Primary school children's perceptions of infant feeding -

exploring their awareness using an adapted 'draw and write' method

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Abstract

Background: Breastfeeding is recognised as the optimal feeding method, conferring short and long term benefits to infants and their mothers. In the UK some women do not initiate breastfeeding. Many commence formula milk feeding at birth or after a brief period of breastfeeding. Often women have decided how to feed their infants before conception or even during adolescence, prior to when infant feeding education has traditionally been provided. Negative attitudes to breastfeeding amongst some social groups, and lack of familiarity with the practice appear to contributing factors. This research has explored infant feeding awareness of children in primary schools as a first step towards informing appropriate health education interventions.

Methods: Fifty six children aged 5/6, 7/8 and 10/11 years were recruited to the study from 3 schools in rural and urban areas of Southern England. Children were shown a series of drawings, and read a story about a hungry baby. They were asked to finish the story, showing how they thought the baby was fed, using the 'draw, write and tell' method, developed as an adaptation of 'draw and write'. The children produced one or more pictures, often with text, and were offered the opportunity to talk about their work; the data were united in a 'commentary'. Codes emerged, which were combined into categories. Mapping and charting techniques were used to identify five key areas for discussion.

Results: The development, and flexibility, in children's ideas regarding infant feeding was noted. Whilst breastfeeding was identified by some children, breastfeeding terminology and imagery were problematic for many. The prevalence of feeding bottles and references to formula milk were striking, with children identifying these as equivalent to breastfeeding. Solid foods were frequently referred to by children, and seemed to be identified with formula milk feeding rather than breastfeeding.

Conclusions: For the first time this study identified primary school children's awareness of different feeding methods and the inter-relationships between these methods. It appeared difficult for children to view breastfeeding as normal, perhaps because it is rarely seen or discussed, and formula milk feeding is so prevalent. The children were interested in the subject and it is anticipated that infant feeding education with these age groups would be beneficial. Introducing children to breastfeeding needs to be achieved with care and sensitivity, using language and imagery with which they are confident. In addition, the efficacy of 'draw, write and tell' and the challenges of using this method are discussed.

To
Tom and Henry, who inspired me to begin along this path, and have been at my side every step of the journey. Thank you for sharing with me your energy, enthusiasm and laughter….and thank you for your patience.
Mum x x x

Contents

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One visit with a child can supply us with enough creativity dust to last for a lifetime

(Eric Maisel, 1865-1946)

Introduction to the research

Research has consistently demonstrated that infant feeding decisions affect the health and long term well-being of mothers and babies. The conclusion drawn across a range of research areas suggests that breastfeeding leads to a significant reduction in the incidence of major long term health problems (Earle, 2002; Owen et al., 2002; Richards et al., 2002; Do Nascimento & Issler, 2003; Hoddinott et al., 2008). Despite this, research conducted in the UK has concluded that, even when women are aware of the benefits of breastfeeding, they may choose to feed their infants formula milk[1] (Bolling et al., 2007). Their choices are clearly based on other factors (Arora et al., 2000; Stewart-Knox et al., 2003). It appears that women are largely influenced by the attitudes and values of the social networks to which they belong, especially those of their female relatives, partners and peers (Kessler et al., 1995; Arora et al., 2000; DiGirolamo et al., 2005; Stewart-Knox et al., 2003; Scott et al., 2006). They are also affected by the media and culture of the society in which they live (Waters, 1997; Shakespeare et al., 2004; McFadden & Toole, 2006). Those who do not breastfeed frequently cite barriers such as inconvenience (MacIntyre et al., 1999; Shepherd et al., 2000; Shaker et al., 2004), embarrassment and disgust (Earle, 2002; Forbes et al., 2003; Greene et al., 2003; Scott & Mostyn, 2003), family attitudes (Kessler et al., 1995; Scott et al., 2006), uncertainty regarding how to breastfeed (Arora et al., 2000; Bailey et al., 2004), and a desire to involve the baby's father in feeding (Stewart-Knox et al., 2003; Sittlington et al., 2007).

