionnaire may be completed at the respondent's convenience;
(iv) Greater assurance of anonymity;
(v) Standardized wording;
(vi) No interview bias;
(vii) Securing information. The mailed questionnaire allows the respondent to consult his or her records, confer with colleagues, or conduct research before answering; and
(viii) Accessibility.

The disadvantages of mailed questionnaires, as cited by Bailey (1987) include:
(i) Lack of flexibility in the questions asked;
(ii) Low response rate;
(iii) Verbal behaviour only;
(iv) No control over environment. There is no assurance that the respondent will be able to complete the questionnaire in private;
(v) No control over question order;
(vi) Any of the questions may remain unanswered;
(vii) Cannot record spontaneous answers;
(viii) Difficult to separate bad addresses from non-responses;
(ix) No control over date of response;
(x) Cannot use complex questionnaire format; and
(xi) Possibly biased sample.

Sellitiz, Johada, Deutsch, and Cook (1959) listed a number of factors which could affect the number of questionnaires returned and the adequacy of data. Several of these factors were incorporated in the construction of the employed questionnaire. Regarding the questionnaire length, it is suggested that a less cluttered format is preferable, even if it requires a longer questionnaire. The cover letter, which explained the nature and purpose of the study, as well as the enlisting of the respondent's co-operation, was chosen to follow a personalized format. A personalized letter was typed rather than reproduced, addressed to the respondent and signed by the researcher (See Appendix B). Regarding the ease of completing and returning the questionnaire, this should be uncomplicated for the respondent to complete. Good questionnaires have clear and adequate instructions for completing the questionnaire, clear response categories, few open-ended questions, and are not too long. Furthermore, it is common practise for the researcher to provide explicit mailing instructions, and to supply a self-addressed and stamped envelope. Finally, regarding the nature of
respondents, many mailed questionnaires are sent to select groups. Generally special
groups are good respondents because they tend to be interested, they are familiar with the
subject and so are able to answer fully and with minimal instructions.

Taking the above mentioned advantages and disadvantages of open-ended as well as,
mailed questionnaires into account, the author decided that the benefits of mailed
open-ended questionnaires outweighed the disadvantages for the qualitative phase of the
study.

Research Procedure

The procedure for the qualitative phase of the study followed a number of stages.
While referring to the guidelines reported by Hambleton (1994), the procedure followed in
this study, for adapting/revising the pictures to make them more contemporaneous and
culturally neutral, was completed in a number of sub-stages:

Stage 1

The preparation of 20 small revised experimental pictures and 2 large pictures.

One can differentiate between a subjective (mental "inner") picture, which is one that
can form in the mind of an absent or even non-existent object; and an objective
picture, which is one that is perceived by the senses. The latter (objective) picture is
the concerned focus in this study. The word "picture" refers to "something which
looks like something else. More specifically, a picture is defined as that which
creates the appearance of something else" (Bower, 1977, p.2). It can therefore be
said that a picture gives a visual representation of something else. We use the
picture to provide for ourselves or for others, a visual representation of something
which is itself not present. The extent to which a picture resembles the original
depends also on subjective factors, such as the expectations of the viewer, the
previous knowledge of the object in question, the viewer's cultural upbringing and
socialization, as well as their emotional state (Ross & Lerman, 1970). To a child, a
landscape drawing which ignores all the laws of perspective, may seem more
realistic than an adult's drawing which adheres strictly to those rules. From this we
can conclude also that the picture is really only an aid to the imagination. Bower
(1977) proposed that young children see pictures as "surrogate objects" and not as
representations of reality.
In making a distinction between a spoken concept (e.g., the word "hill") and a graphically depicted concept (e.g., a picture or sign of a "hill") one can note that in the former (i.e. in a verbal utterance) the hill is referred to, whereas in the picture the hill is visually presented. The visual presentation is the communication channel used in this study. It must be kept in mind that pictorial communication' does not appear out of nowhere, but meets certain social needs, and that it will itself affect social communication. The use of pictures in communication must thus be studied in the broad context of our civilisation (Kramer, Koff & Fowles, 1980).

1.1 A literature study of the development and administration of the 20 small pictures and large picture of the Hearing and Speech Scale (CQ) was conducted.

1.2 A local artist specializing in child art was familiarized with the parameters of the research study and international literature was consulted. Variables including the age, cultural groups, language and gender of the target population, as well as the aim of the study were discussed at length with the artist. Working from the original 20 pictures and the large picture, a contemporary version was hand painted. Photographs were not utilized as young children may have difficulty in processing information due to a lack of experience with photographs and cameras that transform 3-dimensional data to 2-dimensional representations. Furthermore, it was suggested that photographs may contain too much perceptual information, in contrast to line drawings. The increased detail may confuse rather than enhance performance (Kose, Beilin & O'Connor, 1983).

1.3 The hand painted pictures was used as a basis for further development. Modern computer technology was used in this developmental phase. This decision was made for a number of reasons, namely: (i) the separate elements of the composition (e.g., the colour, size, position & proportion) are easily adjusted; (ii) numerous options can be presented in a small space of time; and (iii) the production of small volumes is more cost effective than manual methods. A graphic designer was included in the process. He was familiarized with the parameters of the study. He was given both the original set of pictures, and the hand painted set. Furthermore,

*The graphic designer holds a National Diploma in Graphic Design (N.Dip. Graphic Design) obtained at the Port Elizabeth Technikon in South Africa.
he studied the 2 Griffiths manuals (1954; 1970) and viewed the application of the Scale.

1.4 The development process included researching what was recognized to be typical by the average child. The graphic designer assessed the relevance of the various stimuli in the pictures to contemporary children in the United Kingdom, Europe, Australia and South Africa. It was decided that the illustrations should be bold with rich colours and strong outlines, and be more symbolic than realistic, as this is the manner in which children are learning to recognize objects. The illustrations were aimed at creating a scene which would be familiar to children from different cultural groups. Myatt and Landes (1963) cautioned that the pictures chosen be adequate representations of the specific stimulus words, otherwise the results obtained could be an inaccurate representation of the subject's potential. The members of the research team studied recent British and South African literature, which was relevant to the purpose of the study.

Furthermore, the importance of using pictures that illustrate a variety of activities, was advocated by researchers dealing in communicative disorders (Shipley & McAfee, 1992). The characteristics of a "culture-common" test, proposed in Chapter 5 by Manaster and Havighurst (1972), were incorporated into the revision process of the experimental pictures.

1.5 Once the basic styles of illustration and content were decided upon, the rough layouts and compositions were initiated. The rough layouts, which were initially hand drawn in black and white and then computerized, moved through numerous stages of refining, until satisfaction amongst the team members was reached. This resulted in the development of an "Experimental set" of pictures, i.e., 20 small pictures and 2 large pictures (one having a contemporary British/ European/ Australian focus, and the other a contemporary South African focus).

1.6 Prior to implementing the revised experimental large pictures and small pictures, it was necessary to explore and incorporate comments and suggestions from individuals who were currently, actively involved in early child development. This exploratory phase took place at both a national (South Africa) and international level (United Kingdom).
Stage 2

During this stage, the experimental pictures were forwarded to the Executive Committee of the ARICD as well as, to a selected number of participants throughout South Africa, for their comments and suggestions.

Taking the limitations of time available and geographical distances of the targeted respondents, an open-ended questionnaire was developed and mailed with the experimental pictures, to the selected respondents, as was discussed in the Measure section above. The format of the questionnaire was discussed with an expert in research, in order to ascertain whether the questions would elicit the relevant information.

Stage 3

This stage involved the collection of data. A return date (approximately 5 weeks from the time of sending the questionnaire and pictures), together with an addressed and stamped envelope was enclosed for each of the selected participants. See Appendix A for the questionnaire utilized.

Stage 4

Seventy-five percent of the mailed questionnaires were returned. Barbie (1972, in Bailey, 1987) reported that a 50 % return rate of questionnaires is considered adequate. Hence, the present study received an above adequate response rate, which in turn adds to the value of the findings. The questionnaires were content analyzed. Marshall and Rossman (1989) highlight the challenge to the qualitative researcher, describing data analysis as,

> the process of bringing order, structure, and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in a linear fashion; it is not neat. Qualitative data analysis is a search for general statements about relationships among categories of data; it builds ground theory (p. 112).

Content analysis is referred to in this study, as a method for making inferences by objectively and systematically identifying specified characteristics in the communicated
written responses of the completed questionnaires (Holsti, 1980). Within the framework of content analysis, the comments and suggestions received in the returned questionnaires, were thematically analyzed in terms of the elicited themes prompted by the open-ended structure of the questionnaire. Thematic analysis was selected in order to account for the diversity of the sample, and to provide the researchers with relevant information regarding the respondents’ feedback of the experimental pictures. Themes were recorded in frequencies and reported in percentage format.

Regarding the South African (SA) large revised experimental picture, the most frequently identified revision themes, are presented in Table 3.

Table 3
Most frequently identified thematic categories in need of revision for the SA large revised experimental picture

<table>
<thead>
<tr>
<th>THEMATIC CATEGORY</th>
<th>PERCENTAGE OF RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Water/Sea is too vast</td>
<td>42</td>
</tr>
<tr>
<td>2. People, especially children, socializing in groups not adequately represented</td>
<td>42</td>
</tr>
<tr>
<td>3. Animals (chickens and cows) too large, unrealistic</td>
<td>30</td>
</tr>
<tr>
<td>4. Taxi's are needed</td>
<td>28</td>
</tr>
<tr>
<td>5. The ‘areas’ (urban, rural, shanty) are too closely portrayed</td>
<td>25</td>
</tr>
<tr>
<td>6. Include activities which are more relevant to the majority of SA children, e.g., parks, market stalls, vendors</td>
<td>25</td>
</tr>
</tbody>
</table>

Regarding the South African (SA) 20 small revised experimental pictures, the most frequently identified pictures in need of revision, are presented in Table 4.

It was also suggested (by 22% of the respondents) that the differently shaped and coloured backgrounds of the 20 small revised experimental pictures be changed. This was to eliminated any confusion for children tested with visual deficits. Lerman, Ross and McLauchlin (1965) suggest using pictures of uniform size and background. This was felt to
be necessary since otherwise the child's response could be determined by something other than the primary stimuli. For example, foreground-background competition, size of pictures, and so on.

Table 4
Most frequently identified small revised experimental pictures in need of revision

<table>
<thead>
<tr>
<th>CARD NUMBER</th>
<th>STIMULI</th>
<th>PERCENTAGE OF RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Shop</td>
<td>54</td>
</tr>
<tr>
<td>16</td>
<td>Kettle</td>
<td>50</td>
</tr>
<tr>
<td>7</td>
<td>Flower</td>
<td>42</td>
</tr>
<tr>
<td>4</td>
<td>Train</td>
<td>38</td>
</tr>
<tr>
<td>3</td>
<td>Dog</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>Boy</td>
<td>30</td>
</tr>
</tbody>
</table>

Regarding the United Kingdom/European/Australian large revised experimental picture, the most frequently identified revision themes, are presented in Table 5.

Table 5
Most frequently identified thematic categories in need of revision for the UK/European/Australian large revised experimental picture

<table>
<thead>
<tr>
<th>THEMATIC CATEGORY</th>
<th>PERCENTAGE OF RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aeroplane not in perspective</td>
<td>20</td>
</tr>
<tr>
<td>2. More activity is needed</td>
<td>15</td>
</tr>
<tr>
<td>3. Improve chickens &amp; cows</td>
<td>15</td>
</tr>
<tr>
<td>4. Change the sea/beach area</td>
<td>15</td>
</tr>
<tr>
<td>5. Faces of the people are sombre</td>
<td>15</td>
</tr>
</tbody>
</table>
Stage 5

The most frequently suggested thematic changes were incorporated into the revised experimental set of pictures. The afore-mentioned graphic designer was involved in making these changes. This resulted in the development of the "Revised pictures" and hence, progression to the quantitative phase of the study.

