The influence of gender-role on upper primary school students' graphic representations

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THE INFLUENCE OF GENDER-ROLE ON UPPER PRIMARY SCHOOL STUDENTS' GRAPHIC REPRESENTATIONS

by

Tamara Frederiks

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of

Bachelor of Education (Honours)

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ABSTRACT

The aim of this research was to study the effect of gender-role on Year Six students' graphic representations completed during a visual transformation task. The influence of gender on learning has become a significant issue in primary schools and research in the area is needed to inform teachers about gender differences. The significance of the issue relates to the equality of opportunity for girls and boys in the classroom. Drawings are of significance because they provide teachers and parents with a glimpse of the developing child in terms of his or her creative and mental growth, feelings, emotions and world-view. Drawings may not only become a vehicle for exploring gender-roles, but they also illustrate characteristics of these roles that are significant to the developing child. For teachers, being aware of the gender related meanings represented in children's drawings could lead to a better understanding of an individual child and of the class as a whole.

A Year 6/7 class with 19 students located in Perth's metropolitan area was used for the research. Children in this class ranged in age from eleven years to thirteen years and three months. The research required the students to complete observational drawing and visual transformation tasks. These drawings were collected and analysed using an inductive approach to qualitative research. The drawings were analysed according to four criteria: subject matter, expressive power, degree of detail and narrative content. The results were supported by brief written responses received in answer to the statement 'My drawing shows...'. This allowed the children to make a statement about the content or meaning of their drawings and to make further comments.

The findings of this study illustrate that gender-role does have an influence on children's graphic representations with girls preferring to draw animals and boys producing drawings of caricatures. Boys also demonstrated higher expressive capacities and detail in their drawings and they also tended to produce more drawings containing narratives. Although the proposed sample was relatively small, the findings of the study may be used as a basis for further research in the area of children's drawings.
DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education,

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii) contain any defamatory material

Signature:

Date:
I would like to thank my supervisor, Tony Monk, for his overwhelming support and encouragement throughout the completion of this study. His help and guidance over the duration of the study has been tremendous.

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CHAPTER 1

Introduction

1.1 Overview of Chapter

In this chapter, some background information on the significance of drawing is discussed to provide a background to the research topic. The purpose of the study is outlined and the research questions are also identified in this chapter. Definitions of common terms used throughout the thesis are supplied and finally, the conceptual framework of this research study is described.

1.2 Background to the Study

Children draw for many reasons. Drawing allows children to express ideas, feelings, emotions and to create representations of their everyday realities and imagined alternative realities. Drawing also provides children with the opportunity to learn about themselves and the activity provides opportunities for success and achievement by way of technique, process or medium. The purpose of drawing will undoubtedly remain personal to the individual child, but nevertheless, drawings become a means of communication to other children and to significant adults.

When children become involved in drawing as both process and product, inevitably, the completed drawings become personal reflections of their experiences. Wilson, Hurwitz and Wilson (1987, p. 11) posited that “Drawings ... are like windows on the world” and are primarily a means of expression that reflect a child’s growth, perceptions, understandings and interpretations of the world. Drawings are an indication of how children view the world and their surroundings, especially if they are intrinsically motivated (Goodnow, 1977).
The significance of drawing in a child's development is also supported by Linderman (1990, p. 15) who asserted that "art [and drawing] experiences are a unique and indispensable component of a child's entire development". Drawing assists in the child's expression of unique and personal ideas by encouraging flexibility and enhancing reasoning and intuitive thinking skills. Drawing also assists in the development of initiative by promoting graphic problem solving as a means to success and personal achievement.

Lowenfeld and Brittain (1975) assert a similar point, describing drawing as a complex process in which:

the child brings together diverse elements of his or her experience to make a new and meaningful whole. In the process of selecting, interpreting and reforming these elements, the child has given us more than a picture; he has given us a part of himself; how he thinks, feels and sees the world and his surroundings (1975, p. 3).

It is a commonly expressed viewpoint that children draw what they know rather than what they see (O'Connor and Hermelin, 1992; Arnheim, 1989; Eng, 1970). Furthermore, Di Leo (1977) asserted that children will combine realism and expression to show a reality that is more in the mind than in the object. If it is the case that children draw what they know rather than what they see, then it may be reasonable to assume that boys, who play boys' games, wear boys' clothing, behave competitively and aggressively, will reflect "boy" characteristics in their drawings in terms of subject matter and their approach. It may also be assumed that girls' drawings will reflect distinctive approaches and subject matter.

If the assumption is that children draw what they know and experience, then the content of their drawing may reflect this. Speck (1995, p. 49) argued that drawings may even assist in the construction of gender because "the content produced in drawings contribute to a more complex picture of how children are shaped, and how they
themselves, as boys and girls, actively shape themselves as masculine or feminine and thus partake of the construction of their own gender”.

It should be recognised that children’s drawings are significant in providing teachers, parents, or others with clues about the whole child. For this reason, research into children’s drawings becomes important. The view of Speck (1995, p. 41) is that “gender differences in boys’ drawings and girls’ drawing has been a recurring but little developed theme in research findings”. She also asserted that there have been no thorough investigations into “what makes a girls’ drawing and what makes a boys’ drawing”. This is the issue that has been addressed in this study.

1.3 Significance of the Study
Research has been limited in the area of children’s drawings. Clark (1994) identified in her study that there is a lack of research into the drawings of older children (i.e. middle and upper primary). Clark’s view is endorsed by Thistlewood, Paine and Court (1992) who reported that certain issues in the field of drawing require attention. Thistlewood, Paine and Court (1992) argued that the graphic representations of children is an area which requires further research, particularly into the sources of imagery and the internal or external influences on graphic representations.

It is important to complete research into drawing for a number of reasons. First of all, research into children’s drawing will expand current understandings about the nature of drawing in relation to children’s purposes for drawing. Secondly, a child’s drawings may be considered as a window which gives teachers and parents a glimpse of perceptual and cognitive development. Research into children’s drawings would therefore be beneficial for the purposes of tracking the child’s creative and mental growth. Thirdly, children’s drawings present a holistic view of each child in relation to their feelings, culture and symbolism; all of which are mediated by gender. Finally, information about the influence of gender on subject matter and approaches to drawing may lead to support in other curricular areas, and thus enhance academic achievement and skill.
For teachers, understanding and recognizing gender-role differences in drawings could lead to the implementation of different or more suitable strategies for teaching drawing and other visual arts content. Furthermore, being aware of the gender-related meanings represented in a child's drawings could lead to a fuller understanding of the individual child and of the class as a whole.

1.4 Purpose of the Study and Research Questions
The research study aimed to investigate the degree of influence that gender-role has on the graphic representations of children aged between eleven and thirteen years (Year 6/7). In this study, the subject matter was the main area to be considered as the children participating in the study engaged in a visual transformation task. Alongside subject matter, other areas investigated included expressive power, degree of detail and the narrative content of drawings. The following research questions were formulated:

1. Does gender-role influence the subject matter of children's graphic representations?
2. To what degree does gender-role influence the expressive capacities of children's graphic representations?
3. To what degree does gender-role influence the detail of children's graphic representations?
4. Does gender-role influence the narrative content of children's graphic representations?

1.5 Definition of Terms
The following terms are identified and defined to clarify their meanings within the context of this study.

Expressive power - the extent to which ideas, feelings, moods and meanings are conveyed through the selective use of communicative possibilities in drawing (Linderman, 1997; Thomas and Silk, 1990).
Degree of detail - minute parts of the drawing concerning colour, line, form, shape and perspective (Tuman, 1999; Speck, 1995; Cox, 1992).

Gender-role identity - a body related sense of self as male or female which is social, not biological. Gender-role involves expressed behaviours that are learned rather than invented and consists of engaging in those activities, interests and tasks that are socially prescribed for men and women. Gender role identity is revealed in behaviour that a society deems to be appropriate for a person’s biological sex (Slee, 1993).

Graphic representations - “where shapes and lines are combined and modified with great versatility to represent whatever a child wishes” (Lark-Horovitz, Lewis and Luca, 1973, p. 3). Wilson, Hurwitz and Wilson (1987, p. 15) stated that “Drawing ... allows for the presentation of their [the children’s] complex ideas about the world” through an individual and unique symbol system which is also “a culturally specific standard vocabulary of shapes and configurations” (p. 25).

Narrative content - elements of a story concealed within a drawing. Luquet (1924, trans. 1985) identified four individual types of narrative exhibited by children in their drawings that communicate a story. These include the repetition type, the juxtaposition type, the symbolic type and the epinal type. The super-imposed narrative was also identified by Duncum (1992) as being commonly represented in children’s drawings.

Subject matter - “an object, scene, incident, or the like, chosen by an artist for representation, or as represented in art” (Delbridge, 1998, p. 1163).

Visual transformation task - the act of transforming a drawing by altering it to make a new drawing using the same image. The act of communicating a personal idea through a drawing (Zirngast, 1987).
1.6 Conceptual Framework

The Conceptual Framework for this study draws on three major theories. The study's focus is based on the influence of gender-role on children's graphic representations. Therefore, the framework draws on theories relating to gender development and drawing.

The relationship between major theories impacting on the study are presented graphically in the Conceptual Framework which follows.

![Conceptual Framework](image)

Bem's (1981) gender schema theory is considered as the main explanation of the development of gender and gender-role behaviours in children. The theory outlines the
process that a child may undertake during the construction of his or her gender. The process begins with a reflection on the societal influences, such as family and peers and the personal beliefs of the developing child. The personal beliefs that the child holds are intrinsic and based on individual experiences which have directly or indirectly had an impact on the child. The influences from society, such as cultural values and family beliefs, are external influences and these too, have a significant degree of influence on the development of a child's gender-role behaviours. From these two aspects, gender-role behaviours are independently learned and consequently exhibited. The framework illustrates that these gender-role behaviours will become evident in children's drawings.

The Conceptual Framework also draws on two prominent drawing theories, the Convention theory, as proposed by Wilson and Wilson (1982) and the Perceptual theory, as proposed by Arnheim (1974). Wilson and Wilson's (1982) convention theory suggests that all representations are the results of previously learned and acquired graphic conventions. It is proposed that images are created solely from observation of images which are the products of other artists or peers within a culture. The perceptual theory (Arnheim, 1974) differs from the convention theory in that it suggests that the aims of image creation is to create equivalence rather than realism. It suggests that drawings are based on the formal properties of the objects being observed and endeavour to include these properties in the drawing.

Although separate theories, the framework draws a link between the two. A combination of both the Convention theory and the Perceptual theory present an accurate basis for the development of drawing. Most drawings completed by children will show evidence of both graphic and perceptual cues. Drawings are composed from both observation of an object and from previously learned graphic conventions. These two theories focus on the manner in which a child draws and will undoubtedly have an impact on the child's drawing.
CHAPTER 2
Review of Literature

2.1 Overview of Chapter
This chapter presents a discussion of the issues related to this study and draws on the work of many researchers who have conducted studies in similar or related areas. Gender-role development in children is considered in relation to general education. To provide a context for the discussion of the development of gender-role differences and the impact of this on visual arts and general education, differences between girls' and boys' performance across the curriculum are outlined. The topic of drawing is considered in some detail, beginning with a developmental overview of children's drawing skills with a focus on the age-range of the participants in this study. The types of drawings produced by children and the influences that they may encounter while completing these drawings are also outlined. The concept of graphic representations in children's drawing is discussed. This is followed by a detailed review of literature relating to the differences that have been identified among boys' and girls' drawings in relation to subject matter, expressive power, degree of detail and narrative elements. The final issue raised in the chapter concerns recommendations for the teaching of drawing.