The contradiction between women's knowledge of the benefits of breastfeeding and their infant feeding choices has presented challenges for those implementing public health education programmes (Earle, 2002). Health education regarding infant feeding may be instrumental in improving breastfeeding rates but it is important that this is focussed effectively (Fairbank et al., 2000). Research relating to the infant feeding awareness amongst young people has been considerable (Mackay, 1995; Connolly et al., 1998; Greene et al., 2003; Swanson et al., 2006). There is evidence to show that children[2] may be receptive to teaching on the subject (Dykes, 2003; Russell et al., 2004). However, very little research exists to inform our understanding of primary school children's knowledge of how babies are fed. Only three studies, Mackay (1995), Dykes (2003) and Russell et al. (2004), have been conducted with this age group regarding infant feeding. Gaining a clearer indication of primary school children's understanding of infant feeding is essential to the development of health education around the subject.

Therefore this research was developed with the following aims:

Primary aim:

- To explore primary school children's awareness of infant feeding.

Secondary aims:

- To identify key areas of significance to children regarding infant feeding.
- To explore age related differences in children's perceptions of infant feeding.
- To explore for factors which may be significant when planning infant feeding education for primary school children.

A storytelling activity was developed for use with children in schools, and data were collected[3] using 'draw, write and tell'[4], a method adapted from the 'draw and write' method (Backett-Milburn & McKie, 1999). The research involved 56 participants from three age groups, who were recruited in three primary schools in contrasting locations in Southern England. This research also involved consideration of issues relating to research involving children, in particular ethics, consent, participation and research methods.

This research was initially conceived by Professor Jo Alexander and Professor David Gauntlett as a collaboration between the School of Health and Social Care and the Media School at Bournemouth University. My[5] interest in the research stems from my belief in the importance of breastfeeding, gained through both my personal experience as a mother and my professional practice as a midwife and antenatal teacher. In addition, I consider that informed choice is an essential element in health care, education and research. This principle has guided both my attitude to infant feeding and my approach to involving children in this research.

This thesis commences with an introduction to different infant feeding methods and their significance to the health and wellbeing of women and infants. It will then discuss the factors that influence women's choices and which have combined to create the 'infant feeding landscape' that we see in the UK today. The literature relating to the infant feeding perceptions of young people and children is then explored. The thesis continues with a discussion regarding children's participation in research, and the essential considerations involved. The use of art in research involving children is considered, with a review of the literature relating to the 'draw and write' method. Following these background chapters the research methods and methodology are described. Two chapters discuss the findings of the research. These are followed by an exploration of the seven discussion areas arising from the data. The conclusion identifies the original contributions of this research, recommendations for practice and suggestions for further research.

Infant feeding: the social and cultural context

1 Introduction

Appreciating the history, social background and culture of infant feeding in the UK is essential in understanding the perceptions that young children have of the subject. Their immersion in family life and in their social environment, and a keen desire to learn about the world around them, enables them to 'soak up' the ideas, language and imagery of infant feeding. Recognising the influences on children's awareness in this area places their ideas in context. It might also be suggested that their perceptions provide an indicator of general infant feeding attitudes in the UK today. This chapter will use research drawn from the UK and other developed countries, to explore the infant feeding options available to parents, and the significance of feeding choices on the health and wellbeing of mothers and babies. It will then provide a broad overview of some of the issues which influence parental feeding intentions[6] in the UK.

2 The significance of infant feeding method

Technology has provided many infant feeding choices to parents, and this has presented a number of new personal dilemmas and public health issues. In the UK today parents have the opportunity to choose whether their infants are breast or formula milk fed, and when to move on to feeding their baby solid foods. The decisions made are usually closely connected to parental experience, knowledge and beliefs about infant feeing. The choices which parents make for themselves and their offspring may have far reaching implications in terms of the short and long term wellbeing of mother and child. A significant amount of research has been focussed on identifying the motivations behind parental decisions (see 2.3.1), particularly where these are contrary to recognised best health practice. Understanding the UK's complex infant feeding culture is essential to an exploration of children's perceptions about how babies are fed.