A similar "re-drawing" procedure was carried out by Lerman, Ross and McLauchlin (1965) and Greenwood (1986). These authors found that a number of words in the Word Intelligibility by Picture Identification test (WIPI) were not familiar to a significant percentage of subjects tested. Consequently pictures which were ambiguous, poorly drawn, or confusing in terms of foreground-background were redrawn.

METHODOLOGY FOR THE QUANTITATIVE PHASE

Research Approach

To empirically investigate the second aim of the study, descriptive investigations were undertaken. The performance of Black, Coloured, Indian and White children between 60 and 83 months of age, from three language (English, Afrikaans and Xhosa) and socio-economic groups (upper, middle and lower) were described in terms of their responses given to either of the two large revised Griffiths pictures. Furthermore, the number of correct responses made for each of the 20 small pictures for each cultural group in general, as well as in relation to subject variables (age in months, SES, language group, and gender) for each of the small pictures was undertaken.

South African research on the Griffiths Scales has indicated that numerous variables can be responsible for affecting test performance (Allan, 1988, 1992; Bhamjee, 1991; Hanson, Aldridge Smith & Humes, 1985). A consistent finding in these studies has been the influence of an individual's cultural group on test performance (Allan, 1988, 1992; Heimes, 1983; Mothuloe, 1990; Tukulu, 1996). As all the extraneous variables of any study cannot be totally controlled by either holding them constant or building them into the design, any comparisons of the performance of individuals from the different cultural, language, gender and socio-economic groups need to be interpreted with considerable caution. Due to the present study being exploratory in nature, possible extraneous variables were considered and it was decided by the researcher to treat the cultural groups separately,
Subject characteristics could influence performance on the pictures. In view of this, as well as to allow for a meaningful description of test results, it was necessary to attempt to control important extraneous variables that could exert an influence on the results. This was done by either holding potential extraneous variables constant or by building them into the design. The potential extraneous variables which were controlled in the present study are discussed below.

**Experience with the stimulus**

The content and the nature of a test may not be equally familiar to people from different cultural backgrounds. Items in non-language and non-reading tests are especially culture-bound. All the shapes used in tests are not equally familiar to people in every culture (Frijda & Jahoda, 1969). According to Minde and Kantor (1976) when testing primary school children in Uganda, Africans frequently do not feel at home with materials such as paper and pencils and are no familiar with activities such as drawing and construction. Furthermore, Biesheuvel (1949) also pointed out that some African testees were unfamiliar with pictorial representations. By including children only from pre-schools, all participants were familiar with pictures and telling stories about them.

Urban-rural residence could also play an important role in determining how familiar the subjects are with the contents of the test. Also urban-rural comparisons have been confounded by other variables, especially the level and quality of education (Weisner, 1976). The urban-rural variable was held constant by selecting only subjects who lived in urban areas.

**Experience with language**

Most psychometric tests require the use of language in that the respondent needs to understand the language of the test and needs to respond by means of language. Each cultural group usually has its own language, but even where cultures share the same language, groups may differ in terms of the way in which verbal expressions are formally structured. Furthermore, different cultural groups may assign different meanings to commonly used expressions (Samuda, 1983).
The subjects in the present study were tested in their home language and great care was taken with the translation of item instructions. In this way, every attempt was made to ensure that all the subjects were provided with the best possible opportunity of understanding what was required of them.

**Educational exposure**
Due to the fact that the level and quality of education is likely to affect cognitive test results, this variable was accounted for in the study. Only children attending pre-school were selected. This was done so as to hold the level of educational exposure constant. The researcher was made aware that the quality of pre-school may be varied for children from different cultural and socio-economic groups. However, according to Jowett (1986) the cognitive test performance of children who attended informal play groups was not significantly different, from that of children who attended nursery classes provided by the formal education authorities.

**Socio-economic status (SES)**
Research findings have demonstrated that SES differences influence performance on a variety of measures for children from all the cultural groups (Allan, 1992). Children from the various SES groups have different opportunities and access to both social and educational facilities. Consequently the confounding variable was controlled for in the study. Riordan's (1978) SES classification system was employed. This system is based on the parental education and occupation and different cut-off points are used to classify South African Blacks, Coloureds, Indians, and Whites into SES groups.

**Age**
This variable was held constant by selecting children within the age range 60 to 83 months.

**Status of Central Nervous System (CNS) development**
This potential confounding variable was held constant by only including "normal" children. That is only children who were considered to have a normal birth and developmental history were included in the sample. To determine normality for the purpose of selecting children for the present study, Foxcroft (1985) designed a neurological questionnaire and checklist which she used with other measures of perceptual motor and mental development. The neurological questionnaire was based on criteria proposed by Petersen and Eeg-Olofsson (1971) as a guideline to establish whether or not the development of the child's CNS can be
classified as normal. Subsequent researchers also included the neurological questionnaire in their measures used for the selection of normal children (Allan, 1988, 1992; Bhamjee, 1991). It may be stated that the development of a child's CNS thus appears to be a practical and popular indicator of normality (See Appendix D).

Shipley and McAfee (1992) report a number of medical conditions associated with communicative disorders. These include, Acquired Immune Deficiency Syndrome (AIDS); Adenoidectomy; Allergies; Asthma; Chicken Pox; Colds; Convulsions (Seizures); Croup; Draining ear; Encephalitis; German Measles; High fever; Influenza; Measles; Meningitis; Mumps; Otitis Media; Pneumonia; Sinusitis; Tinnitus and Tonsillitis. Due to the influence of such conditions on an individual's communicative performance, children whose parents' or teachers reported them suffering from any of the above mentioned conditions at the time of testing were excluded from the study.

**Gender**

Previous research has indicated that gender does not appear to be a major confounding variable for the age group investigated in this study (Allan, 1992; Bhamjee, 1991; Hindley, 1960). Despite this statement, an attempt was made to include an equal number of boys and girls in each group.

**Participants**

The present study consisted of two sample groups, as is presented in Table 6. The children's age in both samples ranged between 60 and 83 months. Table 6 highlights the close equivalence between the two samples with regards to the cultural, socio-economic, language, gender and mean age range.

Sample 1 was utilized for the 20 small revised pictures and the large South African revised picture, while sample 2 was utilized for the 20 small revised pictures and the large revised United Kingdom/European/Australian picture.
Table 6

Demographic data for Sample 1 and Sample 2

<table>
<thead>
<tr>
<th>Cultural group:</th>
<th>SAMPLE 1 (N=204)</th>
<th>SAMPLE 2 (N=180)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>65 (32%)</td>
<td>66 (37%)</td>
</tr>
<tr>
<td>C</td>
<td>47 (23%)</td>
<td>34 (19%)</td>
</tr>
<tr>
<td>B</td>
<td>64 (31%)</td>
<td>54 (31%)</td>
</tr>
<tr>
<td>I</td>
<td>28 (14%)</td>
<td>26 (14%)</td>
</tr>
<tr>
<td>SES:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>68 (34%)</td>
<td>58 (32%)</td>
</tr>
<tr>
<td>Middle</td>
<td>93 (47%)</td>
<td>84 (48%)</td>
</tr>
<tr>
<td>Lower</td>
<td>43 (21%)</td>
<td>38 (21%)</td>
</tr>
<tr>
<td>Language group:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>99 (49%)</td>
<td>97 (54%)</td>
</tr>
<tr>
<td>A</td>
<td>45 (22%)</td>
<td>33 (18%)</td>
</tr>
<tr>
<td>Xh</td>
<td>60 (29%)</td>
<td>50 (28%)</td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>113 (55%)</td>
<td>106 (59%)</td>
</tr>
<tr>
<td>Female</td>
<td>91 (45%)</td>
<td>74 (41%)</td>
</tr>
<tr>
<td>Mean age range</td>
<td>71 months</td>
<td>71 months</td>
</tr>
</tbody>
</table>

Percentages in the table cells have been rounded off to the nearest percentage. W = White; C = Coloured; B = Black; I = Indian; E = English; A = Afrikaans; Xh = Xhosa

Table 7 provides a breakdown in percentages of Sample 1 and 2's age composition in two-month ranges. The mean age for both samples is 71 months. Furthermore, the least number of participants for both samples fell in the age range 82-83 months.

Keppel (1991) stated that research results can be generalized to the larger population if subjects are selected randomly from the population. However random sampling is both an expensive and time consuming process (Kerlinger, 1986). Furthermore, the practical considerations of any study need to be taken into account before a sampling procedure is chosen. Statistical generalizations, which depend on random sampling, are often not justified, but the extension of findings to a broader class of subjects is determined primarily by the appropriateness of generalizations in a particular field of research. As stated by Keppel (1991) nonstatistical generalizations depend on knowledge of a particular research area. In view of the exploratory nature of the present study and the limited availability of resources and manpower, the researcher chose not to make use of random sampling. For this reason purposive sampling, a non-probability sampling procedure, was carried out (Downie & Heath, 1974).
### Table 7

**Age composition of Sample 1 and Sample 2**

<table>
<thead>
<tr>
<th>AGES IN TWO-MONTH INTERVALS</th>
<th>SAMPLE 1 (%)</th>
<th>SAMPLE 2 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-61</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>62-63</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>64-65</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>66-67</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>68-69</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>70-71</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>72-73</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>74-75</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>76-77</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>78-79</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>80-81</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>82-83</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

**Measure**

The revised pictures were employed for the quantitative component of the study. The instructions utilized for the Xhosa and Afrikaans sample followed the guidelines suggested by Allan (1992 & 1988 respectively). The responses given to the 2 large revised pictures and the 20 small revised pictures, were scored according to the guidelines given in the manual (Griffiths, 1970). Prior to testing it was necessary that a number of letters and questionnaires be completed by both the participants’ teachers and parents/guardians. These included:

**Biographical Questionnaire**

A biographical questionnaire (See Appendix D) to obtain the necessary information regarding SES, birth and developmental history was included.
In the present study, parents were asked to indicate the highest occupation level attained by the father (or mother/guardian in the absence of the father) of the child, and values were assigned to the various levels as suggested by Riordan (1978). The values assigned to the various occupation levels are presented in Appendix E.

The second variable included in Riordan’s (1978) SES was the education of the father (or mother/guardian in the absence of the father). In the present study, the parents were asked to indicate the highest educational level attained by the father, or guardian of the child, and values were assigned to the various levels as suggested by Riordan (1978). The values assigned to the various educational levels are presented in Appendix E.

The total score derived from the sum of the numerical values assigned to the occupation and the education of the father, provided the socio-economic index for each subject. Based on this index, they were classified as being of upper, middle, or lower SES, using Riordan’s (1978) cut-off points for the various culture classification groups. These are presented in Appendix E.

Research Procedure

Stage 1

To obtain the subject pool, contact was made with a number of pre-schools. The sample was identified and letters were sent to the respective principals/teachers and parents. These included:

Letters to principals/teachers for testing permission
The researcher explained the purpose of the study to the principals of the utilized schools by means of a written letter (See Appendix B).

Letters to parents for testing permission
Letters were sent to parents/guardians informing them about the purpose of the study. Accompanying the letters were consent forms which gave the researcher permission to assess the child and to use the results for research purposes (See Appendix C).

Stage 2

A test date was arranged with the respective pre-schools. The examiners involved in
the testing were trained so that a consistent administrative and scoring procedure was followed. The examiners were trained by the same Griffiths user and thus were approximately equally experienced in administering the revised pictures.