2.2 Development of Gender-role
A common misunderstanding in past studies of gender development has been that a child's sex (girl/boy) automatically and unquestionably determines their gender identity. Lloyd and Duveen (1992) found that there is a tendency to assume that all boys are masculine and all girls are feminine. However, Lloyd and Duveen (1992) pointed out
that the construction of gender identity is in no way determined by a person's biological sex. This qualification is sometimes overlooked.

The male/female distinction and the influence of environmental factors is expressed even more strongly by Di Leo (1977, p. 7):

Establishment of the gender-role in human beings is not a function of chromosomal sex, gonadal sex or hormones, and although the character of the external genitalia does play a role, it is not necessarily a determining one. Environmental factors are involved and often play a decisive role. These environmental influences operating early in life may result in the assumption of a sexual orientation that is at variance with the biological sex.

Early research conducted by Kohlberg (1974) showed that the development of gender-role may occur in stages. Kohlberg proposed the following cognitive stage sequence for the development of gender-roles in children. The initial stage is achieved with a "gender identity" which occurs with the labelling of the individual self as male or female and is commonly reached by the age of three. Following from this is the "gender stability" stage where children reaffirm their self-categorisation with physical reality, realising and coming to terms with the fact that they grow up to be men and women. With the last stage, "gender constancy" is achieved as the child values those objects and acts consistent with his or her gender identity. In this stage of development, the child realises that alterations in clothing, hair or other such physical traits, do not alter the sex of the individual. This stage is usually achieved between the ages of five and seven. In more recent literature, Black, Puckett and Bell (1992) reported that by the age of eight, gender-role behaviours are clearly evident in children though their mannerisms, language, play choices and friendships.

Kohlberg (1974) suggested that once a child has established a gender-role, he or she will become increasingly interested in observing and imitating appropriate behaviours from significant others. Furthermore, establishment of a gender identity will guide a child's actions and attention for as Phares (1997, p. 605) observed, "there is evidence that boys
and girls attend differently to events in their environment associated with sex role”. This view is supported by Carducci (1998), who wrote that the establishment of a gender identity “motivates” children into organising their interactions and experiences according to their gender-role or gender schema.

The motivation to organise interactions and experiences is to some extent influenced by the social environment in which significant others play a vital role. Significant others, as identified by Kohlberg (1974) and Woolfolk (1998), include family, peers and teachers. It has been clearly established that the family, peers and teachers play a distinct role in influencing the development of gender-role behaviours primarily through interactions that occur in the home and school environments.

The environment is also considered by Woolfolk (1998) to be a significant force in terms of its influence on the formation of gender-role in children. This is illustrated by Speck (1995) who outlined the general characteristics of the “environment” including “parenting style, language used in interactions with the child, bedroom decorating style, child care, school environment, teacher time, toys, dress, exposure to sport, popular culture and many other variables” (p. 47). For the individual child, features such as these are closely personal and have a significant impact on his or her gender-role development.

Woolfolk (1998) stated that from the family, peers, teachers and the general living environment (including both the school and the home surroundings), children begin to form “gender schema’s”, or “organised networks about what it means to be male or female” (p. 179). Similarly, Carducci (1998, p. 380) defined gender schema’s as “a set of beliefs and expectancies an individual has clustered together with regard to being male or female that influences the type of information [or activity] to which he or she attends”.

Bem (1981) proposed the Gender Schema theory. This theory proposed that gender-role types lead to activity consistent with the individual’s self-concept, irrespective of biological sex. Further, Bem (1981) argued that people use categories based on what
they consider to be masculine and feminine in order to establish their personal gender identity.

Other theories which describe the acquisition of gender-role and its relevant behaviours include (a) social cognitive theory, where gender is formed as a consequence of social interaction, (b) the learning theory where differences are recognised as being the result of differential reinforcement for sex-typed behaviours, and (c) the social learning theory, which states that imitation, self-regulation and reciprocal determinism are relevant to the development of gender (Phares, 1997, p. 615).

2.3 Gender-role in General Education

Research has shown that several significant differences exist in the cognitive functioning of girls and boys and this is revealed in their academic achievements. King (1978) conducted research in the area of gender and questioned whether gender has an influence on academic achievement. Evidence of distinct differences was identified by King (1978) among girls and boys in their level of performance through the examination of several hundred assessments provided by classroom teachers. Reading, writing, mathematics and science were some of the areas that King examined in his research. Overall, King (1978) found that girls maintained a higher rating in terms of general curricular performance.

King's (1978) research is related to this study because he investigated girls' and boys' creative writing stories according to subject matter and underlying ideas. He identified several distinct differences and found that common themes expressed by girls included domestic settings of the home and for boys, the themes expressed included planes, fighting and accidents. King (1978) concluded that the dominant theme conveyed in the stories produced by girls was domesticity and adventure for boys.

Since King's (1978) early research, other studies have been completed on the differences between gender-role behaviours. Lloyd and Duveen (1992, p. 34) referred to Croll and Moses' (1991) research of the general educational experiences of girls and boys. Croll
and Moses' (1991) findings were somewhat similar to those of King (1978) in that both studies concluded that girls achieved a higher level of performance in academic activities.

Croll and Moses (cited in Lloyd and Duveen, 1992) argued that the adoption of a gender-role is highly significant in the primary school setting, in terms of the children’s social outlook, their behaviour and their academic achievements. In particular, Croll and Moses (1991) investigated the degree of influence that gender-role had on the academic achievements of girls and boys. According to Croll and Moses (cited in Lloyd and Duveen, 1992, p. 34) girls had a higher level of motivation, and therefore, a higher progression rate in their academic learning. On the other hand, Croll and Moses (1991) found that boys performed better in the curriculum areas of mathematics and science and displayed a higher level of self-confidence in the social atmosphere of the classroom. Croll and Moses’ (1991) main conclusion (cited in Lloyd and Duveen, 1992, p. 34) was that “although girls are differentiated at primary school the evidence suggests that they are not disadvantaged” and as a result, they achieve at a higher level than boys.

According to Chapman (1988) girls have been thought to be innately superior to boys in the curriculum area of language. Research by Chapman (1988) found that girls possess greater verbal abilities and English skills, especially in the areas of vocabulary development, reading comprehension and solving analogies. Further support is provided by Myers (1995) who found that girls are generally better at spelling than boys.

Research in the curriculum area of mathematics has found some significant differences in terms of the cognitive ability of girls and boys. A study by Carducci (1998) showed that boys have a greater competence in this area, particularly with spatial relationships. Studies conducted prior to 1974 revealed that boys performed significantly better in mathematics than girls (Woolfolk, 1998, p. 182). Woolfolk (1998) reported that over the past twenty years the differences in skill and performance have tended to diminish, but males are still likely to surpass females in the area of spatial ability, especially in relation to “mental rotation of a figure in space, prediction of the trajectories of moving objects and navigating” (p. 182).
In the curriculum area of science, girls exhibit a general lack of motivation and participation in science activities. Chapman (1988, p. 15) found that:

Girls were much less forceful than boys about being given their turn, being allowed to keep on working with equipment, and trying out ideas in class discussion. They tended more than boys to look for correct solutions, right answers, success at completing repetitious tasks and clues of approval from teachers. They were afraid to take risks, be 'wrong', 'ruin' laboratory equipment, or submit 'messy' lab notebooks. They asked for clarification, whereas the boys pressed to move on to new material.

Further support for differences in performances by girls and boys in subject areas were supplied by Myers (1995) who stated that "traditionally, math and science were considered masculine subjects"; however as more girls are encouraged to undertake science and mathematics, the gender gap is diminishing (p. 668). Although differences have been found through research in curriculum areas such as language, mathematics and science, so too have differences been identified in the physical behaviour and playground activity of primary school children.

Early studies conducted by Lever (1978) into children's participation in playground activity showed that boys preferred large group associations with a significant focus on the activity in which they are engaged, often with little intimate discussion. Contrary to this, Lever (1978) found that girls resorted to small group involvement, demonstrating less competition and greater social relationships.

Research conducted by Linaza (1984) cited in Cole and Cole (1993, p. 523) found that from observation of English and Spanish boys and girls playing marbles, boys generally engaged in the activity more often than girls and demonstrated more skilful play than girls. In relation to athletics or participation in physical education, Chapman (1988) found that boys were expected to be committed to competitive athletics, whereas girls were not encouraged to participate in team sports and competitive games. In recent
research, Carducci (1998) concluded that boys of the primary school age are generally more aggressive during participation in physical activity due to a higher level of adult expectation and encouragement.

2.4 Children’s Drawings

Drawing is the art of transforming a perception into a representational image (Speck, 1985). It is a means of personal expression. Goodnow (1977), an Australian psychologist, believed that drawings are a reflection of what children think and feel and they also reveal what children view to be important. In this section the development of graphic representational ability, the influences on this development and the various types of drawings will be outlined.

2.4.1 Perspectives on Children’s Drawing Development

It is accepted that development in drawing and the acquisition of drawing skills occurs in stages. Many researchers have voiced their opinions and completed studies in relation to developmental stages of drawing and have identified similar outcomes.

Early research completed by Burt (1921) found that children progress through a series of stages as their drawing skills develop. Luquet’s (1924) pioneering research also suggested that drawing development occurs in stages although as Di Leo (1977, p. 60) cautioned “the passage from stage to stage is never abrupt. It proceeds by degrees, with frequent lapses to earlier levels but with an onward and upward trend into a higher level”.

While agreeing with the notion of developmental stages in children’s drawings, Eng (1970, p. 101) considered that something deeper is involved in the developmental process:

The study of the early drawings of children shows that a significant and regulated development is found in the apparently valueless and planless drawings of children. It appears on the one hand as a progress in ability to draw and in
increasing mastery of line and form; on the other hand, progress in drawing is the expression of the gradual unfolding of the child’s soul.

Children pass through clearly defined stages as their representational drawing skills develop. It is also important to note that each developmental stage identifies the child’s drawing as a form of communication, or as a representation of what is important, even though the observing adult may not often understand the message being conveyed (Lark-Horovitz, Lewis and Luca, 1973, p. 6)

In pioneering work, Lowenfeld and Brittain (1975) identified the "scribbling" stage as the initial stage in drawing which occurs between the ages of one and a half and four years. This stage reflects a child’s random mark-making through scribbling. These scribbles gradually become more controlled and organised and lead into the "pre-schematic" stage of drawing development. The pre-schematic stage is usually present in children aged between four and seven. The first representational attempts of human figures are evident in the drawings of children in this age range as they use abstracted schemas which "demonstrate the beginning of ordered thought processes" (Lowenfeld and Brittain, 1975, p. 157) and establish the beginnings of complex representations. This is followed by the "schematic" stage (Lowenfeld and Brittain, 1975). The child, aged between seven and nine, develops a form concept that symbolises the environment and allows the repeated use of schema including a base-line in drawings as spatial awareness develops. The word “schema” has a Latin meaning of “outline” (Lark-Horovitz, Lewis and Luca, 1973) and most of the representations drawn by children of this age will bear some resemblance to the actual objects and the experiences that influenced their production.

Children aged between nine and twelve years are likely to be experiencing the “dawning realism” stage of drawing development. This stage is otherwise known as the “gang age” as peers have a great influence on the drawings completed by individual children (Lowenfeld and Brittain, 1975). The child in this stage will still demonstrate the tendency to symbolise rather than represent accurately their surrounding world.
However, drawings are more detailed in that children will give attention to clothing and hair and the sky will be brought down to the base-line. Depth is demonstrated in drawings through overlapping and a distinct awareness of the self becomes evident. Children draw what they see and attempt to convey meanings through their drawings.

The "pseudo-naturalistic" stage is the stage of reasoning, with a greater awareness of natural surroundings (Lowenfeld and Brittain, 1975). Drawings are personal and remain hidden and more emphasis is placed on detail. Children will generally be eleven or twelve years of age as they enter this stage of drawing development. Children will become shy about their drawings and consequently, spontaneous and representational drawings reach their lowest levels. Lark-Horovitz, Lewis and Luca (1973) posited that objects or groups of objects are drawn from single vantage points, with situation, position and movement being shown in the representation of objects. A common feature of the drawings of children at this age is a move towards graphic realism; to what is "natural" and what is "real".