1 Breastfeeding

It is an incontrovertible fact that, for most babies and mothers, breastfeeding is the optimum form of infant nutrition. Research has demonstrated that maternal breast milk is the only nutritionally complete food source for human infants and, certainly at present, there is no alternative which equates to it (DiGirolamo et al., 2005; Fairbank et al., 2000). Breastfeeding vastly predates modern humans and has been a key element in our evolutionary strategy and social development (Cuthbertson, 1989). Indeed, the presence of mammary glands defines and describes the class of animals to which humans belong.

The effects of breastfeeding and breast milk[7] have been shown to promote long term health and, arguably, have developmental and social advantages for babies (Quinn et al.,

2001; Richards et al., 2002; Hoddinott et al., 2008) and their mothers (Hoddinott et al., 2008). Breast milk contains species-specific essential antibodies (Hanson et al., 2003), provides infants with readily available minerals, vitamins and proteins, and ensures optimal hydration (Do Nascimento & Issler, 2003). As infants, breastfed babies are less susceptible to respiratory tract infections (Ip et al., 2007), diarrhoea and vomiting (Quigley et al., 2007), ear infections (Revai et al., 2007) and skin disorders (Ip et al., 2007), and are significantly less likely than other infants to suffer morbidity and mortality in their first year (Quigley et al., 2007). In later life, breastfeeding is associated with reduced incidence of obesity and diabetes (DiGirolamo et al., 2005), improved cardiovascular health (Owen et al., 2002), and many other health benefits (Do Nascimento & Issler, 2003; Hoddinott et al., 2008), possibly including increased cognitive ability and educational attainment (Richards et al., 2002; Horta et al., 2007), There are clear emotional and physical benefits for mothers who breastfeed their infants (Hoddinott et al., 2008). These include a decreased risk of ovarian and breast cancer (Ip et al., 2007), improved mother-infant bonding (Do Nascimento & Issler, 2003; Nelson, 2006), reduced post-natal depression incidence (Ip et al., 2007) and increased post pregnancy maternal weight loss (Do Nascimento & Issler, 2003).

The World Health Organisation (WHO) recommends that all babies are exclusively breastfed for six[8] months, and that breastfeeding continues in combination with suitable solid foods until a child is around two years of age (WHO, 2003; Fewtrell et al., 2007). However, breastfeeding initiation has declined markedly throughout the world[9] in the last 150 years (Coates & Riordan, 2005; Palmer, 2009). This has been largely in response to the development of formula milks (Baumslag & Michels, 1995; Wolf, 2001). However, it has also been exacerbated by the changes in infant care practices which accompanied this. Suboptimal breastfeeding practices, social change and the easy availability of formula milks led to breastfeeding reaching its lowest point in the 1970s in the UK, US and in many other developed countries (Coates & Riordan, 2005). In recent years there has been an increase in breastfeeding rates, and the 2005 Infant Feeding Survey identified that 78% of women were initiating breastfeeding in the UK (Bolling et al., 2007). However, this rate was not sustained and at four months of age only 7% of babies were being exclusively breastfed (Bolling et al., 2007), compared to 64% in Norway (Hoddinott et al., 2008)[10]. Today breastfeeding rates in the UK differ widely between women according to their social circumstances (Kelly and Watt, 2005; Bolling et al., 2007). It appears that there is a greater propensity to initiate breastfeeding amongst women who have spent longer in full time education, as well as amongst those who are older, employed (Bolling et al., 2007) and in a permanent relationship (McInnnes et al., 2001). A number of the current motivations and barriers relating to breastfeeding are discussed in section 2.3.

2 Formula milk feeding

Formula milk is now classed as a ‘complementary food’ by the WHO (2003). This classification is aimed at enhancing the status of breast milk (WHO, 2003) following a long period of decline in favour of formula milk. During the 1860s a combination of

scientific enthusiasm and Victorian modesty combined to promote the development of cows' milk derivatives made to a 'formula' (Coates & Riordan, 2005). Until that point babies were only occasionally hand fed, frequently with disastrous results (Filer, 1993). Formula milks were enthusiastically adopted by parents in Europe and the United States during the 20th Century (Baumslag & Michels, 1995).