Stage 3

This stage involved the administration of the revised set of pictures to a representative sample of the population of children, between 60 and 83 months of age. Administration of the large revised pictures and the 20 small revised pictures took place in an environment conducive to testing. The research members involved in the testing phase were all given stipulated guidelines to follow in the administration of the pictures in an attempt to eliminate any inconsistencies in this phase of the study. Jensen (1980) suggested that an examiner, who is fluent in the subject's home language and its particular local expression, should test the subjects. Weisleider and Hodgson (1989) proposed that the stimuli of both speech and language discrimination tests should be suitable for the linguistic background of the subjects and should also be administered in their home language. The children in this study were assessed in their home language (English, Afrikaans or Xhosa). See Appendix F, for the Xhosa and Afrikaans translations of the English instructions in administrating the large and small pictures of the Hearing and Speech Scale (Allan, 1988; Griffiths, 1970).

Stage 4

This stage involved the collection of data. The responses received from the 20 small pictures and the large picture were scored according to stipulated guidelines provided by Griffiths (1970). The large pictures were scored in four ways. The first measurement involves the child naming an age-appropriate number of stimuli in the picture. The second measurement involves the child using descriptive words (adjectives and adverbs); thirdly using descriptive sentences of 6+ syllables; and finally the child's use of personal and possessive pronouns. The data were then captured in a spreadsheet computer package.

Stage 5

This stage involved the statistical analysis of the data.
For the large revised pictures.
Descriptive statistics for the four cultural groups (Black, Coloured, Indian & White) of both Sample 1 and 2, were provided separately in terms of frequency counts (\(f\)), means (X's) and percentages (%). This was performed for:
* each 2-month age interval (60-61 to 82-83 months);
* each SES group (upper, middle & lower);
* each language group (English, Afrikaans, Xhosa); and
* both gender groups (male & female).

For the 20 small revised pictures.
Descriptive statistics for the four cultural groups (Black, Coloured, Indian & White) of both Sample 1 and 2, were provided separately in terms of frequency counts (\(f\)), percentages (%) and means (X's). This was performed for:
* each 2-month age interval (60-61 to 82-83 months);
* each SES group (upper, middle & lower);
* each language group (English, Afrikaans, Xhosa); and
* both gender groups (male & female).

Every child's response was recorded as to whether he/she passed or failed each of the 20 small revised pictures. This then allowed for the frequency and percentage of passes and fails for each picture to be calculated.

As mentioned in Chapter 2, for each 2 month age-interval tested Griffiths (1960) proposed an expected number of correct responses for the 20 small pictures and the original large picture utilized for the Hearing and Speech Scale. (See Table 1). The proposed number of correct responses suggested by Griffiths (1960), were utilized as a constant factor against which the responses gathered from both large revised pictures and the 20 small pictures, for each cultural group, were described.

Stage 6
This stage involved the interpretation of the results and a discussion thereof which are provided in Chapter 5.

Stage 7
This stage involved a critical evaluation of the study, which is provided in Chapter 6.
CHAPTER FIVE
RESULTS AND DISCUSSION

The empirical findings of the second aim of this study are presented below. As the present study is both exploratory and descriptive in nature, the results and discussion are presented separately for each cultural group (White, Coloured, Black and Indian) and follow the following pattern:

Mean (average) number of small pictures correctly identified;
Mean (average) number of identified stimuli in large revised picture;
Mean (average) number of identified descriptive words in large revised picture;
Mean (average) number of identified descriptive sentences in the large revised picture; and
Mean (average) number of identified pronouns in the large revised picture;

Furthermore, each cultural group is individually described in terms of the children’s performance on each of the above categories for each:
Two-month age interval (60 to 83 months);
Socio-economic group;
Language group; and
Gender group.

DESCRIPTION OF THE WHITE CHILDREN’S PERFORMANCE

Table 8 indicates the means (X) and standard deviations (SD's) of the correctly identified small revised pictures, the stimuli identified, descriptive words, descriptive sentences and pronouns elicited from the large revised South African (SA) and United Kingdom (UK) pictures by the White pre-schoolers of sample 1 and 2.

Seventy-one months was the mean age of the White pre-schoolers in both sample 1 and 2. For both samples the mean number of correctly identified small pictures was 18. This was in accordance to Griffith's (1960) proposed scoring criteria for children of this age. Furthermore, with reference to Griffith's (1960) proposed criteria, the White pre-schoolers of both samples identified fewer descriptive words and pronouns than was suggested. However, they identified the suggested number of descriptive sentences and a far greater
number of stimuli from the revised large SA and UK pictures.

Table 8
Means and Standard deviations of correctly identified small and large pictures by the White pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>GRIFFITHS (1960) CRITERIA (FOR 71 MONTHS)</th>
<th>SAMPLE 1 (SA PICTURES)</th>
<th>SAMPLE 2 (UK PICTURES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X SD</td>
<td>X SD</td>
</tr>
<tr>
<td>Small pictures</td>
<td>18</td>
<td>18 1.53</td>
<td>18 1.52</td>
</tr>
<tr>
<td>Large picture:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stimuli identified</td>
<td>12+</td>
<td>19 8.33</td>
<td>18 6.14</td>
</tr>
<tr>
<td>descriptive words</td>
<td>6+</td>
<td>3 2.79</td>
<td>2 2.41</td>
</tr>
<tr>
<td>descriptive sentences</td>
<td>3</td>
<td>3 3.72</td>
<td>3 3.80</td>
</tr>
<tr>
<td>pronouns</td>
<td>6+</td>
<td>1 2.13</td>
<td>1 2.44</td>
</tr>
</tbody>
</table>

Table 9 indicates the frequency and percentage of the White pre-schoolers from both samples who provided the correct response to each of the 20 small revised pictures.

Regarding the 20 small revised pictures, pictures 2 (shoe), 4 (train) and 10 (bed) were correctly identified by all White pre-schoolers in sample 1 and 2, while pictures 18 (shop) and 19 (wheel-barrow) were amongst the two most incorrectly named for both samples. Tentative explanations for pictures 18 and 19 being the least correctly identified, are put forward. One such reason could be in accordance with Griffith's (1960) standardizing and equalizing of the original Scales. That is, the number and percentage of children passing each item declined steadily, hence two of the last three pictures were incorrectly identified most often. This decline in the percentage of children passing the successive items in every scale, indicated that items in every scale are arranged in order of difficulty (Griffiths, 1960, 1970).

A second reason for pictures 18 and 19 being the least correctly identified, could be due to the pictorial representation of the stimuli. The possible graphics and dimensions utilized in these pictures could have influenced the childrens' recognition of the stimuli. Thirdly, subject characteristics (SES, cultural group, language, etc.) could have influenced their performance (Biesheuvel, 1943, 1949). Extensive research completed in South Africa on the Griffiths Scales, has documented the effects of subject variables on individuals test

Table 9
Frequency and percentages of White pre-schoolers with correct responses to the 20 small pictures

<table>
<thead>
<tr>
<th>PICTURE NUMBER</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>65</td>
<td>100</td>
<td>65</td>
<td>98</td>
</tr>
<tr>
<td>2</td>
<td>65</td>
<td>100</td>
<td>66</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>64</td>
<td>98</td>
<td>65</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>65</td>
<td>100</td>
<td>66</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>77</td>
<td>50</td>
<td>76</td>
</tr>
<tr>
<td>6</td>
<td>64</td>
<td>98</td>
<td>65</td>
<td>98</td>
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<tr>
<td>7</td>
<td>63</td>
<td>97</td>
<td>64</td>
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<td>8</td>
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<tr>
<td>9</td>
<td>64</td>
<td>98</td>
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<td>98</td>
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<td>10</td>
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<td>11</td>
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<td>86</td>
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<td>14</td>
<td>64</td>
<td>98</td>
<td>65</td>
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<tr>
<td>15</td>
<td>46</td>
<td>71</td>
<td>47</td>
<td>71</td>
</tr>
<tr>
<td>16</td>
<td>45</td>
<td>69</td>
<td>47</td>
<td>71</td>
</tr>
<tr>
<td>17</td>
<td>60</td>
<td>92</td>
<td>61</td>
<td>92</td>
</tr>
<tr>
<td>18</td>
<td>43</td>
<td>66</td>
<td>43</td>
<td>65</td>
</tr>
<tr>
<td>19</td>
<td>42</td>
<td>65</td>
<td>43</td>
<td>65</td>
</tr>
<tr>
<td>20</td>
<td>60</td>
<td>92</td>
<td>62</td>
<td>95</td>
</tr>
</tbody>
</table>

Percentages in the table cells have been rounded off to the nearest percentage

Table 10 indicates the mean number of small pictures correctly identified; identified stimuli, the elicited descriptive words, descriptive sentences and pronouns from the large revised SA and UK pictures, for each 2-month age group for the White pre-schoolers.
Table 10
The responses given to the small and large revised SA and UK pictures for each two-month age interval for the White pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Pronouns</td>
</tr>
<tr>
<td>Two-month interval</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-61</td>
<td>17</td>
<td>20</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>62-63</td>
<td>15</td>
<td>12</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>64-65</td>
<td>17</td>
<td>19</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>66-67</td>
<td>19</td>
<td>22</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>68-69</td>
<td>18</td>
<td>18</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>70-71</td>
<td>19</td>
<td>18</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>72-73</td>
<td>19</td>
<td>18</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>74-75</td>
<td>19</td>
<td>17</td>
<td>2</td>
<td>2</td>
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<tr>
<td>76-77</td>
<td>19</td>
<td>20</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>78-79</td>
<td>18</td>
<td>20</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>80-81</td>
<td>18</td>
<td>26</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>82-83</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Regarding the White pre-schoolers responses per each two-month age interval on the small revised pictures, it was evident that the children of the older age range correctly identified more than their younger counterparts. This trend was noted for the children from both sample groups.

Like Piaget, Griffiths (1960) differentiated between the comprehension (understanding, passive speech) of what is said around a child, and the child's ability to express (active speech) him/herself verbally. In their writings, Griffiths (1960) and Piaget (1952a, 1952b, 1959) refer to several significant stages of language development. One such stage is known as the True Communication stage, in which the pre-schoolers of both samples fall. At this stage the young child's "mastery of expression" involves an ability to: tell stories, share ideas, and discuss alternatives; to show increasing use of varied grammar; to engage in spontaneous self-correction of grammatical errors; to stabilize the articulation of
Regarding the White pre-schoolers of both samples, their use of various parts of speech (descriptive words, possessive and personal pronouns) was below the expected number quantity (Griffiths, 1960).

Griffiths (1960) made a distinction between a child's verbalizations while freely commencing upon his/her drawing or other occupation (collective monologue), and that when conversing with other children (or individuals). In the former, it follows that the speech of the child is secondary to the main activity, into which most of their energy is flowing. We therefore, cannot regard this type of conversation as typical of all their speech. It would be incorrect to assume that a child's collective monologue, whilst engaged upon intensely interesting individual occupations, equates the conversation the same child will share whilst anxious to convey their meanings in the presented large picture of the Hearing and Speech Scale of the Griffiths Scales. One such reason for the White pre-schoolers' mean number of descriptive words and pronouns being below Griffiths (1960) proposed number, could be related to such issues.

Regarding the large SA and UK pictures, the general pattern of elicited responses indicates that the pre-schoolers falling in the higher age ranges, identify a higher mean number of stimuli, descriptive words, and descriptive sentences. The older children from sample 1 identified a higher mean number of personal and possessive pronouns than their younger counterparts, this however was not evident with the children of sample 2. The gradual increase in language acquisition and expression is in accordance with numerous theories on language development (Griffiths, 1960; McCarthy, 1930; Mussen, et. al., 1984; Oskaar, 1983; Piaget, 1952a). Bjorklund (1989) and Whitehurst (1982) state that a child's expressive language at 60 months and above should include complex syntax, an increasing vocabulary and better grammar than a younger child who only has some complex sentences and still has grammatical errors (e.g., "goed").