Hurwitz and Day (1995) identify a similar stage of drawing development for children in the age range of ten and thirteen, from grades five through to eight; the pre-adolescent stage. According to Hurwitz and Day (1995), children at this stage are becoming increasingly aware of social opinions, including those of their peers. With this awareness comes the development of critical skills at about eleven years of age when children develop an increasing appreciation of the quality of their own products and become generally dissatisfied with their efforts.

The stage of "visual realism" or "pseudo-naturalism" was also identified by Ashton (1997) as significant in the development of children's drawing skills. She identified that children in this stage have an "increasing desire to represent things more realistically with accurate detail, proportion and perspective" (p. 10). In common with Hurwitz and Day (1995), Ashton (1997) found that children at this age express frustration, embarrassment, shame and failure in their drawings as they become self critical of their efforts. Ashton
(1997) further identified that cartooning and copying occur throughout this stage as children strive to achieve perceptual skills and realism in their drawings.

Although Lowenfeld and Brittain (1975), Hurwitz and Day (1995) and Ashton (1997) have presented clear characteristics concerning the stages of drawing development of children, some concerns need to be raised regarding the issue of "stage" theory and its significance.

The stage approach is essentially an approach whereby children's drawings are viewed according to relevant and particular stages of development. There are several assumptions or concerns which were challenged by Ashton (1997) in relation to the stage theory: (a) that the progression from stage to stage occurs naturally, without any form of adult intervention, (b) that talent is regularly accepted as a rare natural gift as opposed to a potential which can be facilitated, and (c) that "acknowledgment of drawings as gendered constructions of experience is generally absent from the stages created by male psychologists" (p. 6).

It must be remembered that every individual child matures and develops at his or her own rate, by himself/herself or with the help of others and according to their own developmental limitations. Generally, when considering the stage theory, variations among children and the possibility of regression as well as stage progression must be acknowledged, for as Cox (1992) pointed out, "representational drawing does not necessarily have to be preceded by a period of scribbling and scribbling, of course, does not necessarily lead to representation" (p. 16). The ages indicated by the stage theory are based on the typical mid-points of development in children and present no specific boundaries in relation to achievement of a specific stage. The stages are only intended as a guide and indicate the general characteristics of children at a particular age.

In addition to the common theory of stage development, other representation theories have been advanced. The "Perceptual" theory advanced by Arnheim (cited in Boughton, 1985, p. 15) suggested the "basis of all representation is comprised of the formal
properties of natural objects, and the pre-disposition of the human mind to arrange sensory input into meaningful wholes.” According to this view, the aim of image-making is to create equivalence rather than realism. This means that the drawing contains the properties (if only some) of the original, rather than becoming a replica of the original.

Contrary to the perceptual theory is the “Convention” theory, forwarded by Wilson and Wilson (cited in Boughton, 1985, p 15). This theory claims that all representations are largely the result of previously learned graphic conventions. Images are made by matching information obtained through direct observation against a memorised image obtained from sources such as the drawings of artists or other children with the culture.

In addition to these two opposing theories, a third has been presented. Pariser (cited in Boughton, 1985) proposed that drawing develops according to both the convention theory and the perceptual theory; all drawings composed by children are a combination of perceptual and graphic cues. As indicated by the results of a research study to identify the significance of the convention theory as opposed to the perceptual theory, Pariser (1979) found that “it was probably unproductive for the development of theory to regard drawings as either sole products of convention learned previously, or the exclusive outcomes of observation” (cited in Boughton, 1985, p. 15). Pariser (1979) asserted that perception and graphic conventions are of equal importance and influence in children’s drawings.

2.4.2 Influences on Drawing
Children are often influenced by the circumstances in which they draw. Researchers such as Clark (1994), Robertson (1987) and Lowenfeld and Brittain (1975) have investigated the effects of external influences on children’s drawings. Their results showed some significant similarities in terms of influential factors.

Clark (1994) found that influences such as personal experiences, peers, popular culture and school experience were common in the drawings completed by children in her study.
Furthermore, she identified that the family was also a significant influence. Robertson (1987) conducted a case study of her own child and her results showed that fantasy and the media were also significant influences on her child’s drawings. Wilson and Wilson (1982) likewise identified the child’s peers, family and mass media as sources of influence, commenting that the drawing environment also has authority in the completion of a drawing.

Personal experiences of individual children were identified by Clark (1994) and Robertson (1987) as influences in their drawings. The activities, interests and experiences which children engage in will become evident in their drawings due to the fact that these activities, interests and experiences reflect a child’s state of mind and personality. Content and subject matter in children’s drawings are commonly influenced by, and consequently reflect, personal experiences because they present an element of familiarity to the children during the completion of their drawings.

Peers and peer interactions will also have an influence on children’s drawings. Korzenik (cited in Clark, 1994) asserted that children learn and copy from their peers through the interactions and relationships that are formed within the school. Interactions with peers are based on having the same or similar interests, sharing secrets and doing things together (Lowenfeld and Brittain, 1975). A child’s peers become influential as he or she considers the thoughts and opinions of others and reflects upon these during drawing. Copying the work of others becomes a standard practice as the child is influenced not only by the relationships and interactions with peers, but also by observing and imitating or copying the drawings of other children.

In the same way, family interactions also have an influence on children’s drawings. Relationships and interactions that a child has with his or her family members will become evident in drawings as the child expresses personal thoughts and emotions related to family life. In children’s drawings, subject matter is commonly related to what is important to the child and may mirror the emotions of the child; how he or she thinks and feels. Fantasy was identified by Robertson (1987) as holding a powerful, emotional
significance in that it arises from the private world of children and consequently influences their drawings.

The influences outlined above are just some of the factors that have an impact on children's drawings. Specific influences relating to a child's personal predicament and life will contribute to the expressions and representations that are evident in his or her drawings.

2.4.3 Variations in Drawing Types

The depth of personal expression and graphic representation in drawings will frequently be determined and influenced by the type of drawing in which children become engaged. Several researchers have commented on this issue, including Luquet (1924, trans. 1985), a pioneer in research on children's drawings; Wilson and Wilson (1982) and contemporary researchers such as Duncum (1992) and Speck (1995). Similarities were identified within the concepts and drawing types established by these researchers. The concept of spontaneous art is addressed by all these researchers and was identified as being beneficial to the developing child.

For the child, spontaneous or unsolicited drawing has the most potential in terms of personal expression and graphic representations. It stems from the child's desire to compose and create in the same way that an artist produces artwork (Wilson and Wilson, 1982). Luquet (1924, trans. 1985) described spontaneous art, or spontaneous drawing, as a self-initiated activity in pursuit of individual interests. Perry (1992) posited that this type of drawing does not start from pre-planned aims and is therefore of more benefit to the individual child. In support of this, Speck (1995) asserted that spontaneous art is the free choice of personal activity. Duncum (1992, p. 11) argued that spontaneous drawing was based on the creation of objects in representations, fantasising through drawing, investigating visual appearances in imagery and most importantly, generating one's own images.
Despite the fact that spontaneous art is more often than not ignored, it holds much more value than any other drawing type in terms of the child's personal and developing images of the self and the world.

Speck (1995) identified “open to interpretation” drawing as another type of drawing. Luquet (1924, trans. 1985) described this type of drawing as the free or voluntary drawing where subjects were chosen by the individual child upon the request of another person, usually a teacher or parent.

Another type of drawing was identified by Luquet (1924, trans. 1985) who described the pre-set drawings which are frequently influenced by the teachers or parents of children as “directed” drawings. Wilson and Wilson (1982) refer to this drawing type as “school art” where the subject matter is frequently encouraged or pre-organised and usually depicts the child's experiences in the school environment, or follows the conventional expectations of “child art”.

The final type of drawing identified by Luquet (1924, trans. 1985) was the “to be completed” drawings. This type of drawing usually entails the simple and monotonous activity of colouring-in a copied image. These drawings are thought to offer no scope for personal expression and graphic representation and are significantly limited in their benefits for the children completing them.

The factor that distinguishes spontaneous drawings from the other identified types is that spontaneous drawings are completed for personal satisfaction, whereas the other types of drawings, the “open to interpretation” type, the “directed” type and the “to be completed” drawings are completed for the satisfaction of others.

2.5 Graphic Representation
The difference that exists between approaches to art and to other curricular areas such as reading, writing and mathematics lies in the application and proficient use of symbols. In these curriculum areas (language, mathematics), the symbols were created by others for
as Kellogg (1977, p. 143) noted, "combining lines for language and mathematics cannot be free, for symbols in mathematics and language are arbitrary and must be made according to whatever system the culture uses". When drawing, children can devise and invent their own set of symbols, their own graphic vocabulary (Lark-Horovitz, Lewis and Luca, 1973).

According to Lark-Horovitz, Lewis and Luca (1973) graphic vocabulary is "where shapes and lines are combined and modified with great versatility to represent whatever the child wishes" (p. 3). Lark-Horovitz, Lewis and Luca (1973) asserted that a graphic vocabulary is acquired through practising the drawing of objects and is influenced by the child's developmental ability in relation to his or her drawing skill. Similarly, Eng (1970, p. 105) posited that "through drawing, the child acquires a store of elementary lines and forms" which are generally used for the representation of objects in drawing. Development of a graphic vocabulary reflects a child's proficiency at inventing ways of drawing, through making appropriate modifications and arrangements of mastered forms, to represent a variety of objects and describe a range of functions and relationships. As stated by Wilson and Wilson (1977, p. 7) "nearly every image is composed from a pre-existing graphic source".

A more recent viewpoint is presented by Clement (1992) who asserted that drawing enables children to "create and control symbols". Speck (1995) referred to the use and creation of symbols as "schema" which, during drawing, can be applied as rules or formulae for further drawings. Through the creation and control of a graphic language consisting of many different schema, children have the opportunity to represent a world which is relevant to them and their lives.

Although Lark-Horovitz, Lewis and Luca (1973), Eng (1970) and Clement (1992) have defined graphic vocabulary in its practical sense, Arnheim (1989) identified two of the major underlying concepts involved in the development of a graphic vocabulary. These concepts according to Arnheim (1989, p. 16) are "specification and generalisation" which although contrary, are closely linked. They operate together within the process of
image formation and are thus essential components of a child's graphic vocabulary. This is because in producing and inventing imagery, a child must have the ability to generalise and grasp common features which are relevant to a variety of images during composure of an original drawing.

Drawing utilises all perceptual conventions of the visual kind, including standard signs and symbols which are systematically learned. Drawings should not be judged according to general criteria as each drawing will bring with it the need for additional criteria for judgement (Perry, 1992, p. 10), for as Lowenfeld and Brittain (1975, p. 26) stated, "creative work must be understood individually. We can only appreciate the significance of creative work by understanding the child and seeing his picture as part of his life". In other words, we cannot appreciate the creativity of the graphic representations in the drawing if the meaning behind it is misunderstood or ignored.

2.6 Elements of Drawings
While the elements of drawing relating to formal properties and expressive power are well established in the art world, the elements of children's drawings relate to such aspects as the content of the drawing, the expressive capacities of the drawing, the detail of the drawing and the narrative content of the drawing. These universal elements in children's drawings are modified and influenced by cultural and personal differences (Lark-Horovitz, Lewis and Luca, 1973, p. 5). Further, research has shown that gender-role further contributes to differences between children's drawings in terms of these elements. These personal and cultural differences were found to be more evident from the age of nine years and up (Lark-Horovitz, Lewis and Luca, 1973).