Formula milks do not provide many of the essential elements found in breast milk and it has been difficult to synthesize its many components or achieve the same chemical interactions and bacteriological flora encouraged by human milk (Edwards & Parrett, 2002). Crucially, formula milk, even at its most advanced, cannot hope to replicate the changing composition of breast milk, which alters over time to suit the age and feeding requirements of the individual baby (Saint et al., 1984). In addition, the preparation of formula milk involves health risks caused by contamination (Quigley et al., 2006) and incorrect dilution (Renfrew et al., 2003) and heating (Dixon et al., 1997). Even in ideal conditions, with clean water supplies and sterilising facilities, formula milk feeding is associated with far higher rates of infant morbidity and mortality than breast milk. In areas which lack these facilities, especially in the developing world, formula milk associated infant deaths are extremely common (Costello & Sachdev, 1998). There also appear to be a number of long term health problems which may be more prevalent amongst those who were formula milk fed (Horta et al., 2007). In view of this evidence it is concerning that by six weeks of age 79% of babies in the UK have received formula milk and more than half are being fully formula milk fed (Bolling et al., 2007). This is particularly a problem amongst families in disadvantaged areas, where low breastfeeding rates combine with other health issues, contributing to a cycle of ill-health (McInnes et al., 2001).

3 Introduction of solid foods

The WHO recommends that infants are exclusively breastfed for the first six months of life, and then introduced to complementary foods whilst continuing to breastfeed until at least two years of age (WHO, 2003). There is ongoing debate whether this recommendation is necessary in developed countries (Fewtrell et al., 2007). It has been suggested that the evidence for this advice may be weak, and that feeding should be managed according to the individual needs (Foote & Marriot, 2003). Some researchers have questioned the perceived risks of introducing solid foods before six months, based on the current lack of information to show that the practice is associated with higher incidences of food allergies (Kull et al., 2002). There is, however, also a lack of evidence documenting any reasons for not avoiding solid foods prior to six months (Agostoni et al., 2008).

In the debate which has ensued around this issue there has been a marked lack of focus on assessing the suitability of particular foods (Fewtrell et al., 2007). In recent history weaning practices have included foods such as cereals and dairy products, which, in evolutionary terms, are late additions to human diets, and doubt exists regarding the effects these may have on infant wellbeing (Eaton, 2006). Unlike previous generations

many babies today are weaned on commercially produced foods. These frequently contain a number of artificial compounds, such as thickeners and sweeteners, which make them even less appropriate for babies than basic foodstuffs used in the past[11] (Wright et al., 2004).

Current recommendations, specific to Europe, suggest that the introduction of solids at six months of age is a desirable goal, with the added information that this should not occur before 17 weeks or after 26 weeks of age (Agostoni et al., 2008). This guidance has perhaps more significance in the UK than in other European countries as in the UK 51% of parents introduce solid foods to their infants when they are less than four months of age (Bolling et al., 2007). This practice is most prevalent amongst younger mothers, mothers who smoke and formula milk fed babies (Fewtrell et al., 2003). The situation may be exacerbated by health professionals who may be unaware or unconvinced by current guidance (Wright et al., 2004; Reeves, 2008).

3 The infant feeding landscape

As children are generally not infant feeding decision makers and their personal experiences of caring for babies are usually adult led, I would argue that their perceptions of infant feeding are inevitably based on their view of the 'infant feeding landscape' created by adult society rather than ideas which they construct themselves. This landscape is formed by a complex combination of the feeding choices and historical changes described above, and a range of social attitudes and personal beliefs. An array of research from many different disciplines has described women's perspectives on infant feeding, as well as the views of partners, families, health professionals and the wider population, and the ways in which they interact with one another.