Table 11 indicates the responses provided by the three socio-economic groupings of the White pre-schoolers to the revised small and large SA and UK pictures.
Table 11
The responses given to the small and large revised SA and UK pictures for each socio-economic group for the White pre-schoolers

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAMPLE 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
</tr>
<tr>
<td>U</td>
<td>18</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>M</td>
<td>18</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>L</td>
<td>18</td>
<td>21</td>
<td>4</td>
</tr>
</tbody>
</table>

U = upper SES; M = middle SES; L = lower SES

The findings regarding socio-economic groups and their responses to the revised small and large SA pictures, dispute those of Allan (1988, 1992) and Hanson and Aldridge Smith (1987) who found significant SES differences on the Hearing and Speech Scale of the Griffiths Scales. Furthermore, Mc Carthy (1930) found the pre-school children's mean length of verbalized responses to increase, relative to their parents SES.

In the present study all three socio-economic groups from both samples correctly named the same mean number (X=18) of small revised pictures. Regarding the large revised SA and UK pictures, the lower socio-economic group scored slightly better than the other two groups regarding the identified stimuli, elicited descriptive words and pronouns. Unlike the children from sample 1 who elicited the same mean number of descriptive sentences from the large SA picture, children from the lower SES of sample 2 elicited the highest mean number of descriptive sentences. Huntley (1996) in the revision of the birth to two years Griffiths Scales, found no relationship between social class and scores on the Griffiths Scales.

Table 12 indicates the English- and Afrikaans- speaking White pre-schoolers' responses to the revised small and large SA and UK pictures. The English-speaking pre-schoolers of both samples correctly identified the highest mean number of small pictures.
Table 12
The responses given to the small and large revised SA and UK pictures for the two language groups for the White pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SAMPLE 1</th>
<th></th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>SMALL PICTURES</td>
<td>LARGE SA PICTURE</td>
<td>SMALL PICTURES</td>
<td>LARGE UK PICTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
</tr>
<tr>
<td>E</td>
<td>18</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>A</td>
<td>17</td>
<td>19</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>17</td>
</tr>
</tbody>
</table>

E = English; A = Afrikaans

The present study indicated that the English-speaking White pre-schoolers from both sample 1 and 2, performed slightly better than the Afrikaans-speaking White children, regarding the correctly identified small pictures, as well as the number of identified stimuli and elicited descriptive words in the large SA and UK pictures.

Regarding the large revised SA and UK pictures, the English and Afrikaans pre-schoolers from sample 1 elicited an identical mean score regarding the number of descriptive sentences (X=3) and pronouns (X=1). English-speaking children of sample 2 also elicited the highest mean number of descriptive sentences (X=4) from the large revised UK picture. An equal mean number of elicited pronouns (X=1) was obtained from the children of both language groups from both sample 1 and sample 2.

While Allan (1988) found that the performance of English- and Afrikaans-speaking White 5-year-old South African children, did not differ significantly on the Griffiths Hearing and Speech Scale (Scale C), Allan (1992) found that the performance of White English-speaking children was significantly better than their Afrikaans-speaking counterparts with respect to Scale C. Allan's (1988) finding was consistent with that of Verster and Prinsloo (1988).
Table 13 indicates the responses of the White male and female pre-school children to the revised small and large SA and UK pictures. Both groups of sample 1 and 2, obtained the same mean scores for the number of correctly identified small picture stimuli (X=18).

Table 13
The responses given to the small and large revised SA pictures for both gender groups for the White pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SAMPLE 1</th>
<th>SAMPLE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMALL PICTURES</td>
<td>LARGE SA PICTURE</td>
</tr>
<tr>
<td>Gen-</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
</tr>
<tr>
<td>der</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>M</td>
<td>18</td>
<td>19</td>
</tr>
</tbody>
</table>

F = Females;  M = Males

Regarding the large revised SA and UK pictures, both gender groups elicited the same mean number of descriptive sentences (X=3) and pronouns (X=1). Both gender groups of sample 1 also identified the same mean number of stimuli (X=19) and descriptive words (X=3) from the large revised SA picture. These findings are in accordance with previous research completed on the Griffiths (Heimes, 1983; Allan, 1988, 1992). Females' of sample 2 obtained a higher mean number than males with regards to the elicited stimuli from the large UK picture, while males obtained a higher mean number of elicited descriptive words. Sampson's (1962) longitudinal study of linguistic development found little difference between the gender groups with regards to the children's verbal vocabulary, composition skill and grammatical utilization at 5 years of age.

DESCRIPTION OF THE BLACK CHILDREN'S PERFORMANCE

Table 14 indicates the means (X) and standard deviations (SD's) of the correctly identified small revised pictures, the stimuli identified, descriptive words, descriptive sentences and pronouns elicited from the large revised SA and UK pictures by the Black pre-schoolers of sample 1 and 2.
Table 14
Means and Standard deviations of correctly identified small and large SA and UK pictures by the Black pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>GRIFFITHS (1960) CRITERIA (FOR 71 MONTHS)</th>
<th>SAMPLE 1 (SA PICTURES)</th>
<th>SAMPLE 2 (UK PICTURES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X          SD</td>
<td>X          SD</td>
</tr>
<tr>
<td>Small pictures</td>
<td>18</td>
<td>15          2.65</td>
<td>15          2.64</td>
</tr>
<tr>
<td>Large picture:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimuli identified</td>
<td>12+</td>
<td>16          5.79</td>
<td>15          5.99</td>
</tr>
<tr>
<td>Descriptive words</td>
<td>6+</td>
<td>1           1.67</td>
<td>2           2.22</td>
</tr>
<tr>
<td>Descriptive sentences</td>
<td>3</td>
<td>2           2.30</td>
<td>2           3.25</td>
</tr>
<tr>
<td>Pronouns</td>
<td>6+</td>
<td>0           0.86</td>
<td>0           1.05</td>
</tr>
</tbody>
</table>

Sixty-nine and 70 months were the mean ages of the Black pre-schoolers in sample 1 and 2 respectively. The mean number of correctly identified small pictures was below Griffith's (1960) suggested scoring criteria for children of both samples in this age group. With reference to Griffith's (1960) criteria, the Black pre-schoolers of both samples elicited fewer descriptive words, descriptive sentences and pronouns than was proposed. However, all the Black pre-schoolers identified above Griffith's (1960) proposed number of stimuli in the large revised SA and UK pictures.

Table 15 indicates the frequency and percentage of the Black pre-schoolers from both samples, who provided the correct response to each of the 20 small revised pictures.
Table 15
Frequency and percentages of Black children with correct responses to the 20 small pictures

<table>
<thead>
<tr>
<th>PICTURE NUMBER</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>64</td>
<td>100</td>
<td>54</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>64</td>
<td>100</td>
<td>54</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>62</td>
<td>97</td>
<td>53</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>58</td>
<td>91</td>
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<tr>
<td>5</td>
<td>35</td>
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<td>46</td>
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<tr>
<td>6</td>
<td>62</td>
<td>97</td>
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<td>100</td>
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<tr>
<td>7</td>
<td>55</td>
<td>86</td>
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<td>8</td>
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<td>10</td>
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<td>42</td>
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<tr>
<td>12</td>
<td>54</td>
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<td>13</td>
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<td>33</td>
<td>61</td>
</tr>
<tr>
<td>18</td>
<td>14</td>
<td>22</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>19</td>
<td>25</td>
<td>39</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>33</td>
<td>22</td>
<td>41</td>
</tr>
</tbody>
</table>

Percentages in the table cells have been rounded off to the nearest percentage

Regarding the 20 small revised pictures, Table 15 indicates that the pictures 1 (ball) and 2 (shoe) were correctly identified by all Black pre-schoolers of sample 1 and sample 2. A closer look at the individual's responses of both samples reveals that picture 18 (shop) was the most incorrectly named, followed by picture 20 (owl) for sample 1 and pictures 19 (wheel-barrow) and 20 (owl) for sample 2. As was noted for the White and Coloured pre-schoolers of both samples, the shop (picture 18) was recognized to be one of the two most incorrectly identified pictures. Furthermore, an "owl" for Black people is a symbol of bad luck. One must always take into consideration that the interpretations of utterances by a child (and adult) are based on the background of their experience (Oskaar, 1975). Hence, a
tentative explanation could be that children from the Black group could have possibly known the picture, but chose not to name it, for fear of the bad omen.

The results shown in Table 16 indicate the mean number of small pictures correctly identified, stimuli identified, descriptive words, descriptive sentences and pronouns elicited from the large revised SA and UK pictures, for each two-month age group for the Black pre-schoolers of sample 1 and 2.

Table 16

The responses given to the small and large revised SA and UK pictures for each two-month age interval for the Black pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMALL PICTURES</td>
<td>LARGE SA PICTURE</td>
<td>SMALL PICTURES</td>
<td>LARGE UK PICTURE</td>
</tr>
<tr>
<td>Two-month interval</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Pronouns</td>
</tr>
<tr>
<td>60-61</td>
<td>16</td>
<td>19</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>62-63</td>
<td>14</td>
<td>14</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>64-65</td>
<td>15</td>
<td>15</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>66-67</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>68-69</td>
<td>13</td>
<td>15</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>70-71</td>
<td>15</td>
<td>15</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>72-73</td>
<td>15</td>
<td>14</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>74-75</td>
<td>17</td>
<td>18</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>76-77</td>
<td>16</td>
<td>14</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>78-79</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>80-81</td>
<td>17</td>
<td>20</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>82-83</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The highest mean number of correctly identified small revised pictures occurred amongst the older children in both samples. Regarding the large revised SA and UK pictures, and the two-month age intervals of the Black pre-schoolers, a diverse array of the
highest and lowest mean numbers of identified stimuli and elicited descriptive words, descriptive sentences and pronouns was obtained.

Table 17 indicates the responses provided by the three socio-economic groupings of the Black pre-schoolers from both samples, to the revised small and large SA and UK pictures.

Table 17
The responses given to the small and large revised SA and UK pictures for each socio-economic group for the Black pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Pronouns</td>
</tr>
<tr>
<td>U</td>
<td>15</td>
<td>17</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>M</td>
<td>15</td>
<td>15</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>L</td>
<td>15</td>
<td>15</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

U = upper SES; M = middle SES; L = lower SES

As evident in Table 17, none of the three socio-economic groups elicited the highest mean number for all five of the possible scoring categories for the revised small and large pictures. Hence, a diverse array of results was obtained. This finding is in accordance with Mothuloe (1990) who found no significant differences amongst the 5 to 7 year-old South African Black Setswana-speaking children from all three socio-economic groups.

Table 18 indicates the Xhosa-, English- and Afrikaans- speaking Black pre-schoolers' responses to the revised small and large SA and UK pictures.
Table 18
The responses given to the small and large revised SA and UK pictures for the language groups for the Black pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Language</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
</tr>
<tr>
<td>X</td>
<td>Xhosa</td>
<td>15 16 1 1 0</td>
<td>15</td>
<td>15 0 2 2 0</td>
</tr>
<tr>
<td>E</td>
<td>English</td>
<td>17 15 2 1 0</td>
<td>17</td>
<td>14 1 1 0</td>
</tr>
<tr>
<td>A</td>
<td>Afrikaans</td>
<td>13 12 0 5 2</td>
<td>13</td>
<td>12 1 3 3</td>
</tr>
</tbody>
</table>

X = Xhosa; E = English; A = Afrikaans

As is evident in Table 18, English-speaking Black pre-schoolers from both samples correctly identified the highest mean number of stimuli from the small pictures. Regarding the large revised SA and UK pictures, a diverse array of the highest mean numbers for the various scoring categories, is evident amongst the three language groups. In the present study the small number of Black English- and Afrikaans-speaking pre-schoolers could have impacted on the spread of obtained mean scores. Hence, this must be considered in the interpretation of the results. Afrikaans is the home language of only a small percentage of Black groups in South Africa, and the performance differences between English- and Afrikaans-speaking groups is not important for them (Allan, 1992).