2.6.1 Subject matter
Early research conducted by Martin (1939, cited in Lark-Horovitz, Lewis and Luca, 1973) on the general subject matter in drawings of children from grades one to four over a three year period showed that people, houses, trains, aeroplanes, boats, automobiles, plants and animals were the most common themes expressed. In addition, other subject themes in children's drawings included games, amusements, leisure, lifestyle and wealth
(Lark-Horovitz, Lewis and Luca, 1973). Kellogg (1970) reported that the major subject themes for children's drawings included human figures, animals (dogs, horses and birds), vegetation (trees and flowers), buildings (houses) and transportation (boats, automobiles, aeroplanes, rockets and trains).

More recent research conducted by Duncum (1992) showed that the human figure was the most popular theme in the drawings of children. Other themes identified by Duncum (1992) included animals, caricatures, landscapes, buildings, ships and trains. Contemporary themes identified by Duncum (1992) included space vehicles and rockets. In a study conducted with Year Three students, Clark (1994) found that the most popular subject matter for boys in drawings was games, essentially computer games. People, animals and landscapes were other themes identified as common subject matter among the girls in Clark's (1994) study.

From the subject matter perspective, it is interesting to compare the research findings from the past with more recent research findings. Topics that have remained constant over time include human figures and people in general, plants and animals, buildings such as houses and vehicles. Although similarities in subject matter of children's drawings are evident, differences exist in the subject matter chosen by girls and boys when completing drawings.

Lark-Horovitz, Lewis and Luca (1973, p. 125) made the point that, "there are no substantial sex [gender] differences in art ability in childhood. However, there are differences in interests, content and character of the artwork of boys and girls". The authors found that these differences are likely to be due to current interests in a child's life at a particular time (Lark-Horovitz, Lewis and Luca, 1973). As children's interests generally reflect their gender identity, it may be assumed that differences will therefore become evident in drawings produced by girls and boys.

Speck (1995) drew on the work of many researchers in her article, including that of Wilson and Wilson (1982), Ballard (1912), McCarty (1924), Goodenough (1926),

Speck (1995) reported that in general, boys tended to draw more vehicles, weapons and ships, scientific aspects of life, action or movements, monsters and dinosaurs. Boys expressed more violence in their drawings and subject matter was machine oriented. In contrast, girls presented more domestic content with features such as houses, plants and flowers. Girls' drawings were more person oriented with specific detail given to aspects such as eyes, hair and clothing and they tended to illustrate more royal figures (princes and princesses) in their drawings.

McNiff (1982) conducted a study examining the gender differences evidenced in the drawings of children aged between six and eight. Eighteen hundred drawings were collected and from these it was established that girls drew more human figures and plants in their drawings, with another common theme being the weather and the seasons. Girls reportedly drew more animals than boys, however, it was noted that boys expressed more sea life and sea animals in their drawings. In addition, conflict was strongly portrayed in the drawings of boys which McNiff categorised into four areas: conflict between opponents, natural and man-made disasters, monsters and last of all, outer space conflicts. McNiff (1982) also found that the theme of power was commonly expressed by boys through the drawing of motor cycles and trucks.

McNiff's (1982) are supported by Flannery and Watson (1995) who reported that the preferences in subject matter for boys included monsters, dinosaurs, vehicles and spaceships. In contrast, girls' preferences included drawing royal figures, such as kings and queens, landscapes and domestic scenes, people and animals.

Some variation in subject matter preference of boys and girls is to be found in studies conducted by Feinburg (1977) and Tuman (1999). Feinburg (1977) found that the
themes selected by boys were more supernatural or outside normal experiences than girls' drawings where the themes were more realistic and related to everyday life situations. The inclusion of fantasy into the subject matter preferences of boys was also found by Tuman (1999).

Tuman (1999) found that drawings completed by boys will more often than not document figures in images of conflict, humour, fantasy and action whilst incorporating warriors, monsters, machines and the like into drawings. Furthermore, it was noted by Tuman (1999) that the content of a boys' drawing may reflect imaginary episodes that pervade everyday experiences. Unlike this, a more tranquil and peaceful content reflecting reality was more commonly represented in girls' drawings.

It is accepted by many researchers that children tend to conform to gender-related subjects and themes in their drawings. However, the nature and extent of these differences remains largely unknown due to limited research in the area.

2.6.2 Expressive power

As has been noted earlier, drawings produced by children are a means of personal, individual and unique expression. Expression, which is defined by Linderman (1997, p. 18) as the "process of conveying ideas, feelings and meanings through the selective use of communicative possibilities", is evident among all children's drawings. Similarly, Thomas and Silk (1990, p. 141) believe that "expression in a work of art refers to the extent to which it conveys feelings, moods or ideas". The expressive power of children's drawings needs to be considered due to its relationship to subject matter preference.

Wright (1993) suggested that the expressive qualities of drawings communicate moods such as joy, sadness or anger. She further argued that these various expressions of mood are conveyed through the careful use of colour, shape, style and composition which in combination, form visual metaphors. A common example of this identified by Wright (1993) is a flower slumping in sadness.
There has been little research conducted in relation to expression and expressive qualities in children's drawings. In terms of feelings and emotions contained within drawings, gender does appear to be of significance.

It was reported by Flannery and Watson (1995) that boys engage in drawing more violent scenes. Conversely, girls reflect more tranquil scenes in their drawings. In a comparative study conducted by Feinburg (1977) between girls' horse drawings and boys' monster drawings, it was found that beauty and tranquillity were expressive features of the girls' horse drawings, and power and fear were communicated in the boys' monster drawings.

Girls were commonly identified as drawing happy faces on people and animals in contrast to boys who incorporated aggression and violence within their drawings (Flannery and Watson, 1995; Duncum, 1992; Wilson and Wilson, 1982). The literature on children's drawings supports the idea that the expression of violence is a common feature of boys' drawings.

Drawing is a highly complex activity which not only reflects conceptual development among children, but also has significant emotional aspects associated with it. Surprisingly, these emotional and expressive aspects hidden within the world of children's drawings have been largely neglected in previous research studies.

2.6.3 **Degree of detail**

As children develop and mature, so too do their drawings which become more detailed, better proportioned and more realistic in nature (Thomas and Silk, 1990). There have been many studies conducted to investigate the use of detail by boys and girls in their drawings. Some interesting findings have been reported.

Speck (1995) argued that gender differences exist between boys and girls in relation to how they approach a drawing task. Speck (1995, p. 46) reported:
Girls are appearing to perform better than boys in relation to visual perceptual information processing, in the ability to represent the human figure, and they show a preference for using symmetry in drawing. Boys appear to have greater skills in the ability to represent perspective in drawing. Boys and girls differ by choosing to accentuate different aspects of the human figure.

In support of Speck’s view, Cox (1992) found that girls had a higher degree of fine motor skill, whereas boys demonstrated a better sense of perspective or organisation of space. Boys, therefore, used more depth in their drawings than girls who made greater use of symmetry and balance.

This concept of symmetry and balance is also touched on by Tuman (1999) who identified that boys’ action-packed asymmetrical compositions contrasted dynamically to girls’ figure-centred symmetrical drawings.

Tuman (1999) reported that boys applied more rectilinear and expressive lines in their drawings as opposed to girls. However, girls tended to be more textural in portraying features contained within their drawings. Girls were more likely to blend colours while boys were more likely to use local colouring or apply no colour at all. Furthermore, harmonious colours were more likely to be applied to drawings completed by girls whereas boys tended to make use of contrasting colours in their work.

In terms of spatial arrangements, Tuman (1999) found one significant difference. Boys were found to place their drawings all over the page, utilising optimum space. Conversely, girls showed a preference for centering their drawings.

There are obvious differences in the drawings of boys and girls. As identified by Tuman (1999), Speck (1995) and Cox (1992), symmetry, line, shape, perspective, texture, colour and spatial arrangements all appear to be approached differently as dictated by an individual’s gender.
2.6.4 Narrative content

The narrative content of children's drawings has received attention from researchers. It is important to seek the narrative elements embedded within images, whether it be a narrative in the sense of a story or a separate object, because as Duncum (1985, p. 43) pointed out "the drawings emerge as only the visible tip" of the meanings intended by the drawer. Clark (1994, p. 36) supported this notion with the comment "in speaking to children about the narrative or story which may accompany their drawings, the researcher may discover a great deal about the child who has produced the drawing".

Early research into children's drawings has provided the basis for more recent research. Luquet (1924), a pioneer in the field of drawing, conducted a study and consequently determined various drawing types exhibited by children as they mature and express narrative content in drawings. The "symbolic" type which is identified by many researchers as the initial stage in drawing development, consists of a single drawing with a continuous succession of pictures. Following on from the symbolic type is the "epinal" type where the child presents several different images in one drawing. This second type is also known as the comic strip. The third is labelled by Luquet as the "juxtaposition" type in which successive actions are added in the drawing. Details or fragments of the narrative may be randomly juxtaposed. This is then followed by the "repetition" type where certain (sometimes new) elements are portrayed several times in the one drawing.

Duncum (1992) conducted a similar study to Luquet's and found that, aside from those already identified, there was another drawing or narrative type which was common to children's drawings. This was the "super-imposed" narrative which occurred as children drew various images over each other, making it difficult to distinguish between individual representations. It must be noted that each type, as identified by Luquet (1924) and Duncum (1992), represent expressions of the maturing and developing mind of the child and frequent reversions to earlier patterns of drawing may occur.

In her study, Clark (1994) used the Duncum (1992) model of spontaneous drawing types to analyse her drawings. The model has three separate areas, consisting of
Narrative/Separate Object, Factual/Fictional, and Borrowed/Self-generated drawings. The overall results of Clark’s study showed that boys produced more narrative drawings than girls. Clark noted that boys were more likely to produce cartoon drawings. This is further supported by Wilson and Wilson (1982) who asserted that the mass media has a greater influence on boys - a possible explanation for this finding (cited in Clark, 1994).

Research in the area of narrative elements embedded in children’s drawings has largely been ignored. This may be due to the fact that narrative content is not always obvious, however, more research in the area is needed to establish the significance of story-telling in children’s drawings.

2.7 Curricular Recommendations

Drawing is the most important component of a visual arts program in the primary school curriculum because as Clement (1992, p.121) stated “drawing remains the essential core activity in art and design. Nowadays, the value of drawing as a cross-curricular activity is widely recognised; it supports and extends learning in other areas”. Further support for this idea may be found in the words of Lark-Horovitz, Lewis and Luca (1973, p. 311) who asserted that “bringing art into all areas of the curriculum is not introducing alien material; it is calling attention to the relationships that exist in nature and society” and to the connections between the curriculum areas.

Forms of visual communication, such as drawings, offer support for learning in other curriculum areas. In support of this instrumental purpose, Clement (1992, p. 128) wrote:

These forms [of drawings] range from pictorial maps, to serial stories, and include modes of representation from literal and objective images to symbols, diagrams and abstractions. The common denominator is communication.

According to Clement (1992) different kinds of drawings can and should be applied in the areas of science and technology to facilitate children’s inquiries and investigations. Drawings in English could represent experiences or stories. Drawings in mathematics
could represent any number of mathematical concepts, graphs, charts and so on. Clement (1992) strongly believed that drawing is central to learning. Through the medium of drawing, children are better able to communicate and understand information and ideas that are presented to them.

The communicative function of drawing (art) is also prominent in the Curriculum Framework (1998) where one of the Arts Learning Outcomes relates to "communicating arts ideas". The Curriculum Framework stated that "students generate arts works [drawings] that communicate ideas by creating, interpreting, exploring, developing and presenting ideas in and through the arts" (1998, p. 10). The Curriculum Framework further stated that original ideas are incorporated in arts works and images are transformed and explored through experimentation. Personal experiences and observation, imagination and emotions impact on the development of drawing ideas which are conveyed using a range of creative processes and communicated for a variety of purposes (Curriculum Council, 1998). It is important that all of these factors are taken into account in the visual arts, or more specifically, in the drawing program, for the benefit of students and their learning.