1 Women's perspectives on infant feeding

It is clear that women's infant feeding decisions differ according to a number of factors such as age, occupation, household income, marital status (Kelly & Watt, 2005), maternal education, smoking habits (Sittlington et al., 2007) and exposure to breastfeeding (McInnes et al., 2001). However, this does not describe the motivations behind their feeding choices, in terms of their personal perceptions and the pressures which are exerted on them by their social environment.

1. Knowing that 'breast is best'

The UK Infant Feeding Survey 2005 indicated that women who expressed knowledge about the benefits of breastfeeding were more likely to do so themselves (Bolling et al., 2007). Research in both the UK (Shaker at al., 2004) and other developed countries (Chezem et al., 2003), has demonstrated that parents who choose breastfeeding are generally more aware of the infant health benefits and nutritional superiority of breast

milk than those who do not. Most women who choose to breastfeed express the opinion that it is natural (Jones, 2006), and cite infant health benefits as their main motivation (Sloan et al., 2006). Unsurprisingly, increased knowledge about breastfeeding benefits is associated with higher confidence levels and prolonged continuation of feeding (Chezem et al., 2003).

Women who choose not to breastfeed also demonstrate some understanding of the benefits of breastfeeding (Marchand & Morrow, 1994). However, many have misunderstandings about various aspects of infant feeding (Sittlington et al., 2007), and couples who use formula milk are particularly likely to hold a number of misconceptions about breastfeeding (Shaker et al., 2004). Indeed, after years of 'breast is best' campaigning some now question whether this public health method in itself sends out a subliminal message that "breast is best… but your baby will do just fine with formula" (Lothian, 1998).

Unfortunately, whilst adult education might appear to be an effective means of promoting good infant feeding practice, it is clear that positive attitudes to breastfeeding are not only dependant on awareness of the health benefits (Dewan et al., 2002). Instead, attitudes are often dependent on a range of complex social and personal perceptions of infant feeding.

2. 'We were all bottle fed and we're fine'

Misunderstandings about breastfeeding are exacerbated by the perception that because formula milk is custom made for babies it must be entirely appropriate for them and equivalent to breast milk. The sheer presence of formula milk feeding in everyday life is often sufficient to reassure the public of its 'normality'. Some observers have commented that there is a general belief that formula milk feeding is safe (Waters, 1997; Shakespeare et al., 2004), although women are unlikely to claim that formula milk feeding is better than breastfeeding (Murphy, 1999).

Discussing the risks of formula milk feeding is difficult when, patently, the vast majority of bottle fed babies in the developed world appear to be alive and healthy[12]. This is particularly the case where generations of babies in some families have now been formula milk fed (Palmer, 2009). Identifying with the subtle wider health implications is challenging, and there is doubt about the efficacy of taking a risk based approach to infant feeding education (Heinig, 2009).

3. Seeing babies being fed

Women's experiences of seeing babies being fed have been demonstrated to have an impact on their own feeding behaviours. Hoddinott and Pill (1999) noted that women who had often seen family and friends breastfeeding were more confident and committed to doing so themselves, whilst those who had only seen strangers feeding often perceived this as a negative experience. Unfortunately, many young women reach adulthood without having observed breastfeeding (Gregg, 1989). Whilst attempts to provide opportunities for

women to experience this may be helpful, it should perhaps be remembered that some women may feel uncomfortable if they are unable to relate to the breastfeeding mothers or the context in which this occurs (Greene et al., 2003).

4. "I just see the exposed breasts" [13] – embarrassed by breastfeeding

In modern Western society the breast is seen essentially as a sexual part of the female body, and this perception can clash with its mammalian feeding function (Earle, 2002). When considered in the context of feeding, breasts appear to be a source of shame, embarrassment and anxiety, and many women have deep seated issues around this aspect of it. Whilst mothers may distance themselves from articulating a connection between sex and breastfeeding (Hoddinott & Pill, 1999) there appears to be an underlying discomfort relating to this. It has been suggested that women may experience an erotophobic response (Forbes et al., 2003) to observing breastfeeding, which may be affected by the context in which they first come into contact with the practice and is particularly related to seeing strangers breastfeeding (Hoddinott & Pill, 1999). It is also possible that the concept of breast milk as a bodily fluid is uncomfortable for some women (Bramwell, 2001).