Table 19 indicates the responses of Black male and female pre-school children from sample 1 and 2 to the revised small and large SA and UK pictures.
Table 19
The responses given to the small and large revised SA and UK pictures for both gender groups for the Black pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAMPLE 1</td>
<td>SAMPLE 2</td>
<td>SAMPLE 1</td>
<td>SAMPLE 2</td>
</tr>
<tr>
<td>Gender</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Pronouns</td>
</tr>
<tr>
<td>F</td>
<td>15</td>
<td>15</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>M</td>
<td>15</td>
<td>15</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

F = Females; M = Males

As is evident in Table 19, males and females from both samples obtained the same mean number of correctly identified small revised pictures (X=15). This finding is in accordance with both the White and Coloured pre-schoolers of sample 1. Regarding the large revised SA picture, females obtained the highest mean number of identified stimuli (X=16), while males elicited the highest mean number of descriptive words (X=2), descriptive sentences (X=2) and pronouns (X=1). The differences between the gender groups was slight. Mothuloe (1990) found that his sample of 45 Setswana-speaking boys and girls did not differ on the results of the Hearing and Speech Scale of the Griffiths Scales.

Regarding the large revised UK picture. Males obtained the highest mean number of identified stimuli (X=16) and elicited descriptive words (X=2). There was no difference in the mean number of elicited descriptive sentences (X=2) and pronouns (X=0) from the Black pre-schoolers of sample 2.
DESCRIPTION OF THE COLOURED CHILDREN'S PERFORMANCE

Table 20 indicates the means (X) and standard deviations (SD's) of the correctly identified small revised pictures, the elicited stimuli, descriptive words, descriptive sentences and pronouns from the large revised SA and UK pictures by the Coloured pre-schoolers of sample 1 and 2.

Table 20
Means and Standard deviations of correctly identified small and large pictures by the Coloured pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>GRiffiths (1960) Criteria (for 71 months)</th>
<th>Sample 1 (SA Pictures)</th>
<th>Sample 2 (UK Pictures)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X  SD</td>
<td>X</td>
</tr>
<tr>
<td>Small pictures</td>
<td>18</td>
<td>17 1.94</td>
<td>18</td>
</tr>
<tr>
<td>Large picture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stimuli identified</td>
<td>12+</td>
<td>19 6.76</td>
<td>19</td>
</tr>
<tr>
<td>descriptive words</td>
<td>6+</td>
<td>2 2.55</td>
<td>3</td>
</tr>
<tr>
<td>descriptive sentences</td>
<td>3</td>
<td>2 4.30</td>
<td>3</td>
</tr>
<tr>
<td>pronouns</td>
<td>6+</td>
<td>1 3.22</td>
<td>0</td>
</tr>
</tbody>
</table>

Seventy-one and 72 months were the mean ages of the Coloured pre-schoolers in sample 1 and sample 2 respectively. The mean number (X=17) of correctly identified small pictures by the children of sample 1, was below Griffith's (1960) proposed criteria for children of this age. The mean number (X=18) of correctly identified small pictures by the children of sample 2, was in accordance with Griffith's (1960) proposed scoring criteria for children of this age. With reference to Griffith's (1960) criteria, the Coloured pre-schoolers of both samples identified fewer descriptive words and pronouns than was suggested. The Coloured pre-schoolers of sample 1, unlike the children from sample 2, identified fewer descriptive sentences than was suggested by Griffiths (1960). Children in both samples identified a far greater number of stimuli in the large revised SA and UK pictures than was proposed.
Table 21 indicates the frequency and percentage of the Coloured pre-schoolers of both samples, who provided the correct response to each of the 20 small revised pictures.

Table 21
Frequency and percentages of Coloured children with correct responses to the 20 small pictures

<table>
<thead>
<tr>
<th>PICTURE NUMBER</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>46</td>
<td>98</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>47</td>
<td>100</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>46</td>
<td>98</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>47</td>
<td>100</td>
<td>33</td>
<td>97</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
<td>70</td>
<td>30</td>
<td>88</td>
</tr>
<tr>
<td>6</td>
<td>47</td>
<td>100</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>45</td>
<td>96</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>47</td>
<td>100</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>46</td>
<td>98</td>
<td>32</td>
<td>94</td>
</tr>
<tr>
<td>10</td>
<td>47</td>
<td>100</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>37</td>
<td>79</td>
<td>30</td>
<td>88</td>
</tr>
<tr>
<td>12</td>
<td>47</td>
<td>100</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>13</td>
<td>36</td>
<td>77</td>
<td>29</td>
<td>85</td>
</tr>
<tr>
<td>14</td>
<td>42</td>
<td>89</td>
<td>28</td>
<td>82</td>
</tr>
<tr>
<td>15</td>
<td>41</td>
<td>87</td>
<td>30</td>
<td>88</td>
</tr>
<tr>
<td>16</td>
<td>39</td>
<td>83</td>
<td>30</td>
<td>88</td>
</tr>
<tr>
<td>17</td>
<td>31</td>
<td>66</td>
<td>28</td>
<td>82</td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>40</td>
<td>15</td>
<td>44</td>
</tr>
<tr>
<td>19</td>
<td>22</td>
<td>47</td>
<td>19</td>
<td>56</td>
</tr>
<tr>
<td>20</td>
<td>25</td>
<td>53</td>
<td>23</td>
<td>68</td>
</tr>
</tbody>
</table>

Percentages in the table cells have been rounded off to the nearest percentage

As seen in Table 21, pictures 2 (shoe), 6 (cap), 8 (horse), 10 (bed) and 12 (key) were identified correctly by all Coloured pre-schoolers of sample 1 and 2. A closer look at the individual's responses reveals that picture 18 (shop) was the most incorrectly named, followed by picture 19 (wheel-barrow) for both samples.
The results shown in Table 22 indicate the mean number of small pictures correctly identified; identified stimuli, elicited descriptive words, descriptive sentences and pronouns in the large revised SA and UK pictures, for each two-month age group for the Coloured preschoolers of sample 1 and 2.

Table 22
The responses given to the small and large revised SA and UK pictures for each two-month age interval for the Coloured pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-month interval</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
</tr>
<tr>
<td>60-61</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>62-63</td>
<td>19</td>
<td>19</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>64-65</td>
<td>17</td>
<td>15</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>66-67</td>
<td>15</td>
<td>15</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>68-69</td>
<td>15</td>
<td>19</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>70-71</td>
<td>17</td>
<td>20</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>72-73</td>
<td>17</td>
<td>17</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>74-75</td>
<td>18</td>
<td>19</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>76-77</td>
<td>19</td>
<td>17</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>78-79</td>
<td>17</td>
<td>21</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>80-81</td>
<td>18</td>
<td>23</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>82-83</td>
<td>19</td>
<td>38</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

A closer look at the responses from the enumerated age intervals of Table 22, indicates the that for both samples, the highest mean number of correctly identified small pictures occurred in several of the two-month age ranges.

Regarding the large SA picture, the 82-83 month range identified the highest mean number (X=38) of stimuli and elicited descriptive words (X=5). Children in the age range 64-
65 months elicited the highest mean number of descriptive sentences (X=6) pronouns (X=13). Regarding the large UK picture, children in the 74-75 month age-range indicated the highest mean score (X=29) for identified stimuli, elicited descriptive words (X=8) and descriptive sentences (X=9). The highest mean number of pronouns (X=1) elicited fell in a diverse array of two-month age ranges.

Overall, a diverse two-month age range was found when assessing which children from both samples correctly identified the highest mean number of small pictures. Regarding the large revised SA and UK pictures, the same trend was noted, a diverse array of the highest mean scores were obtained from the elicited descriptive words, descriptive sentences and pronouns from the Coloured pre-schoolers of sample 1 and 2.

Table 23 indicates the responses provided by the three socio-economic groupings of the Coloured pre-schoolers from both samples, to the revised SA and UK pictures.

Table 23
The responses given to the small and large revised SA and UK pictures for each socio-economic group for the Coloured pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SES</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
</tr>
<tr>
<td>U</td>
<td>18</td>
<td>23</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>M</td>
<td>17</td>
<td>18</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>L</td>
<td>16</td>
<td>18</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

U = upper SES; M = middle SES; L = lower SES

As evident in Table 23, eighteen was the highest mean number of stimuli identified from the small revised pictures for both sample 1 and 2. Coloured children from the lower socio-economic group of both samples scored slightly below the other two socio-economic groups’ mean number of correctly identified small revised pictures. Table 23 indicates a diverse array of the highest mean number of identified stimuli, elicited descriptive words,
Templin (1957) found that children from middle-class, well-educated families, generally scored higher on practical standard measures of linguistic ability - vocabulary, sentence structure, and articulation than those from families with parents who did not complete high school. One possible explanation for these differences may be the different types of speech used by mothers in these social-class groups. When considering patterns of verbal interaction, it was found that lower-class mothers typically used a restricted language code, talking to their children in short, simple, easily understood sentences that refer primarily to the here-and-now events. Middle-class mothers, on the other hand, use elaborated code in disciplining their children, teaching them moral standards, and communicating feelings and emotions. Although the simpler code may be more useful to very young children, the more complex codes used by middle- (and upper-) class mothers could enable older children to be more orientated toward abstractions (Mussen, et. al., 1984). In general, the findings of the Coloured pre-schoolers are consistent with those of previous research, namely, that there were differences in the performances of children from the different socio-economic groups (Hindley, 1960; Allan, 1998, 1992; Hanson and Aldridge Smith, 1987).

Table 24 indicates the English- and Afrikaans- speaking Coloured pre-schoolers’ responses to the revised small and large SA and UK pictures.

It is evident from Table 24 that for both samples the English-speaking Coloured children correctly identified the highest mean number of stimuli from the 20 small revised pictures. Regarding the large revised SA and UK pictures, the English-speaking pre-schoolers obtained the highest mean number of identified stimuli, elicited descriptive words, descriptive sentences, and pronouns. The same trend was noted with the White pre-schoolers of sample 2. Allan (1988, 1992) stated that previous research completed utilizing the Griffiths Scales with Coloured children 5 years of age, found no significant difference between the English- and Afrikaans-speaking children. However, Doyer and Owen (1980) and Verster and Prinsloo (1988) found significant differences in the ASB scores of English- and Afrikaans-speaking Coloured children.
Table 24
The responses given to the small and large revised SA and UK pictures for the two language groups for the Coloured pre-schoolers of sample 1 and 2

| AGE | SAMPLE 1 | | SAMPLE 2 | |
|-----|----------||----------|---|
|     | SMALL PICTURES | | LARGE SA PICTURE | | SMALL PICTURES | | LARGE UK PICTURE | |
|     | Mean no. of Stimuli identified | Mean no. of Stimuli | Mean no. of Descriptive words | Mean no. of Descriptive sentences | Mean no. of Stimuli identified | Mean no. of Stimuli | Mean no. of Descriptive words | Mean no. of Descriptive sentences | Mean no. of Pronouns | Mean no. of Pronouns | Mean no. of Pronouns | Mean no. of Pronouns |
| E   | 17        | 20        | 3        | 4        | 2        | 18        | 20        | 4        | 4        | 1        |        |        |
| A   | 16        | 18        | 1        | 1        | 0        | 17        | 17        | 1        | 1        | 0        |        |        |

E = English; A = Afrikaans

Table 25 indicates the responses of both gender groups of the Coloured pre-school children from sample 1 and 2 to the revised small and large SA and UK pictures.