Although writers such as Clement (1992) and Lark-Horovitz, Lewis and Luca (1973) have promoted the use of drawing as an aid to learning content in other curriculum areas, the practice does not have universal support. Eisner (1972) was opposed to the use of art as "the handmaiden of concept formation" (p. 45). Eisner promoted the "essential" nature and purpose of art as opposed to its use as a learning tool.

All drawing and art programs should provide opportunities for the completion of a range of arts works and drawings that encourage the ongoing development of artistic skill. Teachers should make use of a variety of materials suited to the developmental level of their students and include a range of subject matter or themes in drawing. Furthermore, children should be given the opportunities to engage in artistic production and be exposed to sufficient perceptual experiences through the immersion in art (Linderman, 1997; Arts and Crafts Syllabus K - 7, Ministry of Education, no date).
2.8 Conclusion

The development of both gender-role and drawing skills in children have been discussed to provide insights into the relevant areas encompassed by this study. Gender-role in general education, types of drawings produced by children and the influences that impact upon these drawings have been outlined in brief. Differences evidenced in boys and girls drawings have been delineated through reference to the work of significant researchers who have conducted studies in this area. The development of children’s graphic vocabulary and consequent representations in drawing have also been discussed. Finally, the significance and place of drawing within the curriculum was briefly reviewed.
CHAPTER 3
Methods of Research

3.1 Overview of Chapter
This chapter describes the methods applied in completing the research study. A description of the relevant research techniques is provided and followed with an overview of the data analysis. Also included is a brief discussion concerning the pilot study undertaken and its results. A more detailed discussion is then presented to provide information about the participants involved and the procedures followed. Issues related to validity, reliability and specific ethical considerations have also been discussed.

3.2 Research Methods
The selection of appropriate methods for gathering and analysing data for the research involved consideration of a number of research paradigms. The analysis of children's drawings required the interpretation and reporting of the content of the drawings. Therefore, the most appropriate paradigm was found to be that of qualitative research where the focus is primarily based on understanding through description.

In the research study, the qualitative process of "naturalistic inquiry" described by Patton (1990, p. 40) as "studying real world situations as they unfold naturally; non-manipulative, unobtrusive and non-controlling" was employed. As well as this, the process of "inductive analysis" was applied to the data which were collected. The inductive approach requires the researcher to develop a hunch about their particular study while in the field and then to systematically look for confirming or dis-confirming evidence relating to that hunch (Angus, 1998). Following a similar line, Patton (1990, p. 40) defined inductive analysis as the "immersion in the details and specifics of the data to
discover the important categories, dimensions and relationships" that exist in the data. The categories or criteria for inductive analysis in this research study included (a) subject matter of drawings, (b) expressive power of drawings, (c) detail of drawings and (d) the narrative content of drawings.

In addition to completing a drawing, the students were required to write a response to the statement "My drawing shows ..." on a separate piece of paper. The responses received were used to substantiate any evidence found in the analysis of the drawings. The purpose of this was to clarify the meanings intended by children and to provide them with the opportunity to make further comments regarding their drawings. The children's written comments provided further insights during the analysis of the drawings.

3.3 Data analysis

The students' drawings were used primarily as the data for the research study. Through the process of inductive analysis, the children's drawings were examined according to:

1. Subject Matter. What was included in the drawing? Categories used in the analytical process included; human figures, animals, caricatures, vegetation, buildings and transportation.

2. Expressive Power. The overall impression and flavour of the drawing. How rich was the drawing in terms of imagination and emotion, use of medium, fluency of ideas and eloquence?

3. Detail. Application of colour, use of line, form, shape and perspective. How much detail was included in the drawing?

4. Narrative Content. Separate object/narrative aspects. Did the drawing represent objects or did it tell a story? Did the objects conceal a narrative?

Using these criteria, the subject matter of the children's drawings was identified and described. The subject matter was organised into one of the pre-defined standard categories and comments were made on any significant features.
A rating scale was used to analyse the degree of detail and expressive power in the drawings. The rating scales were designed for the flexible analysis of the children's drawings. Through the use of a numerical system the degree to which a specific criterion was achieved was approximated. The scales progressed from 1, which indicated that the drawing had little expressive power or little detail, to 5, which indicated that a drawing was very expressive and detailed.

The narrative content of the drawings was also identified and described. Comments and observations were recorded which identified the drawing as either a narrative or a separate object (non-narrative drawing).

The responses given in the written statements were linked with the analysis of the drawings to provide a more complete portrait of the degree of achievement of the listed criteria. Any significant comments made by the children were used in the discussion of the results. Drawing analysis and written statement pro-formas are located in Appendix A.

3.4 Pilot study
A pilot study was conducted to examine the effectiveness and suitability of the design and procedures. The suitability of the materials used (textas, cartridge paper, saucepan) was trialed and timing was tested to identify whether the students had been given sufficient time to complete their drawings and a written statement. The effectiveness of the written statements was evaluated in terms of (a) appropriateness, and (b) the suitability of the pro-forma for eliciting the written statements. The drawing analysis pro-forma was also tested through the pilot study to determine its overall effectiveness in analysing the drawings according to the specified criteria. Data analysis procedures were tested by seeking the expert opinion of two visual arts educators (one male, one female). Both of the experts had experience as primary school visual arts teachers and teaching at a tertiary level.
Permission was granted by the Principal and classroom teacher to conduct the pilot study in a metropolitan government primary school with five students from Year 6 (3 boys, 2 girls). The students were all aged between 10 and 11 years. The students were seated on tables around the saucepan (which was on a table in the middle of the room) to ensure that each student had a clear and uninterrupted view. The time allocated to conduct this pilot study was 40 minutes. The purpose of the exercise was explained to the students prior to the commencement of drawing. A clear outline of what was required of the students, in terms of the drawings and the written statements, was given by the researcher.

3.4.1 Pilot study - results
The results from the pilot study raised several significant issues concerning both the design of the study and the drawing analysis pro-forma. It was found that the materials enabled the students to satisfactorily complete their drawings with the time allocation.

The analysis pro-forma raised some difficulties for the assessors (experts) in its application and use. Sections (a) and (d) relating to the subject matter and the narrative content of drawings proved to be adequate in obtaining the relevant information. However, sections (b) and (c) relating to the expressive power and the degree of detail aspects of the drawings raised some difficulties. The rating scales designed for these criteria were appropriate for their intended purpose, however, judgements varied considerably when deciding upon ratings for individual drawings. This was remedied through the development of an instructional letter for the assessors, which clarified the analysis pro-forma by outlining specific definitions and examples relating to each of the four criteria.

The written statements were found to satisfactorily provide information to assist in the analysis of the drawings. However, a need was identified for the inclusion of additional details concerning each child's date of birth to determine their exact age. A question asking whether or not the drawing was finished was also included.
3.5 **The main study**

Having made the minor adjustments outlined above, data was collected on Wednesday, May 3rd 2000. Approval to conduct the study had been obtained from the principal of the school and the classroom teacher.

3.5.1 **Participants**

The participants of the study were the members of a Year 6/7 class in a primary school located within the Perth northern metropolitan area. The class consisted of nineteen students with a distribution of eleven boys and eight girls. Children in this Year 6/7 level were aged between eleven and thirteen years.

3.5.2 **Procedure**

In collecting the data, a clear set of procedures were outlined and followed. The drawing session, which was conducted by the researcher, took between 40 and 45 minutes. This time-frame included drawing time, completion of the written statement, explanations, questions and the distribution of materials. The written statements were completed by the students immediately after they finished their drawings. The students spent between 5 and 10 minutes completing the statement “My drawing shows ...”.

The Year 6/7 students completed an observational drawing of a medium-sized, stainless steel saucepan during the forty minute drawing session. Two saucepans were placed on a table in the centre of a classroom and the students took their seats around this central table. Each student had a clear view of a saucepan and was offered the opportunity to inspect it closely - “observational drawings are frequently more accurate if students closely examine the objects that they are to draw” (Wilson, Hurwitz and Wilson, 1987, p. 90). Having completed an observational drawing that recorded (in most cases) the essential features of a saucepan, the students then engaged in a visual transformation task - transforming the saucepan into another image.
The researcher began by distributing the appropriate materials to each student (an A4 piece of cartridge paper and a packet of coloured textas). Prior to the commencement of the drawing task, the researcher gave the following instructions:

I want you to do two things on the piece of paper you have in front of you. First, I would like you to draw this saucepan. Try to draw the best saucepan you can. Then, after you have drawn the saucepan, I want you to turn it into something else. It is your choice what you turn your saucepan into. I am interested in all the pictures, no matter what they are about. So draw whatever you choose, but do it in your own way. You have 30 minutes to complete your drawing. Are there any questions? When you have completed your drawing, you will be given a piece of paper which says ‘My drawing shows ...’. I want you to answer this in any way that you can. You can write down anything that you think is important. Are there any questions?

The drawing session commenced and the researcher observed the students, taking note of the seating arrangements as well as the interactions and conversations that were occurring between the students. As the students completed their drawings and written statements, the researcher collected and marked them with a label, identifying them as having been produced by a boy or girl. Nineteen drawings were collected, eleven from boys and eight from girls.

3.6 Validity

Validity for the research study was assured in terms of data collection and analysis. During the drawing session, observations of the students and anecdotal records were kept. These observations and records indicated the types of interactions that occurred between the students and the conversations that they became involved in. Close observation and the keeping of anecdotal records provided evidence that (a) each child completed the drawing and transformation tasks unaided and without influence from other class members and, (b) the processes followed by particular children.
These anecdotal records, the drawings produced by the children and their written statements, all made contributions to the overall validity of this research study because they represented different types of data. The use of specific criteria with which the drawings produced by the students were analysed further contributed to the validity of the research study. The identified criteria ensured that all drawings were analysed according to common aspects only.

3.7 Reliability

In ensuring the reliability of the results obtained from the study, two expert opinions were sought for the analysis of the drawings. These two experts, one male and one female, are trained as primary teachers and have had considerable experience within the primary school environment. Both experts are currently working as independent tertiary educators within the field of visual arts education. The experts displayed only some minor differences in the ratings given for the expressive power and degree of detail components of the analysis. This may have resulted from varying interpretations of these two specific criteria. Despite this, many of the drawings received consistently similar or identical ratings from the two experts and the researcher (which were then averaged), ensuring reliability in the overall results.

Full documentation of the research procedures, the instruments used and the analysis process ensures reliability because the study could be readily replicated.

3.8 Ethical considerations

Consent was obtained from the school principal through an official letter of request (Appendix B). This letter outlined specific issues relating to the research study including assured confidentiality of the participating students, classroom teacher, the principal and the school. The letter further described the purpose of the research and provided assurance that the data collected would be used only for the agreed purpose. Verbal and written consent was also sought and obtained from the Year 6/7 teacher, each student and the children's parents. All parties involved were made aware that confidentiality and anonymity were to be maintained at all times and that neither the students or any other
party involved would be identified by anything other than a number (1, 2, 3, ...) and letter ('G' for girl, 'B' for boy).

3.9 Conclusion

This chapter presented a discussion of the design and conduct of this study. The methods for data collection and analysis were described. The pilot study and the main study were outlined and validity and reliability measures concerning the study were stated.
CHAPTER 4
Presentation of Data

4.1 Overview of Chapter
The results of this research study are submitted in this chapter. The information is presented in the form of frequency tables and bar graphs and is related to each specific research question. To assist in the analytical process the criteria of subject matter, expressive power, detail and the narrative elements were employed.

4.2 Subject matter
The research question relating to this area of the research study is: Does gender-role influence the subject matter of children's graphic representations?

The information regarding the students' choices of subject matter has been organised into two formats. A frequency table, recorded as percentages, organises the subject matter drawn by the boys and girls into the various standard categories. A following bar graph illustrates this data in a visual sense so that clear comparisons may be made.