Because of the sexual connotations involved in breastfeeding women may feel uncomfortable about the practice, particularly the concept of feeding in view of others. A minority express distaste at feeding when their partner (Scott et al., 2006) or other children are present (Stewart-Knox et al., 2003). More women find it difficult in the presence of family, friends and especially in front of men. A high proportion of mothers are unhappy about breastfeeding in public places such as parks or restaurants (Earle, 2002; Greene et al., 2003; Scott and Mostyn, 2003). As a result women may perceive that breastfeeding will make it difficult for them to participate fully in daily life, and they may therefore be socially excluded and isolated (Stewart-Knox et al., 2003).

It is perhaps worth considering that embarrassment is closely related to cultural background, infant feeding norms and exposure to breastfeeding. Scott & Mostyn (2003) noted the contrast between the far larger proportions of women who were discouraged from breastfeeding due to embarrassment in Scotland, compared with low levels of embarrassment amongst women in Australia, where breastfeeding is commonplace (Binns & Scott, 2002). It could be suggested that not only does embarrassment discourage women from breastfeeding, but the resulting low breastfeeding rates also make the practice even more daunting because women feel very conspicuous.

Exposing their breasts to midwives and health visitors is of concern to women who require breastfeeding support (Hoddinott & Pill, 2000). It can be difficult for health professionals to appreciate women's anxieties in this area (Hoddinott & Pill, 2000).

It is worth noting that women's discomfort with nakedness in this context could have

significant effects on their reaction to public health advertising. A number of studies have highlighted concerns about health promotion materials which include graphic images, with women commenting that they "just see the exposed breasts" (Stewart-Knox et al., 2003, p269).

5. Women's perceptions of their partner's views on infant feeding

Women's partners frequently express their own views about infant feeding (see 2.3.2.1). A desire amongst women for shared parenthood and for the father to bond with the baby appears to have a significant impact on the decision to bottle feed (Earle, 2002).The involvement of fathers in baby care is repeated many times in the literature, with mothers articulating a concern that the father will feel excluded if the infant is breastfed (Sittlington et al., 2007). However, it is uncertain how accurately women interpret their partner's preferences (Scott et al., 1997). It is curious that such a well intentioned ideal is detrimental to the well-being of both mother and baby. Some women also appear concerned that their partner may be upset if they breastfeed in public (Ingram & Johnson, 2004).

6. Convenience food?

Different people have very diverse perceptions of the convenience of feeding methods. Depending on the outlook of the individual, breastfeeding or formula milk feeding may be seen as utterly convenient or highly inconvenient. Breast milk is a constantly available, portable, free, nutritionally complete meal for babies. For women who feel comfortable and confident with the practice, and are well supported, it is extremely convenient. However, factors such as embarrassment, confusion and lack of support may make breastfeeding very inconvenient[14] for others. Interestingly, most individuals appear to think that their preferred method of infant feeding is the most convenient, which suggests that perceptions of the convenience of different feeding methods may be a very significant consideration in women's decision making processes (Shaker et al., 2004).

Inconvenience, especially in relation to work and social activities, is frequently cited as a barrier to breastfeeding (Shepherd et al., 2000). Breastfeeding and returning to work are often perceived as mutually exclusive (Gerrard, 2001) leading some women to choose formula milk feeding from birth (Kelly & Watt, 2005). However, Sittlington et al. (2007) found that women who worked were more in favour of breastfeeding than students or unemployed women, for whom this factor may have been less of a concern. Indeed, they also noted that more women who breastfed returned to work than those who used formula milk. In a US study, almost half of adults surveyed believed that breastfeeding mothers would have to give up too many lifestyle habits (Ruowei et al., 2002). This particularly appears to be viewed as a problem by younger women (Dewan et al., 2002). Several researchers have commented that the dependence of the baby on the breastfeeding mother has often been seen as a major problem (Stewart-Knox et al., 2003), and Earle (2002) suggested that formula milk feeding was perceived as a way of women regaining their identity as 'non mothers' (p212). Formula milk feeding allows other people to feed the baby, and is therefore seen by some women as relieving them of

the personal constraints and burden of breastfeeding.