As is evident in the Table 25 that both gender groups obtained the same mean number of correctly identified small pictures and identified stimuli from the large SA and UK pictures. Furthermore, both males and females of sample 1 obtained the same mean number of descriptive words elicited from the large revised SA picture. Males elicited a slightly higher mean number of descriptive sentences and pronouns from the large revised SA picture than did Coloured females. Allan (1988, 1992) found the subject variable of gender to have no significant effect on the test performance of the SA children. Females elicited a slightly higher mean number of descriptive sentences, descriptive words and pronouns than males from the large revised UK picture. This finding of female's verbal performance being above that of their male counterparts, is in agreement with Beery (1967), Kannegieter (1970) and Huntley (1994) and contradictory to Allan (1988, 1992) and the present study's findings of the Coloured pre-schoolers of sample 1. Hence, there is no clear support for the finding that females have superior verbal abilities.
Table 25
The responses given to the small and large revised SA and UK pictures for both gender groups for the Coloured pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
</tr>
<tr>
<td>F</td>
<td>17</td>
<td>19</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>M</td>
<td>17</td>
<td>19</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

F = Females; M = Males

DESCRIPTION OF THE INDIAN CHILDREN’S PERFORMANCE

Table 26 indicates the means (X) and standard deviations (SD’s) of the correctly identified small revised pictures, the stimuli identified, descriptive words, descriptive sentences and pronouns elicited from the large revised SA and UK pictures by the Indian pre-schoolers of sample 1 and 2.

Seventy-one and 72 months were the mean ages of the Indian pre-schoolers of sample 1 and 2 respectively. The mean number of correctly identified small pictures was 18. This was in accordance with Griffith's (1960) proposed scoring criteria. With reference to Griffith's (1960) criteria, the Indian pre-schoolers of both sample 1 and 2 identified fewer descriptive words and pronouns than was suggested. However, the Indian children identified the proposed number of descriptive sentences and a far greater number of stimuli. On a qualitative level, in comparison to the other three cultural groups, the Indian pre-schoolers identified the greatest mean number of stimuli (X=21) in the large revised SA and UK pictures.
Means and Standard deviations of correctly identified small and large SA and UK pictures by the Indian pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>GRIFFITHS (1960) CRITERIA (FOR 71 MONTHS)</th>
<th>SAMPLE 1 (SA PICTURES)</th>
<th>SAMPLE 2 (UK PICTURES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>SD</td>
</tr>
<tr>
<td>Small pictures</td>
<td>18</td>
<td>18</td>
<td>1.40</td>
</tr>
<tr>
<td>Large picture:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stimuli identified</td>
<td>12+</td>
<td>21</td>
<td>6.90</td>
</tr>
<tr>
<td>Descriptive words</td>
<td>6+</td>
<td>3</td>
<td>3.65</td>
</tr>
<tr>
<td>Descriptive sentences</td>
<td>3</td>
<td>2</td>
<td>3.54</td>
</tr>
<tr>
<td>Pronouns</td>
<td>6+</td>
<td>1</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Table 27 indicates the frequency and percentage of the Indian pre-schoolers of both samples who provided the correct response to each of the 20 small revised pictures.

Regarding the 20 small revised pictures, as is indicated in Table 27, pictures 2 (shoe), 4 (train), 6 (cap), 8 (horse), 9 (spoon), 10 (bed) and 12 (key) were identified correctly by all Indian pre-schoolers of sample 1 and 2. A closer look at the children's responses from both samples, reveals that picture 18 (shop) was the most incorrectly named, followed by picture 19 (wheel-barrow). The two pictures (18 & 19) were also the least correctly identified by the White, Coloured and Indian pre-schoolers of sample 1, as well as the White, Coloured and Black pre-schoolers of sample 2.
Table 27
Frequency and percentages of Indian children with correct responses to the 20 small pictures

<table>
<thead>
<tr>
<th>PICTURE NUMBER</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>96</td>
<td>25</td>
<td>96</td>
</tr>
<tr>
<td>2</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
<td>100</td>
<td>25</td>
<td>96</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>26</td>
<td>93</td>
<td>24</td>
<td>92</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>27</td>
<td>96</td>
<td>25</td>
<td>96</td>
</tr>
<tr>
<td>8</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>11</td>
<td>24</td>
<td>86</td>
<td>23</td>
<td>88</td>
</tr>
<tr>
<td>12</td>
<td>28</td>
<td>100</td>
<td>26</td>
<td>100</td>
</tr>
<tr>
<td>13</td>
<td>27</td>
<td>97</td>
<td>24</td>
<td>92</td>
</tr>
<tr>
<td>14</td>
<td>27</td>
<td>97</td>
<td>25</td>
<td>96</td>
</tr>
<tr>
<td>15</td>
<td>24</td>
<td>86</td>
<td>23</td>
<td>88</td>
</tr>
<tr>
<td>16</td>
<td>25</td>
<td>89</td>
<td>23</td>
<td>88</td>
</tr>
<tr>
<td>17</td>
<td>27</td>
<td>96</td>
<td>25</td>
<td>96</td>
</tr>
<tr>
<td>18</td>
<td>12</td>
<td>43</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>19</td>
<td>13</td>
<td>46</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>71</td>
<td>19</td>
<td>73</td>
</tr>
</tbody>
</table>

Percentages in the table cells have been rounded off to the nearest percentage

The results shown in Table 28 indicate the mean number of small pictures correctly identified, stimuli identified, elicited descriptive words, descriptive sentences and pronouns from the large revised SA and UK pictures, for each two-month age group for the Indian preschoolers of both sample 1 and 2.
Table 28
The responses given to the small and large revised SA and UK pictures for each two-month age interval for the Indian pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-month</td>
<td>Mean no. of</td>
<td>Mean no. of</td>
<td>Mean no.</td>
<td>Mean no. of</td>
</tr>
<tr>
<td>interval</td>
<td>Stimuli</td>
<td>Descriptive</td>
<td>Pronouns</td>
<td>Stimuli</td>
</tr>
<tr>
<td>60-61</td>
<td>19</td>
<td>24</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>62-63</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>64-65</td>
<td>18</td>
<td>18</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>66-67</td>
<td>19</td>
<td>18</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>68-69</td>
<td>19</td>
<td>28</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>70-71</td>
<td>18</td>
<td>17</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>72-73</td>
<td>18</td>
<td>16</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>74-75</td>
<td>17</td>
<td>21</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>76-77</td>
<td>18</td>
<td>26</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>78-79</td>
<td>18</td>
<td>23</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>80-81</td>
<td>18</td>
<td>29</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>82-83</td>
<td>17</td>
<td>31</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

Regarding the small revised pictures the Indian pre-schoolers from both samples pictures indicated that the highest mean number of correctly identified pictures was exhibited by children in the younger two-month age intervals.

Regarding the large SA and UK pictures, the Indian pre-schoolers from each two-month age interval, indicated a diverse array of the highest and lowest mean number of elicited descriptive words, descriptive sentences and pronouns. The range of elicited descriptive words and sentences from the Indian pre-schoolers of sample 1, were one-to-eleven, and one-to-ten respectively. The present study’s finding is contradictory to the study's completed by Templin (1957) and McCarthy (1930, 1954) who demonstrated the gradual growth of a child’s vocabulary and word classes (nouns, verbs, adjectives, adverbs, pronouns & conjunctions) in relation to age. Furthermore, Griffith's (1960) proposed criteria,
indicated that children falling within the older two-month age interval should be identifying and eliciting a greater mean number of stimuli, descriptive words, descriptive sentences, and pronouns than their younger counterparts. This proposed trend was not noted for a number of cultural groups of both sample 1 and sample 2.

Table 29 indicates the responses provided by the three socio-economic groupings of the Indian pre-schoolers from both samples, to the revised small and large SA and UK pictures.

Table 29
The responses given to the small and large revised SA and UK pictures for each socio-economic group for the Indian pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U 18</td>
<td>22</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>M 18</td>
<td>20</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>L 18</td>
<td>20</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

U = upper SES; M = middle SES; L = lower SES

There was no difference amongst the three socio-economic groups of sample 1 regarding the mean number (X=18) of correctly identified small revised pictures. Children from the upper socio-economic group of sample 2 correctly identified the highest mean number of stimuli (X=19) from the small revised pictures. Regarding the large revised SA and UK pictures, a diverse array of the highest mean number of identified stimuli, elicited descriptive words, descriptive sentences and pronouns, were reported by the Indian pre-schoolers, from all 3 socio-economic groups of both samples. Bhamjee (1991) found significant SES differences for South African Indian children with respect to the Hearing and Speech Scale of the Griffiths Scales. In the present study the small number of Indian pre-schoolers of sample 1 and 2 who belonged to the lower socio-economic group could have
impacted on the spread of obtained mean scores.

Table 30 indicates the English-, Afrikaans- and Xhosa- speaking Indian pre-schoolers’ responses to the revised small and large SA and UK pictures.

Table 30
The responses given to the small and large revised SA and UK pictures for the two language groups for the Indian pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SMALL PICTURES</th>
<th>LARGE SA PICTURE</th>
<th>SMALL PICTURES</th>
<th>LARGE UK PICTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
</tr>
<tr>
<td>E</td>
<td>18</td>
<td>21</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>18</td>
<td>16</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>X</td>
<td>16</td>
<td>24</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

E = English; A = Afrikaans; X = Xhosa

As evident in Table 30 for both samples the spread of the highest mean scores amongst the three language groups were diverse. This was true for both the small and large revised SA and UK pictures. The small number of Afrikaans- and Xhosa- speaking Indian pre-schoolers in the present study needs to be kept in mind when interpreting the results of the study.

Table 31 indicates the responses of both gender groups of the Indian pre-school children from sample 1 and 2, to the revised small and large SA and UK pictures.
Table 31
The responses given to the small and large revised SA and UK pictures for both gender groups for the Indian pre-schoolers of sample 1 and 2

<table>
<thead>
<tr>
<th>AGE</th>
<th>SAMPLE 1</th>
<th></th>
<th>SAMPLE 2</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMALL PICTURES</td>
<td>LARGE SA PICTURE</td>
<td>SMALL PICTURES</td>
<td>LARGE UK PICTURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Stimuli identified</td>
<td>Mean no. of Stimuli</td>
<td>Mean no. of Descriptive words</td>
<td>Mean no. of Descriptive sentences</td>
<td>Mean no. of Pronouns</td>
<td>Mean no. of Pronouns</td>
</tr>
<tr>
<td>F</td>
<td>18 22 3 2 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>18 20 3 3 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F = Females; M = Males

Table 31 indicates that both gender groups of sample 1 and 2 obtained the same mean number (X=18) of correctly identified small pictures, elicited descriptive words and pronouns from the large SA and UK pictures. While females from both samples obtained the highest mean number of identified stimuli from the large SA and UK pictures, males from sample 1 obtained the highest mean number of elicited descriptive sentences (X=3). Bhamjee (1991) found that Indian females performed better than males on the Hearing and Speech Scale of the Griffiths Scales.
CHAPTER SIX
CRITICAL EVALUATION AND CONCLUSION

The continual need for the psychometric properties of any assessment instrument to be investigated, needs to be reiterated. This includes the revision of the Griffiths Scales for the children of South Africa. With reference to sample 1 in the present study, only the White and Indian pre-schoolers correctly identified a mean number of small pictures above that which was proposed by Griffiths (1960). With reference to sample 2, all excepting the Black pre-schoolers correctly identified the proposed mean number of small pictures. The present researcher's findings are in contrast with those of Allan (1992) who found no major difference in the percentage of children from the different South African cultural groups who passed the small picture items. However, the present study is in accordance with Allan (1992) who found a lower percentage of Black children who passed item C.IV.5 (i.e., correctly naming 18 of the 20 small pictures), than did the children from the other South African cultural groups. The small pictures in the Hearing and Speech Scale are, however, utilized for children younger than the present samples age-range, and hence their performance will not necessarily be the same as that of the older children.