The data in Table 1 and Figure 2 indicate that there are differences in choice of subject matter between the boys' drawings and the girls' drawings. The most noticeable difference lies with the category area of caricature with fifty percent of boys drawing a caricature, whereas only twelve and a half percent of girls attempted this representational strategy.
Table 1. Subject matter in drawings

<table>
<thead>
<tr>
<th>Subject Matter</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human figures</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Animals</td>
<td>20%</td>
<td>50%</td>
</tr>
<tr>
<td>Caricatures</td>
<td>50%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Vegetation</td>
<td>-</td>
<td>12.5%</td>
</tr>
<tr>
<td>Buildings</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport</td>
<td>10%</td>
<td>-</td>
</tr>
</tbody>
</table>

Subject Matter

![Graph showing percentage of students in different categories]

Figure 2. Subject matter in drawings.

It is interesting to note that the only girl (G11) who engaged in this type of drawing, borrowed the caricature from the media. More specifically, G11 drew the “Tinman” (see below), from the “Wizard of Oz”. In her written statement she commented that this was because “it was the first thing that came to my mind”.

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Conversely, as far as one can tell, the caricatures drawn by the boys did not reflect borrowed ideas from influences such as the media, but rather, are individual, original drawings that reflect the individual's unique interests.

Animals were a popular subject matter selected by girls. Forty percent of girls depicted animals in their drawings whereas only twenty percent of boys selected this subject matter. The girls G7, G8, G9 and G10 all engaged in the transformation of the saucepan into an animal.
G7 identified her drawing as a "kookaburra with a handle on his head"; G8 produced a camel with three humps named Jessie; G9 illustrated "a green frog leaping and trying to catch the fly"; and G10 drew "a dog jumping through the air at a tennis ball with a red collar and a tongue hanging out". The four girls were seated next to each other during the drawing session. This may explain why all four produced drawings of an animal - peer interaction may have influenced their choice of subject matter.

Two boys produced drawings of an animal, one was identified as a crab and one as a yellow duck.

The two boys were not sitting near each other and had little interaction with the peers around them. The reason for the drawing produced by B6 is identified in his written statement, "My drawing shows a crab with back legs so it can walk on land. It's the only thing I could think of what no one else had done". It is interesting to note that B16 did not actually transform the saucepan into another image. He merely added the body of a duck to give it a different appearance.

There was a near equal distribution of boys and girls who opted to complete a drawing of the human figure. However, there were some difficulties in placing individual
drawings into categories. Most of the children completed transformations involving more than one subject matter category.

To illustrate this, Table 2 was formulated.

Table 2 shows the drawings produced by boys and girls that depict more than one subject matter category. More specifically, drawings that incorporate the human figure, or parts there of as well as another subject.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Figures</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Animals</td>
<td>20%</td>
<td>-</td>
</tr>
<tr>
<td>Caricatures</td>
<td>40%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Vegetation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Buildings</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transportation</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A good example of this composite subject matter is a drawing produced by B1. In his written statement, B1 identifies the drawing as a "pig pot with boxer shorts and freckles".

Boxer shorts are common to humans and not pigs. Furthermore, the drawing itself shows clearly defined human arms and legs. The only feature about the drawing that
does not seem human-like is the pig snout. Despite these features, the drawing is more human, although it shows features belonging to animals.

Eighty percent of boys incorporated human characteristics into their drawings compared with thirty seven and a half percent of girls. This may be because of the large number of caricatures produced by the boys. Facial features such as eyes, lips, noses, arms with hands and fingers and legs (with illustrated knees), are some of the human characteristics included in the drawings that also depict features of other subject matter categories.

4.3 Expressive power

The research question relating to this area of the research study is: To what degree does gender-role influence the expressive capacities of children’s graphic representations?

Figure 3 illustrates the level of expressive power demonstrated by the children in their drawings. The information has been separated to show the differences between the drawings of boys and girls. For the purpose of analysis, expressive power is defined as the “overall impression and flavour of the drawing. How rich is the drawing in terms of imagination, use of medium, fluency of ideas, emotions and eloquence?” Drawings were given a rating of 1 for a low achievement in expressive power and a rating of 5 for a high achievement. In addition to the researcher’s judgement, two expert opinions were obtained on the expressive power of the drawings. It is interesting to note that the ratings given for each drawing were more often than not similar and fell within one point of each other. The ratings were combined and averaged to derive an overall rating for each drawing.
Figure 3 shows that ratings for boys fell into the extremes of the scale, whereas for the girls, ratings were concentrated around the mid-point of the scores. The girls were rated between the 2 and the 4 and the boys were rated between the 3 and the 4.5 (excluding the extreme) indicating that the boys' drawings were more expressive.

The only boy (B18) to receive a rating below 3, received a rating of 1. It was identified in his written statement that his drawing was "of [a] pot". There were no attempts at a transformation. Comments made by the experts were, "obscure - too open" and "simplistic".

At the other end of the expressive power scale, forty percent of boys received a rating of 4.5. All drawings rated 4.5 were imaginative, even though there was the repeated use of a knife being stabbed through a head in two of the drawings. Emotions were clearly
portrayed in the drawings produced by B2 and B5. Rage, hate, death and pain were communicated by the facial expressions and the eyes of the caricatures. The flames emerging from the sides of the saucepan in B2 also added to a highly expressive effect.

Some highly expressive components were included in B14's and B15's drawings which were titled "mechanical warrior" and the front tip of an "RAAF war plane". As one of the experts commented, "the metallic theme flows well from the initial idea of a metal pot". The imaginative ideas within the drawings reflect the cold, hard nature of the original subject matter. All four drawings are highly developed in terms of expressive power because of the elaboration of detail.

In comparison, only one girl achieved a rating of 4. Most of the girls were given a rating of 3.5. The drawings produced at this rating were of significantly lesser quality in terms of expressive power and showed less emotion and imagination than those of the boys.
Comments made by the experts in relation to these drawings included, "humorous drawing", "a sense of fun", "strong reaction [to green and red frog]" and "strong and effective drawing". The objective nature of the original subject matter may have limited the expressive possibilities for girls in their transformational drawings.

Three of the five caricatures drawn by the boys reflect an aspect of violence. One boy, B2, wrote that his drawing illustrated a "person getting stabbed in the head"; it was titled "Psycho Boy". Another, B5, made no comment about the violence depicted in his drawing, although his character - "Super Pot from the land of Potty" - had a knife stabbed into its head with several slashes over its body and blood gushing out. Although there is no obvious violence in the drawing itself, B15 identifies his drawing as a "mechanical warrior". The term "warrior", as identified by B15, brings with it an image of war, fighting and ultimately, violence.
A robot with its controls, drawn by B12 and B19’s drawing of a walking, talking teapot reflect no aspects of violence and appear to be fairly placid in nature. No violence was identified in the written statement or depicted in the drawing produced by G11 which also developed a mechanical theme.

These drawings illustrate the obvious difference between boys and girls when it comes to choice of subject matter. Boys show more interest in drawing caricatures as opposed to girls and boys exhibit a great deal more violence in their drawings as well.

Generally, the results show that the boys exhibited a higher degree of expressive power than the girls within their drawings.

4.4 Degree of detail
The research question relating to this area of the research study is: To what degree does gender-role influence the detail of children’s graphic representations?

Figure 4 illustrates the degree of detail that was achieved by the children. In this study, detail of a drawing referred to aspects including colour, line, shape and perspective. As with the expressive component, the drawings were again rated by the visual arts education experts and the researcher. A rating of 1 was allocated to a drawing with little detail and a rating of 5 was awarded to a drawing high in detail. Again, the ratings awarded were averaged to derive an overall rating.
Figure 4 illustrates that in terms of the inclusion of detail, there is a lower spread of achievement in the girls' drawings as opposed to a higher spread in the boys' drawings. Excluding the extreme ratings, the bar graph shows that the boys achieved generally higher ratings than the girls in relation to composite detail. The boys drawings were rated between 3 and 4, whereas the girls were rated between 2.5 and 3.5.

"Psycho boy" (B5), was one of three drawings given a rating of 4. Comments provided by the experts included "carefully drawn, emphasis placed on tattoos and bloody details. Some use of perspective" and "form, colour, perspective - very good. Construction - excellent". The drawing itself was very busy with many lines to create an overall detailed image. The colour applied complemented the content of the drawing.

The only girl (G7) to receive a rating of 4 on her drawing drew a kookaburra which demonstrated good use of line to show depth in the pot and part of the bird's body. One
of the experts commented that the shape and colours employed support the subject and “cross-hatching, feathers shaded, strongly drawn shape and arrangement of pot head maturely handled”.

There was an equal percentage of boys and girls who were awarded a rating of 3.5. This average rating for the boys and slightly higher than average rating for the girls was awarded for “shading, details of facial features, shaped legs”, use of “some perspective”, use of “shading and solid areas of drawing to denote form” and “confident use of medium” throughout the drawings. Overall, boys tended to use more detail in their drawings as opposed to the girls.

4.5 **Expressive power and degree of detail**

Although separate criteria, it is interesting to examine the results of expressive power in comparison to the degree of detail in relation to gender. The relationship between these two areas is such that one may directly or indirectly have an influence on the achievement of the other. Figures 5 and 6 provide the combined results of expressive power and degree of detail in bar graphs.
Expressive Power and Degree of Detail - Boys

![Bar chart showing percentage of boys' expressive power and degree of detail by rating.]

From these two figures it can be seen that the spread of achievement is much larger for boys as opposed to the girls in terms of expressive power and detail in drawings. Furthermore, excluding the extremes, ratings for the boys drawings are remarkably consistent in their spread between 3 and 4.5.

The overall spread of achievement is much less for the girls. Ratings allocated for drawings in relation to these two areas are concentrated around the 3 to the 3.5.
4.6 **Narrative content**

The research question relating to this area of the research study is: Does gender-role influence the narrative content of children’s graphic representations?

The narrative content of a student’s drawing refers to the identification of narrative elements of a story. Drawings may simply represent a single object which does not have a story associated with it, however, a single object, or a group of objects, may also tell a story.

Table 3 illustrates the number of boys and girls who produced a drawing containing a narrative and those who produced a separate object.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative</td>
<td>45%</td>
<td>37%</td>
</tr>
<tr>
<td>Separate Object</td>
<td>55%</td>
<td>63%</td>
</tr>
</tbody>
</table>

In terms of narratives, forty five percent of boys produced a drawing that told a story. This was identified through the written statements and through careful analysis of the drawings. For example, B12 wrote “A robot being controlled by a controller” implying that the robot is being controlled by the control unit which is evident in the lower right hand side of the drawing. By establishing a relationship between two components, a narrative is implied.
Another boy who produced a drawing that depicted a narrative was B19. Again, this is clearly evident in the written statement he produced, “My drawing shows a teapot that can move and talk. He has jet packs on his feet so he can fly”. The degree of animation in the drawing and the implied movement suggest that a narrative is embedded in the drawing. In this case, the written statement confirms the narrative content.

Only thirty seven percent of girls incorporated a narrative element in their drawings. The girls, G9 and G10, both produced a drawing containing a narrative, or story. One (G9) identified her drawing as “a green frog leaping and trying to catch the fly”. Similarly, G10 stated that her drawing showed “a dog jumping through the air at a tennis ball with a red collar and tongue hanging out”.

It is noteworthy that girls produced more separate object narratives in their drawings than the boys. For example, the five girls who produced a separate object drew a flower kettle, a clown face, a kookaburra, a camel and a man with a big nose.
Generally, the results have shown that boys produced more drawings with a narrative element and girls produced more drawings containing objects without a narrative.