Women may perceive breastfeeding as time consuming and be concerned about lack of routine (Stewart-Knox et al., 2003). Formula milk feeding appears to offer quicker, more regulated, 'problem free' feeding, qualities which are not always associated with breastfeeding, particularly by those who have had little contact with it (McFadden & Toole, 2006). Unlike breastfeeding there are no social or personal limits on public formula milk feeding, and facilities are often provided for warming the milk. However, breastfeeding facilities in public places are frequently perceived as being very poor or unsanitary (Stewart-Knox et al., 2003).

7. "I might give it a go"[15] – uncertainty of success in breastfeeding

Breastfeeding is unfortunately regarded by many to be a difficult activity (Bailey et al., 2004). Many of these perceptions arise from the initial time that may be required to establish feeding, which is the stage at which a high proportion of women change to formula milk feeding (Bolling et al., 2007). As a result women often say that they are going to 'try' breastfeeding (Hoddinott & Pill, 1999) and, in the presence of a viable alternative may quickly move to formula milk feeding if they encounter problems. Frequently women anticipate that breastfeeding will be painful (Shepherd et al., 2000) and could "go wrong" (Bailey et al., 2004, p240). Unfortunately in a culture where women do not often observe each other breastfeeding, there is little existing cultural knowledge about the practice and new mothers may have no context on which to base their own experiences. They may therefore be less positive (Hoddinott & Pill, 1999). Guilt, anger and negativity regarding breastfeeding may result when women cease breastfeeding earlier than anticipated owing to the problems experienced (Stewart-Knox et al., 2003). This may affect their feeding decisions with future babies (Ingram et al., 2001) and I would suggest that it may also have an influence on the shared perception of breastfeeding in their family and social group.

8. 'Is baby getting enough?'

Weight gain charts for babies in the UK have historically been based on averages for bottle fed babies (Cole et al., 2002), which show greater gains[16], in the long term, than is usual with breastfeeding, and indeed more than is physiologically desirable (Sachs et al., 2006). This has immediately placed breastfeeding at a disadvantage in a culture which perceives weight gain as a sign of infant health (Marchand & Morrow, 1994). The ability to measure feeds and 'prove' what babies have eaten also aligns better with a society in which people feel reassured by scientific or technological processes. As noted by Forster and McLachlan (2008) some women prefer formula milk feeding because "it comes with instructions". These factors may generate a lack of confidence in breastfeeding and some women express concerns about breast milk insufficiency. This fear is an element of the "common knowledge" (Smith, 2003, p18) which exists regarding breastfeeding and serves to dissuade women from the practice.

It could be argued that this lack of confidence in babies having sufficient nutrition is also

shared by some health professionals, which undermines women's confidence in breastfeeding (Dykes, 2006). This is particularly reflected in supplementing breast milk with formula milk for babies where it is believed there is excessive weight loss or insufficient weight gain, hypoglycaemia, delays in feeding initiation or particular infant or maternal medical conditions (Wight, 2006). Ironically, this anxiety and the attempts to alleviate fears by supplementing breastfeeding are inclined to result in reduced milk supply. Equally, supplementation for maternal tiredness is a short term 'fix' which may impact negatively on women's milk production and result in ongoing feeding problems (Cloherty et al., 2004). Supplementation, especially in the hospital setting, has been shown to be associated with earlier discontinuation of breastfeeding and increased use of formula milk (Murray et al., 2007).

Accurate knowledge about weaning also seems to be an issue when introducing solid foods. Many parents do not recognise professional guidance or written information as important in making a decision about introducing solid foods (Savage et al., 1998) and parental choice is often governed by their perception that the baby needs to be 'satisfied' (Savage et al., 1998). This is especially the case for babies with heavier birth weights, and those who appear to be hungry or are not sleeping through the night (Anderson et al., 2001). Women may be influenced by the opinions of those close to them, such as maternal grandmothers and close friends (Alder et al., 2004). In addition, infant solid food manufacturers mark commercial food packaging with instructions for feeding from four months of age, which implies the safety, and perhaps even the necessity, of introducing solid foods.