A recognized trend noted in the present study (established from the naming of the 20 small revised pictures), was that picture 18 (shop) was the most incorrectly identified picture, amongst all four cultural groups of sample 1 and sample 2. One could attribute this "trend" to the graphic-illustration of the stimuli, as it was experienced as problematic for the majority of the children in the present study. Furthermore, all the children from all four cultural groups, of both samples correctly identified picture 2 (shoe), while all the children from the White, Coloured and Indian groups of sample 1 correctly identified pictures 4 (train) and 10 (bed). Regarding sample 2, all the children from each cultural group, excepting the White group, were able to correctly identify picture 6 (cap). Picture 10 (bed) was correctly identified by all the children from the White, Coloured and Indian cultural groups of sample 2. The Black pre-schoolers of both samples were the only cultural group where the majority of children incorrectly identified picture 20 (owl). On a qualitative level, the small pictures 15 (cup) and 18 (shop) need to be assessed in terms of their illustrative adequacy.

Extracting Allan's (1992) findings on the performance of children aged between 60 and 83 months of age, on the Hearing and Speech Scale, it was indicated that at 60 months of age, 100% of White children from her sample were able to name 12 objects in the large
picture, while between 6% and 43% of children from the other three cultural groups identified less than the proposed 12 stimuli. Hence, Allan's (1992) findings contradict the findings of the present study, in which all children from sample 1 and sample 2 were able to identify 12 or more stimuli from the large revised SA and UK pictures. The question now raised is what’s the reason for this occurrence. A number of tentative explanations for these contradictory findings include the fact that the:

(I) revised pictures are more appealing to the eye and hence, invite discussion;
(ii) revised pictures contain stimuli which are contemporary in nature;
(iii) illustrations of the revised pictures are bold with rich colours and strong outlines, and are more symbolic than realistic in nature;
(iv) children of today are smarter than those in the original standardization sample;
(v) revised pictures contain more stimuli than the original pictures;
(vi) revised pictures contain stimuli which are more clearly drawn (distinct) and hence more easily recognized by the children;
(vii) revised SA picture contains stimuli which are universal and suitable for all cultural, language and socio-economic groups in South Africa; and
(viii) the revised UK picture contains stimuli which are universal and suitable for children from all cultural, language and socio-economic groups or the United Kingdom/Europe/ Australia.

Griffith's (1960) proposed number of descriptive words to be elicited from the large picture, appears to contradict both the present study and Allan's (1992) study. Allan (1992) found that less than 40% of children from all four cultural groups of her study were unable to elicit the proposed number of descriptive words. In the present study, all four cultural groups from both samples 1 and 2, elicited a mean number of descriptive words below Griffith's (1960) proposed criteria.

Regarding the large revised SA picture, while the White pre-schoolers were the only cultural group to elicit the mean number of descriptive sentences for the sampled age range, as proposed by Griffiths (1960), all four cultural groups identified a mean number of stimuli above the proposed criteria. Referring to sample 2, while the White and Coloured pre-schoolers were the only two cultural groups to elicit Griffith's (1960) proposed number of descriptive sentences, all four cultural groups identified a mean number of stimuli above the proposed criteria. Furthermore, all four cultural groups of both samples, elicited a mean number of descriptive words and personal and possessive pronouns below Griffith's (1960)
proposed criteria.

Regarding Griffith's (1960) proposed number of descriptive sentences for a child 76 months of age, Allan (1992) found that children from the Coloured group were the least likely cultural group to correctly elicit the proposed number of descriptive sentences, while children from the Indian cultural group were the most likely to do so. The findings of Allan (1992) are contradictory to the present researcher's findings, in that the White cultural group from sample 1, and both the White and Coloured cultural group of sample 2, elicited the highest mean number of descriptive sentences.

Griffiths (1960) reported that a child, in telling a story, makes no attempt to relate the several events into any particular order. Piaget and Inhelder (1969) refer to this as a form of juxtaposition. For example, in describing the large revised SA picture a child could say, "It's a boat sailing, there's a man in it, and they're running, and then they go and they swim in the water, and there's dolphins there and the dolphins eat fish and then the fish swim in the water." The child describing the picture does not mean to apply that the fish swim after they are eaten. The child simply uses "and then" as a conjunction, linking his/her phrases together as the ideas occur to him/her without any sense of the time significance of the phrases. The child merely wishes to tell about the boat, and the fish, and they swim, etc. The child makes no attempt to relate these things into their proper sequence. Piaget and Inhelder (1969) reported the use of "and then" to be common for children of approximately 5 years of age. On a qualitative level, this described language "pattern" was evident with a large number of pre-schoolers in sample 1 and 2. Relating Griffith's (1960) proposed scoring criteria for descriptive sentences to Piaget and Inhelder's (1969) view of a child's language, it is to be noted that for a child to score positively with regards to a descriptive sentence on the Griffiths Scales, they are expected to verbalize a single sentence of 6 or more syllables. Hence, a child may describe the picture in numerous sentences which have more than 6 syllables, but these sentences are not single, rather they are joined by the "and then" phrase. This then has implications in scoring the child's descriptive language.

Regarding the proposed number of personal and possessive pronouns for a child 70 months of age, Allan (1992) found that more than 50% of the sample from all four cultural groups, except the Indian group, were able to elicit Griffith's (1960) proposed number of personal and possessive pronouns. Allan's (1992) finding is contradictory to the present researcher's finding, in that none of cultural groups from either sample 1 or sample 2 elicited
a mean number of pronouns as was proposed by Griffiths (1960). Furthermore, children from the Indian cultural group of both samples, were amongst the cultural groups who elicited the highest mean number of personal and possessive pronouns from the large revised pictures.

A general trend noted for the four cultural groups, is that the percentage of children who passed successive age-appropriate items, does not decrease stepwise as would be expected from the placement of items in order of difficulty. This is in agreement with Allan (1992) and suggests that for South African children, the items are not placed in strict order of difficulty, as proposed by Griffiths (1960, 1970).

An important issue to reiterate, is that the assessment of a child's language occurs over a fixed period of time and within a finite number of situations. Development is never static, and therefore an assessment at one point in time is a frozen "snapshot" of a dynamic process (Harris, 1990; Oskaar, 1983). Despite the multitude of resources for language assessment, language continues to be one of the most challenging disorders to evaluate (Shipley & McAfee, 1992). This is no surprise when one considers how varied and complex language really is. Therefore, when working with infants and children, one must always carry the words of Truby (1976) who stated that, "Every child is different ... Not only is the language of every child unique, but so is the developmental pathway associated with the establishment and accomplishment of that language" (p.84).

The present study, in part, highlights the importance during early childhood, of such factors in the environment as space in which to develop, time in which to dream and think, and opportunities to play alone, as well as times in the company of other children. Too much company is as great a hindrance as too little; to be continually stimulated by social impressions without the time to absorb them is as bad as to be left too alone for too long. Education is largely a matter of the provision of a suitable environment in which the child may develop in his/her own manner and at his/her own pace, coupled with a careful control of objective contracts, and in particular with a sympathetic and cautious answering of his/her deliberate questions (Griffiths, 1945).
The limitations of the present research study need to be acknowledged. These include:

**Limitations regarding Samples 1 and 2**

In view of the fact that in researching aim 2 only children resident in Port Elizabeth were used in the present study, the generalization of the findings to all the children from the four different cultural groups in SA who are attending pre-school classes must be done with caution. Both Hanson et. al., (1985) and Bhamjee (1991) did not find significant differences between children from different geographical areas with regards to their performance on the Hearing and Speech Scale of the Griffiths Scales. Hence, the inclusion of children resident only in Port Elizabeth does not necessarily limit the findings to children from Port Elizabeth.

Secondly, the fact that only children residing in urban areas were included in samples 1 and 2 of the present study, may be a limiting factor, as there is evidence that urban children perform better than rural children on certain cognitive skills (Kendell, Verster & Van Mollendorf, 1988; Weisner, 1976). Hence, generalization of the results to all the children from the four cultural groups in SA who are attending pre-school classes and residing in an urban area must be done with caution.

Thirdly, as only children between the ages 60 and 83 months were included in the present study, the ability to generalize the findings to children of older and younger age ranges must be done with caution, and with a developmental perspective in mind. The small and large pictures of the Hearing and Speech Scale are utilized from the ages 20 and 34 months respectively.

Fourthly, the number of pre-schoolers falling in specified language or socio-economic groupings (e.g., Afrikaans-speaking Indian children, or Indian children from the lower socio-economic group) was small relative to the other sample sizes. This factor could limit the generalizability of findings regarding the respective pre-school samples.

**Limitations of the Research Approach**

In achieving aim 2, the present study was exploratory in nature and hence the research approach employed was descriptive. Utilizing this type of method did not allow for appropriate cross-cultural comparisons and hence, limits the generalization of results amongst the different cultural groups.
In spite of the limitations, the findings of the present study were similar in many respects to a number of other South African studies. When considering the present study in isolation the limitations appear to over shadow the contributions of the study. The importance of treating each child as a unique individual, regardless of their cultural group, age, socio-economic status, language, or gender group, cannot be over emphasized.

**RECOMMENDATIONS**

The following recommendations are made:

(i) A cross-cultural comparative study utilizing the 20 small revised pictures and the large SA picture with an older and younger age range of South African children;

(ii) As the majority of children in sample 1 and 2 did not recognize the illustration depicting the shop (picture 18), it is recommended that the illustration depicting the shop be redesigned;

(iii) Picture 15 (cup) was on numerous occasions referred to as "coffee". This confusion could be attributed to the illustration of the stimuli. Hence, the recommendation to redesign the stimuli as an empty cup, as opposed to a cup with coffee contained inside. A similar illustration confusion was experienced by Samuels (1995);

(iv) As the percentage of children who passed successive age-appropriate items does not decrease stepwise as was proposed by Griffiths (1960), it is recommended that for South African children the placement of items in order of difficulty be revised;

(v) To rename the Hearing and Speech Scale to the Hearing and Language Scale since Language is the characteristic whose development is charted in the Scale, rather than just the acquisition of speech. Lyons (1969) and McElroy (1972) distinguish speech and language in that the former is the utterance of sounds, while the latter is the transmission of those utterances to another individual in an intelligible and meaningful manner. The renaming of the Scale will be in line with the revision of the birth to 2 years Griffiths Scales (Huntley, 1996);

(vi) Griffiths' Hearing and Speech Scale does not include verbs, conjunctions or prepositions as part of their scoring criteria. Hence, in order to enhance the Scale to yield a fuller picture of a child's language development these parts-of-speech could
be included into the Hearing and Speech Scale;

(vii) The development of norms for the children of South Africa. This includes further cross-cultural research regarding the revised small and large SA pictures;

(viii) Preparation of a new Record Form and Scoring Tables incorporating the findings of the present study.

CONCLUSIONS

This study has made the following contributions:

(i) The process of updating and revising an already existing culture-common test in South Africa, namely the Griffiths Scales, has been furthered;
(ii) The 20 small pictures and the large picture of the Hearing and Speech Scale of the Griffiths Scales has been revised, making these items more culture-fair and contemporary for the children of South Africa;
(iii) The 20 small pictures and the large picture of the Hearing and Speech Scale has been revised, making these items more culture-fair and contemporary for the children of United Kingdom/Europe/Australia
(iv) The provision of a revised set of South African contemporary small and large pictures for the Hearing and Speech Scale of the Griffiths Scales. These revised picture-sets are to be added to the Griffiths kits, which are utilized by trained professional in South Africa.
(v) The provision of a revised set of British\European\Australian contemporary small and large pictures for the Hearing and Speech Scale of the Griffiths Scales. These revised picture-sets are to be added to the Griffiths kits which are utilized in the United Kingdom, Europe and Australia by trained professionals.

In conclusion, the assessment of children should always take into consideration that their progression through the formative years depends on their needs and on the variety of experiences offered to them by the environment. The child can proceed no faster than their last level of maturation and no faster than the opportunity to gain skill at another level. Furthermore, the role of development is not constant during the formative years, and there may be transient slowing in the rate of maturation with subsequent hastening. The age range used in the present study involved the pre-school period, a time of rapid change in all functions, but language is indeed a most rapid acquisition, as it begins late and attains a
high degree of perfection at a very early age (McCarthy, 1930).