4.7 Conclusion
This chapter has presented the results of the research study in relation to each of the four research questions which investigated the influence of gender-role on (a) choice of subject matter, (b) expressive power, (c) degree of detail, and (d) narrative elements within drawings. The results reveal that differences do exist between boys and girls in terms of the four identified criteria. In relation to subject matter, the results indicate that boys prefer to produce graphic representations depicting caricatures and girls prefer to use animals as the subject matter for their drawings. Expressive power and detail are two criteria which demonstrated that differences exist between boys and girls. Boys tended to have a higher degree of expressive power in their drawings through the use of caricature as a drawing device and they also included more detail. The boys' graphic representations tended to contain more narrative elements as evidenced by the drawings and the written statements, whereas the girls engaged in more representations of separate objects which did not appear to contain a narrative element.
subject theme to be chosen by the children, but that animals and caricatures were more consistently represented.

It is noticeable however, that sixty percent of the children's drawings incorporated some facet of the human figure but that overall, the drawings belonged to another subject matter category. For example, B5 drew a caricature stemming from personal, imaginative ideas, yet the caricature incorporated some human features such as eyes, arms with clearly defined muscles and so on. It is identified as a caricature because of the specific elements such as a green body, a cape and bulging eyes. The inclusion of human features may be to complete the drawing in the visual sense to achieve meaning, balance or harmony, or alternatively, these human features may have been included because they are familiar.

It is interesting to note the strange combinations of subject matter that was produced by the boys. Whereas the girls who participated in this study produced fairly limited and traditional drawings depicting the standard categories of subject matter, the boys tended to produce a combination of more than one subject matter category. For example, the creativity in subject matter selection is evident in the drawing produced by B1. This drawing combines the two traditional categories of animals and human figures. The pig's head has a seemingly human-like figure attached to it in a strangely comfortable fashion. This creative and imaginative portrayal of subject matter is found only in the boys' drawings and is not reported in the literature.

Drawings completed by boys and drawings completed by girls also exhibit differences with regard to the selection of subject matter. The results of this study have found that fifty percent of boys tended to use caricatures as a drawing device. Caricature, coming from the Italian *caricatura* meaning a likeness which has been deliberately exaggerated, is usually employed by the drawer to imply some degree of fantasy and to make comment on whatever is going on at the time (Lucie-Smith, 1981). Boys' use of caricature is an unexpected result as much of the literature identifies categories such as vehicles, monsters, dinosaurs and spaceships (Speck, 1995; Flannery and Watson, 1995;
Tuman, 1999) as being favoured by boys. Duncum (1992) was the only researcher to report caricatures as a popular subject theme in children’s graphic representations. Interestingly, one of the girls produced a caricature that was borrowed from popular culture. This type of influence was reported by Wilson and Wilson (1982) to have a significant impact on the work of boys only and not that of girls. The drawing of the Tinman (G11) with his axe may contradict the Wilson’s hypothesis.

This study has found that the preferred subject for girls to draw is animals with forty percent of girls producing a drawing illustrating this type of standard subject matter. Despite the fact that most of the girls were seated next to each other during the drawing session (which may have directly or indirectly influenced their choice of subject matter), these findings are similar to those identified in the literature. Flannery and Watson (1995), Clark (1994) and McNiff (1982) all noted that the subject category of animals was one of the more popular subject categories represented in girls’ drawings. The animals they drew in response to the transformational task may be mapped onto actual or schematic animals. Wilson and Wilson’s (1982) convention theory, which suggests that all representations are the results of previously learned graphic conventions, may explain the selection of animals in girls’ drawings.

5.3 Expressive power

Expressive power in this research study was defined as the “overall impression and flavour of the drawing. How rich is the drawing in terms of imagination, use of medium, fluency of ideas, emotions and eloquence?”. The results of this study have shown that the graphic representations completed by boys have a generally higher expressive power than the graphic representations completed by girls. To a higher degree, boys were found to use their drawings to communicate moods and feelings, and to convey ideas related to hate, pain and violence.

It was reported by Flannery and Watson (1995) that boys tend to depict more violence and violent scenes in their drawings. This is consistent with the findings of this research study which found that boys were involved in the representation of violence in their
drawings. It was identified by Duncum (1992) and Wilson and Wilson (1982) that violence is commonly illustrated in the graphic representations produced by boys.

The graphic representations produced by the girls depicted scenes such as a running dog, a kookaburra, a man with a big nose and a smiling face. These drawings may be described as straightforward with no apparent negative meanings. This parallels the findings presented by Feinburg (1977) and Flannery and Watson (1995) who all established that girls are more likely to produce drawings containing beauty and tranquillity with images of happy subjects.

Absent from the literature is commentary on the degree of imagination evident in the children's drawings. The literature suggests that boys tend to include more vibrant emotions in their drawings, but the inclusion of imaginative aspects within the drawings has been ignored. The results of this research study have found that boys produce graphic representations which are higher in imaginative content as opposed to the graphic representations produced by girls. The boys of this study produced caricatures of alien creatures, technological machines, scientific images, animals with human characteristics and human figures with animal characteristics. It is identified by Lucie-Smith (1981) that caricatures are used to depict a degree of seriousness and have an emotional impact on the viewer as well as containing the traditional aspect of humour.

The diversity and range of imagination and emotion evidenced in the boys' drawings is greater than in the girls' drawings. Most of the girls engaged in drawings of animals, which may have limited their creative and imaginative capacities. The production of somewhat placid drawings also resulted in girls receiving lower ratings for the expressive power component.

5.4 Degree of detail
Children's graphic representations become more detailed, better proportioned and more realistic in nature as they develop and mature (Thomas and Silk, 1990). In addition to this maturational factor, the literature reports some interesting findings with regard to the
graphic representations produced by boys and girls. Large differences have been identified between the degree of detail produced by boys and by girls in their drawings. The results of this study show agreement with some of these findings.

It was found in this study that a higher degree of detail was included in the graphic representations produced by boys. That is, they produced drawings that were more developed in use of line, shape and perspective and the application of colour was more accentuated. A similar view was presented by Tuman (1999), Speck (1995) and Cox (1992) who reported that boys have a greater ability to represent perspective in their drawings. Boys have a better sense of spatial organisation in their graphic representations. Many of the drawings produced by the boys of this study illustrated this.

Tuman (1999) reported that boys made use of more rectilinear and expressive lines within their drawings while also constructing drawings that were asymmetrical in composition. There is a congruency between these findings and the findings illustrated by this research study. While generalisations should be avoided, it seems that the overall construction of the boys' drawings illustrated expressive and textural lines, original and unique form and shape that were integral parts of the complete drawings.

On the other hand, several of the graphic representations produced by the girls lacked many of these elements. The girls of this study produced drawings that were simple which may have limited the necessity to add detail within their drawings, or provided fewer opportunities to use detail.

The drawings produced by the girls in this study tended to be located in a central position on the page and were moderately small in size. The boys made optimum use of space in their drawings with many using the entire page. This is identical to the findings reported by Tuman (1999) who identified that girls show a preference for centering their drawings while boys prefer to have their drawings all over the page.
It was identified by Tuman (1999) that girls tended to be more textural in portraying features contained within their drawings and they were more likely to blend colours as opposed to boys who used limited colours in their drawings. The latter statement is supported by the findings of this research study. Most of the boys applied a limited selection of colour to their drawings, however, the colour choices accentuated the subject of the drawing and therefore added to the overall quality of the drawing. Tuman's (1999) finding that girls tended to be more textured in their drawings was not supported by the results of this study. Several of the girls applied colour to their drawings in what appeared to be a random fashion resulting in drawings that lacked in overall visual appeal.

5.5 Narrative Content

Children's graphic representation are often more than just drawings. It is widely recognised by researchers that children's graphic representations often have a narrative element hidden within them. For the purposes of research, it is important to ascertain the meanings embedded in children's drawings in their entireties including the narrative content as well as the common elements contained within all graphic representations.

The literature reports several findings concerning the narrative elements contained within drawings. Clark (1994) used the Duncum (1992) model of spontaneous drawing types to analyse the narrative content of children's drawings. Her results showed that boys produced more narrative drawings than girls. This is identical with the results of this research study. Boys tended to incorporate narrative elements in their drawings which was evidenced through the drawings and through their written statements. The statements told a story which supported the content of the drawings rather than purely identifying it as a separate (non-narrative) object.

Clark (1994) also found that boys were more likely to produce drawings of cartoons. The findings of this research study have illustrated that boys chose caricature as a representational device. Both of these drawing types (cartoon and caricature), similar as
they are, provide optimal opportunity to incorporate a creative narrative within the representation.

The literature does not appear to recognise findings regarding separate objects as narratives. The findings of this study have illustrated that girls tend to produce more separate object drawings as opposed to producing drawings with a hidden or obvious narrative element. It must acknowledged that the choice of subject matter may influence the narrative content of the complete drawing.

Generally, the results of this research study have, to some degree, been congruent with those identified by the literature. However, the results of this research cannot be sufficiently substantiated due to the lack of research in the area and due to the small scale of this study.

5.6 Conclusion
This chapter made reference to the literature covered in Chapter 2, linking it with the findings of this research study. Comments were made on the topics associated with each of the identified research questions involving the four elements of drawings (subject matter, expressive power, degree of detail, narrative content).

The differences that have been identified between the boys’ and girls’ graphic representations in terms of subject matter, expressive capacities, detail and narrative content may be consequential and may be the result of other unidentified influences. However, most of the findings of this research study are congruent with the findings reported in the literature illustrating that gender-role does have an influence on the graphic representations produced by children.
CHAPTER 6
Conclusion and Recommendations

6.1 Overview of Chapter
This brief chapter outlines the limitations and implications associated with this study and offers recommendations for additional research related to the area of children's graphic representations. A review of the methods applied in this study is undertaken to provide a further check on the validity of the research findings.

6.2 Limitations
The spontaneity of the drawings produced by the children under the given circumstances may be limited as they were produced on the request of the researcher in a research situation. However, the visual transformation task provided the students with the opportunity to transform their drawings into anything they desired as a result of their personal experiences, feelings, emotions and imagination. Although the children produced drawings in a structured situation, they were also provided with an opportunity to exercise free choice.

A single drawing was collected from the students, leaving a degree of uncertainty about the validity of the information gathered. A child may have produced a completely different drawing if given a second opportunity to complete the task. It must be acknowledged that because of the small number of participants (producing only one drawing), and an uneven balance of boys and girls, generalisations from the data are not possible.

Because qualitative research is subjective and open to interpretation, the reader of the results gathered from this study may arrive at different conclusions than those arrived at
by the researcher. The extent to which this happens is largely dependent on the clarity of
the descriptions and accounts provided in the analysis. The written statements were
included in the research design to minimise this problem. Each child, in disclosing
further information about his or her drawing, supported the conclusions made in the
analysis.

6.3 Implications of the Research
The findings of this research study has considerable implications for development of art
and drawing within the classroom, as well as in other curriculum areas. If teachers are
aware of the strengths and shortcomings of the children in their classes in terms of
drawing ability, then they will be better able to make informed decisions regarding their
approach to the teaching of this important area.

By being aware of the types of images presented in children’s drawings, teachers can
reflect on the children’s interests and use it to prepare programs of work which take
account of these interests. Hidden meanings contained within drawings may
communicate current issues in the child’s life, significant feelings, moods, problems or
concepts of the self which may become apparent to the teacher if they use the drawings
as a window to the individual child.

Having an understanding of the differences that exist between boys’ and girls’ drawings,
will assist teachers in the encouragement and development of confidence and creative
skills in both genders. In terms of art and, more specifically drawing, an understanding
of gender issues can assist teachers in providing appropriate stimulation to ensure
confidence through self expression. If the teacher, in acting upon this knowledge, can
create an environment where failure and humiliation is not something that is feared by
students, then they may begin to become more confident in their efforts in art and in
drawing.
6.4 **Recommendations for additional Research**

This research study opened many avenues for additional research. Further studies could stem from any single aspect of this research study, possibly leading into other areas concerning children's graphic representations.

The accuracy of the results obtained was identified as one of the limitations of this study. To overcome this, the study could be repeated on a larger scale, incorporating and investigating the results of many participants. For example, including between 50 and 100 participants in the study. It may also be interesting to investigate the differences that may exist between the graphic representations of young children as compared to older children using this study as a basis.

In terms of this specific study, it may be interesting to investigate the imaginative aspects in graphic representations produced by children in terms of influences and originating ideas. It is of interest where children get their ideas from. Do their ideas originate from adults, peers or other sources, such as the media or popular culture? It may also be of benefit to investigate at greater depth, the detail of children's graphic representations. This study served as an introductory study into the main elements incorporated into children's graphic representations and it may be of benefit to investigate one or more of these elements in greater depth and with a larger sample.

The use of the saucepan in this research study was based on a study conducted by Wendy Zirngast. Zirngast (1987) used the saucepan, among other things, to investigate the relationship between visual perceptual processes and drawing ability in Year 7 students. It may be of interest to use other objects as stimulus that are even more neutral in nature than a saucepan which may have connotations related to gender. Objects such as a bottle or an apple, which carry no stereotypical associations, may be incorporated into a similar, or identical, research study.
6.5 Review of Methods

The research methods applied in this research study were successful in achieving the specified research outcomes. The qualitative research technique of inductive analysis was appropriate in that it allowed the researcher to prove and confirm preconceptions regarding the issue of gender-role influencing a child’s graphic representations. This was done through the close analysis of the transformational drawings and the additional written statements. The inductive approach allowed the researcher to become immersed in the specific details of the children’s drawings and in the research findings.

The pilot study provided an opportunity to verify the suitability of the data collection and analysis procedures. Small changes were made based on the information and feedback offered by the two experts who rated the children’s drawings.

The observational drawing task of the saucepan, to some degree, restricted the graphic representations of the students. Therefore, the transformational drawing task was incorporated into the complete drawing act. The transformational task was a very effective strategy because it allowed the participants to personalise their drawings and explore unique ideas relevant to themselves as individuals.

The analysis procedures proved to be reliable and appropriate in terms of answering the identified research questions. Although data obtained from the drawing analysis pro-forma was general, it focussed the analysis of the drawings on each of the four major elements identified in the research questions. The written statements, containing comments made by the children, were used to further support the results found within the drawings.

6.6 Conclusion

The aim of this research study was to investigate the effect and influence of gender on the graphic representations of children. This was done through the analysis of drawings completed by students from a Year 6/7 class. The students were required to complete an observational drawing of a saucepan and then transform the drawing into an image of
their own personal choice. The drawings were then analysed according to subject matter, expressive power, degree of detail and narrative content. Each criterion was addressed with a specific research question.

The overall findings of this study, in answering these research questions, illustrate that gender does significantly influence the graphic representations of children in this age group. Gender-role does have an influence on the choice of subject matter incorporated into children's graphic representations; gender-role does have an influence on the expressive capacities contained within drawings; gender-role does have an influence on the composite detail of the drawings produced by children; and, gender-role does have an influence on the narrative elements associated with children's graphic representations.
References


Ministry of Education. (no date). *Arts and crafts syllabus K - 7*. East Perth: Ministry of Education.


Appendix A
1. Drawing Analysis Pro-forma

(a) Description of Subject Matter - standard categories including: human figures, animals, caricatures, vegetation, buildings and transportation. What is included in the drawing?

(b) Expressive Power - overall impression and flavour of the drawing. How rich is the drawing in terms of imagination and emotion, use of medium, fluency of ideas and eloquence? High (5) Low (1)

(c) Degree of Detail - application of colour, use of line, form, shape and perspective. How much detail is in the drawing? High (5) Low (1)

(d) Narrative Content - separate object/narrative aspects. Does the drawing represent objects or does it tell a story? Do the objects conceal a narrative?
2. Written Statement Pro-forma

<table>
<thead>
<tr>
<th>Drawing:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth Date:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is your drawing complete:  

My drawing shows:  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________  

________________________________________________________________________
3. Letter to Expert Analysts

To whom it may concern,

I would like to thank-you for taking the time to analyse the included drawings which form the basis for my research in my thesis project. Your expert opinion and judgement is highly valued and appreciated.

In brief, I am researching the effect and influence that gender-role may have on a students drawing. Gender has become a significant issue in primary schools today and research in the area is needed so that this issue can be appropriately addressed.

The students were required to complete an observational drawing of a saucepan, transform the saucepan into another image of their own personal choice and then comment briefly on their work in the form of a written statement. Please use these written statements to support your analysis of the drawings. Each drawing and written statement, for identification purposes, has been given a label. This label is indicated on the written statements completed by the students and also on the back of the students drawings. Please indicate in the space provided on the analysis pro-forma which drawing is being analysed.

Section (a) requires a few brief words or a short sentence which describes what the student has actually drawn - the subject matter. For example, 'a pot transformed into a human figure with arms, legs, a torso and a face with specific facial features'.

Sections (b) and (c) require you to rate the drawing on the rating scale given according to the expressive power of the drawing and also according the degree of detail included in the drawing. A clear definition of these two criteria is given on the analysis pro-forma. For example, if a drawing shows a high degree of detail with textured lines and depth in perspective, you might rate is as '4', but if a drawing is very simplistic overall with very few lines and no evidence of perspective, you might rate is as '1.5'. Half
points have been included in the rating scales for convenience. Please make any
comments relating to these two areas in the spaces provided if need be.

Section (d) requires you to make comments about the narrative content of the drawing.
Again, a clear definition has been described on the analysis pro-forma. Just a few words
or a brief statement outlining the narrative content is sufficient. For example, a drawing
of a pot-mouse may be described as a 'separate object'.

Overall, I would ask that you spend approximately between 10 and 15 minutes on each
drawing, including reflection upon the drawing itself and then, completing the analysis.
There are nineteen drawings in total to analyse.

Again, I thank-you for taking the time out to analyse these drawings and should you
have any questions or problems with the information I have given or the analysis itself,
please do not hesitate to contact me.

Tamara Frederiks
I. Letter of Request

To the Principal,

Dear Sir, Madam,

I am a student at Edith Cowan University completing a Bachelor of Education with Honours. I am conducting a research study into children's drawings and investigating the effect and influence that gender-role has on these drawings. Gender has become a significant issue in primary schools today and research in the area is needed so that the issue can be appropriately addressed.

With your permission, I would like to conduct my study, including a small pilot study, in your school with a Year 6 class. For the purposes of the study, the students would be required to participate in a 45 minute drawing session. The drawing session requires the students to complete an observational drawing of a saucepan and then transform the saucepan into an image of personal choice. Immediately after completion of the drawing, each student will be required to comment on their work in the form of a written statement. These statements aim to provide clarification into the reasons behind the drawings completed by the students.

At no point during the study or analysis of the data will any of the participants be identified. I assure you that complete confidentiality will maintained throughout. Students will not be identified by name. The school itself will only be referred to as a school in Perth's metropolitan area.

A letter of consent will be requested from the parents of the participants. A copy of this is included.
I would like to arrange a meeting with you to further discuss the possibility of completing my research in your school. I will be happy to answer any queries or questions that you may have about the nature of this study.

Thank-you for your consideration.

Yours Sincerely,

Tamara Frederiks
2. Letter of Consent

To the parents or guardians,

I am a student at Edith Cowan University completing a Bachelor of Education with Honours. I am conducting a research study involving a drawing session with Year 6 children. The children would be required to complete an observational drawing of a saucepan, transform the saucepan into another image or personal choice and then comment briefly on their work in the form of a written statement.

I am researching the effect and influence that gender-role has had on the drawings completed by Year 6 students. Gender has become a significant issue in primary schools today and research in the area is needed so that the issue can be appropriately addressed.

Please return this letter of consent as soon as possible. If you have any further questions or queries concerning the study, please contact me on [contact information]. Thank-you for your cooperation.

Tamara Frederiks

I/we, __________________, give permission for my/our child, __________________, to participate in the drawing session and the interview for the research study conducted by Tamara Frederiks.

I/we confirm that;

- I/we have read the information given to us and understand it and what is required of my/our child;
- I/we understand that complete confidentiality will be maintained;
- Should the results be published, neither my/our child nor the school will be identified;
• No pressure is being put on me/us or my/our child to participate;

• I/we understand that my/our child can withdraw from the study at any time, and

• I/we voluntarily sign the consent form.

Signature of parents/guardians

Signature of participant

Date
Appendix C
Drawing: B1
Date of Birth: 29/09/88

My drawing shows:

A pig pot with boxer shorts and freckles.
Drawing: B2
Date of Birth: 20/01/89

My drawing shows:

1 person getting stabbed in the head. It is called psycho boy
Drawing: G3
Date of Birth: 04/11/88

My drawing shows:
A little kettle with lots of flowers. I did it because I have got a kettle with lots of flowers and I could only really draw a kettle.
Drawing: G4
Date of Birth: 23/08/89

My drawing shows:

A clown that has a big smile even though he is asleep and he is blushing for some reason he also is wearing a hat. He also reminds me of someone that smiles [at] me all the time. That is the reason I drew it.
Drawing: B5
Date of Birth: 22/04/89

My drawing shows:
A SUPER POT from outer space. He comes from the land POTTY! I drew this picture because it looks cool.
Drawing: B6

Date of Birth: 04/03/89

My drawing shows:

A crab with back legs so it can walk on land. It's the only thing I could think of what no one else had done.
Drawing:  G7
Date of Birth:  17/06/88

My drawing shows:

A kookaburra with a handle on his head! I think it was really silly trying
to turn a cooking pot into a proper drawing. I drew a kookaburra
because I thought I could turn a handle into a beak, so the rest was easy!
Drawing: G8

Date of Birth: 25/02/88

My drawing shows:

A saucepan being turned into a camel. I drew it because I couldn't think of anything else to draw. It has 3 humps and its name is Jessie.
Drawing: G9

Date of Birth: 31/03/88

My drawing shows:

A green frog leaping and trying to catch the fly. I drew a frog because when I drew the eyes it sort of looked like a frog then the handle could be the back leg.
Drawing: G10

Date of Birth: 04/10/87

My drawing shows:

A dog jumping through the air at a tennis ball with a red collar and tongue hanging out. The dog has short brown fur and short ears. I drew a dog because I love cute animals.
Drawing: G11

Date of Birth: 11/01/89

My drawing shows:

Tinman from the Wizard of Oz. I drew this because it was the first thing that came to my mind and it was easier to tell where to put all the features (also with a axe).
Drawing: B12

Date of Birth: 25/05/89

My drawing shows:

A robot being controlled by a controller. I draw this because the head looked like a robot head.
My drawing shows:

Someone getting stabbed. I did this drawing because when I drew my teapot my handle was done wrong and it looked like a knife so the best option was to do that.
**Drawing:** B14

**Date of Birth:** 18/10/88

My drawing shows:

A saucepan changed into a propeller of an aircraft. The propellers are the handles of the pot and the pot is the tip of the aircraft. I drew this picture because I thought that since it was aerodynamic it would be good to change it into an aircraft.
My drawing shows:

A teapot which I changed into a mechanical warrior, first I added on the second handle then I thought up from there. I drew this robot because this sort of thing was on my mind.
Drawing: B16

Date of Birth: 31/08/87

My drawing shows:
That it is a yellow duck. The handle is a beak and the lid handle is the crest. I drew a duck because the handle looked like a beak and it's easier to draw.
Drawing: G17
Date of Birth: 26/05/87

My drawing shows:

I drew a teapot then changed it into a man with a big nose. The reason I drew this was because it would look funny.
Drawing: B18

Date of Birth: 29/09/87

My drawing shows:

Of pot
My drawing shows:

A walking teapot that can move and talk. He has jet packs on his feet so he can fly.