In order for language to be functional, a child should expand their world both physically and mentally. If the environment does not allow experimentation, then language will be hampered. Lenneberg (1966) stated that a child gears their language to their needs. Those needs are set by the events and relationships with a particular group of people within a particular culture. Each child develops a dialect that is set by the culture and the home. If language reflects their needs and their cultural background, it is adequate. Speak to the child, not at the child. It is their language, not yours, that will be the horse to carry them into a far country (McElroy, 1972).
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APPENDICES

Appendix A  Letters and questionnaires to South African `expert' Griffiths uses in South Africa
Letters and questionnaires to South African `lay-experts' in early child development in South Africa

Appendix B  Letter to principals/teachers for testing permission

Appendix C  Letter to parents/guardians for testing permission (incl. consent forms)

Appendix D  Biographical questionnaire for parents

Appendix E  Riordan's values assigned to the various occupational levels of the child's father.
Riordan's values assigned to the various educational levels of the child's father.
Riordan's cut-off points for the various ethnic classifications groups.

Appendix F  The Xhosa and Afrikaans translations of the English instructions relevant in the administration of the large and small pictures of the Hearing and Speech Scale (Scale CQ)
APPENDIX A

Letters and questionnaires to South African `expert' Griffiths uses in South Africa

Dear ................................................................. date

Griffiths Scales of Mental Development Research

The University of Port Elizabeth is currently conducting a research project which involves revising the Hearing and Speech Scale of the Griffiths Scales of Mental Development (GSMD) (Extended Scale).

Recent research conducted regarding the current use of the GSMD indicates that users find the 20 small pictures and the large picture culturally biased and outdated. The aim of this research study, therefore is to revise the 20 pictures and the large picture, in order to make them more culturally neutral for the children of our contemporary world.

The initial stage of the study, involved the preparation of 20 experimental revised pictures and 2 large pictures. One of the large pictures is to be appropriate for contemporary United Kingdom/European/Australian children and the second, for contemporary South African children.

To assist us in reaching the aim of the study, your comments and suggestions would be greatly appreciated. We would appreciate it if you please complete the questionnaire, and return it to the university in the enclosed envelope before Monday, 12 May 1997.

The success of this study will depend on your voluntary co-operation and we thank you in anticipation.

Yours faithfully,

(Ms) Nicole Kotras Professor D.M Luiz

INTERN PSYCHOLOGIST HEAD: PSYCHOLOGY DEPARTMENT
APPENDIX A

Letters and questionnaires to South African ‘lay-experts’ in early child development in South Africa

Dear ……………………………………………………………… date

Griffiths Scales of Mental Development Research

The University of Port Elizabeth is currently conducting a research project which involves revising the Hearing and Speech Scale of the Griffiths Scales of Mental Development (GSMD) (Extended Scale).

The extended GSMD involves testing children from 2 to 7 years 11 months of age across six developmental domains. The Scales include Locomotor, Personal-Social, Hearing and Speech, Eye Hand Co-ordination, Performance and Practical Reasoning. The large picture of the Hearing and Speech Scale is shown to the subject, with the request to name an age-appropriate number of stimuli in the picture. It also has a descriptive category, where the child is asked to describe activity evident in the picture. For each of the small pictures the subject is asked to name the stimuli.

Recent research conducted regarding the current use of the GSMD indicates that users find the 20 small pictures and the large picture culturally biased and outdated. The aim of this research study, therefore is to revise the 20 pictures and the large picture, in order to make them more culturally neutral for the children of our contemporary world.

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Yours faithfully,

(Ms) Nicole Kotras

Professor D.M Luiz

INTERN PSYCHOLOGIST

HEAD: PSYCHOLOGY DEPARTMENT
APPENDIX A

Questionnaire attached to above letters

NAME:
INSTITUTION:

1. Please make comments and/or suggestions regarding the enclosed United Kingdom/European/Australian experimental large picture.

2. Please make comments and/or suggestions regarding the enclosed South African experimental large picture.

3. Please make comments, and/or suggestions regarding the 20 enclosed experimental small pictures.
APPENDIX B

Letters to principal/teacher for testing permission, explaining the purpose of the study

Dear principal/teacher

The University of Port Elizabeth is currently conducting a research project which involves revising the Hearing and Speech Scale of the Griffiths Scales of Mental Development (GSMD) (Extended Scale). The extended GSMD involves testing children from 2 years to 7 years 11 months of age across six developmental domains. The Hearing and Speech Scale are one of the measured domains.

Recent research conducted regarding the current use of the GSMD indicates that the users find a section of the Hearing and Speech Scale to be culturally-biased and out-dated. The aim of this research study therefore, is to revise the culturally-biased section of the Scale in order to make it more culturally neutral and contemporary for the children of South Africa.

In order to obtain a fairly representative sample of children between the 5 years and 6 years of age we hope to test as many children as possible. The testing will take place during school hours (as part of the school readiness assessment) and no fee is involved. In order to make this research project possible, your assistance in distributing a biographical questionnaire, together with a cover letter and consent form, which has to be completed by parents and returned to your school as soon as possible, is required.

Although the information and test results will be utilized for research purposes, all information given will be treated as strictly confidential.

Your assistance and co-operation in this study will be greatly appreciated.

Thank you

Yours sincerely,

(Ms) Nicole Kotras

INTERN PSYCHOLOGIST
Letter to parents for their permission to test their children

Dear parents date

Griffiths Scales of Mental Development Research

The University of Port Elizabeth is currently conducting a research project which involves revising the Hearing and Speech Scale of the Griffiths Scales of Mental Development (GSMD) (Extended Scale). A Scale which assesses mental development in children from the age range 2 to 7 years 11 months, across six developmental domains.

The creche, pre-school or school which your child attends has agreed to participate in this project. Provided that you are in agreement, I would like to administer the revised Hearing and Speech Scale pictures to your child.

The test will be administered during school hours and no fee will be charged. In order to use the test results for research purposes, I need to obtain some background information on your child. Please complete the attached questionnaire and return it to the teacher as soon as possible.

Although the information and test results will be utilized for research purposes, all information given will be treated as strictly confidential.

Your assistance and co-operation in this study will be highly appreciated.

Thank you

Yours sincerely,

(Ms) N. Kotras

INTERN PSYCHOLOGIST

Consent Form
I hereby *grant/ do not grant* permission for my child to participate in the research project on the Griffiths revision process.

Parents signature: ................................................................. Date:........................................

Child's name: ........................................................................................................................................

Child's birth date: ..............(Day) .................(Month) ............... (Year)

Name and address of parent(s)/ guardian(s):
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................
..................................................................................................................................................................

pre-school's name: ..............................................................................................................................

* Deleted which is not applicable
Biographical questionnaire for parents

1. Date
2. Name of child
3. Address
4. Phone number (h) (w)
5. Home language
6. Creche/pre-school/school/other attending
7. Child’s date of birth
8. Child’s age
9. Child’s sex
10. Standard (if applicable)
11. Religion
12. Mother’s age
   occupation
   educational qualifications
13. Father’s age
   occupation
   educational level (Please tick the appropriate block below)

<table>
<thead>
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<th>None</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Primary school</td>
<td></td>
</tr>
<tr>
<td>Junior certificate (Std. 8)</td>
<td></td>
</tr>
<tr>
<td>Apprenticeship</td>
<td></td>
</tr>
<tr>
<td>Matric</td>
<td></td>
</tr>
<tr>
<td>Further training (not at university)</td>
<td></td>
</tr>
<tr>
<td>University degree/diploma</td>
<td></td>
</tr>
</tbody>
</table>

14. Birth history. Please describe anything unusual about your pregnancy or delivery
15. Was the birth
   Natural?
   Induced?
   by caesarean section?
   a forceps delivery?
16. Was your child anoxic (i.e., was s/he a blue baby and lacked oxygen) at birth?
17. Was your child born either prematurely or after more than 41 weeks of pregnancy? If so, please indicate after how many weeks
18. Is your child one of a twin?
19. Were walking, talking, toilet training normal?
   What were his/her ages?
20. Was feeding development normal?
21. Has your child ever had:
   Meningitis
   Encephalitis
   Convulsions (fits)
   Concussion
   Anaemia
   A very high fever or temperature
   A head injury where s/he lost consciousness
   An allergy
22. Does your child ever complain of headaches?
23. Is your child clumsy?
24. Does anyone in your immediate family suffer from epilepsy?
25. Do you sometimes notice a muscle or group of muscles twitching in your child?
26. Is your child on any kind of medication?
   If so, what for?
27. Has the teacher ever complained that your child is very restless and struggles to concentrate in class?
28. Please list all childhood diseases and ages:

Thank you for your co-operation, all information supplied will be treated as strictly confidential.
Riordan (1978). The values assigned to the various occupational levels of the child's father.

<table>
<thead>
<tr>
<th>Occupational Classification</th>
<th>Score</th>
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<tbody>
<tr>
<td>Top professional, executive, administrative and technical occupations</td>
<td>9</td>
</tr>
<tr>
<td>Professional, administrative and managerial workers</td>
<td>8</td>
</tr>
<tr>
<td>Independent commercial</td>
<td>7</td>
</tr>
<tr>
<td>Lower grade administrative, technical, clerical, with limited supervisory and administrative responsibility</td>
<td>6</td>
</tr>
<tr>
<td>Artisans and skilled workers with trade qualifications</td>
<td>5</td>
</tr>
<tr>
<td>Routine clerical and administrative workers, service and sales workers</td>
<td>4</td>
</tr>
<tr>
<td>Semi-skilled production and manual workers</td>
<td>3</td>
</tr>
<tr>
<td>Unskilled production and manual workers</td>
<td>2</td>
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<tr>
<td>Not economically active or productive</td>
<td>1</td>
</tr>
<tr>
<td>No response</td>
<td>0</td>
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</tbody>
</table>

Riordan (1978). The values assigned to the various educational levels of the child's father.

<table>
<thead>
<tr>
<th>Father's education</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>University attendance</td>
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<tr>
<td>Post-matric training (not university)</td>
<td>6</td>
</tr>
<tr>
<td>Matric</td>
<td>5</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>4</td>
</tr>
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<td>Junior Certificate</td>
<td>3</td>
</tr>
<tr>
<td>Primary school</td>
<td>2</td>
</tr>
<tr>
<td>None at all</td>
<td>1</td>
</tr>
<tr>
<td>No response</td>
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</table>

Riordan's (1978) cut-off points for the various ethnic classifications groups.

<table>
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<tr>
<th></th>
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<th>Middle</th>
<th>Upper</th>
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<tbody>
<tr>
<td>Whites</td>
<td>2-10</td>
<td>11-13</td>
<td>14-16</td>
</tr>
<tr>
<td>Coloureds</td>
<td>2-6</td>
<td>7-10</td>
<td>11-16</td>
</tr>
<tr>
<td>Indians</td>
<td>2-6</td>
<td>7-10</td>
<td>11-16</td>
</tr>
<tr>
<td>Blacks</td>
<td>2-5</td>
<td>6-10</td>
<td>11-16</td>
</tr>
</tbody>
</table>
The Xhosa and Afrikaans translations of the English instructions relevant in the administration of the pictures (Allan, 1992)

C.IV.1 Tell me about it.
   Vertel my daarvan.
   Ndixelele konke ngayo.

   What can you see?
   Wat sien jy?
   Ubona ntoni?

   What are they all doing?
   Wat doen almal?
   Benza ntoni bonke?

C.IV.2 What is this?
   Wat is dit?
   Yintoni le?

   What do we call it?
   Wat noem ons dit?
   Sithini xa siyibiza?