2 The attitudes of partners, families and health professionals

9. Partners

Women's partners are perhaps more involved with infant feeding decisions, and participation in feeding and baby care, than in previous generations. Research demonstrates that male partners are usually less knowledgeable than women themselves, regarding either breastfeeding or formula milk feeding (Shepherd et al., 2000). It has been shown that a male partner may have a significant influence on a woman's infant feeding choices (Scott et al., 2006), and that a woman's attitudes towards breastfeeding are often closely aligned to that of her partner (Shepherd et al., 2000). Partners may perceive formula milk feeding as a means of giving practical help (Earle, 2000). Men have also demonstrated more anxieties about public breastfeeding than women (Ward et al., 2006). These factors have all indicated that young men should be targeted for health information around infant feeding as well as young women (Ineichen et al., 1997).

10. Grandmothers

Values learned in the home have a very strong influence on feeding behaviour (Ekstrom et al., 2003). Women who were breastfed as babies are much more likely to do so themselves. As they are very unlikely to recall events from infancy they are presumably influenced either by having seen siblings fed, or by a breastfeeding culture that has been absorbed from their families. These mothers may well receive good breastfeeding support from their families, and particularly from their own mother (Grassley & Eschiti, 2008). However, in previous generations many women did not breastfeed, and mothers or mothers-in-law, who did not breastfeed themselves, may find it more difficult to offer knowledgeable support (Sloan et al., 2006). Older women are common sources of advice and information for new mothers, but their own breastfeeding experiences, or failures, may make it difficult for them to provide good breastfeeding support. Indeed, they may actively encourage feeding methods with which they are familiar with, especially if the breastfeeding mother encounters problems (Lupton, 1998).

11. 'Fitting in' with family and peer expectations

It is clear that different social-economic groups tend to have different infant feeding expectations (Sloan et al., 2006). For women there may be pressure to adopt the method normally used by family and friends. This may mean that they feel coerced into breastfeeding (Bailey et al., 2004), or believe they have to breastfeed in order to be perceived as "a good mother" (Carter, 1996). Amongst women whose family and social group do not commonly breastfeed there is frequently an assumption that they will bottle feed (Earle, 2002). For many women there is little consideration of breastfeeding, and low levels of maternal education and lack of contact with the practice, mean that their perceptions are not challenged. It is often difficult for women, especially if they are young or vulnerable, to make different choices from their social group, and hard for them to gain support and encouragement in their choice of feeding method if they do (Ineichen et al., 1997).

12. Health professionals

In the UK several health professions are involved in promoting public health around infant feeding. This is a major element in the role of midwives and health visitors, but there is also involvement from neonatal nurses, paediatricians, GPs, children's nurses, school nurses and healthcare assistants.

Several issues have been noted regarding the contributions of health professionals in women's infant feeding experiences. Research has repeatedly demonstrated that health professionals often lack breastfeeding training, and do not always possess adequate expertise or experience to support breastfeeding (Dykes, 2006; McFadden and Toole, 2006; Renfrew et al., 2006; Smale et al., 2006). As such women may receive contradictory information (Cripe, 2008; McFadden & Toole, 2006). In addition, well meaning attempts to support women, such as giving formula milk to enable the mother to rest (Cloherty et al., 2004) can be misguided and are associated with early breastfeeding cessation (Wright et al., 2004). Whilst some elements of hospital practice have improved over time[17], medicalisation of childbirth and the notion of risk has generated a new

range of issues which impact significantly on breastfeeding[18]. These factors may negatively affect breastfeeding, particularly amongst women who are less confident breastfeeders (Dennis, 2002). Shortages of staff, both in hospital and in the community can result in a lack of postnatal support both in hospital and at home (Furber & Thompson, 2007). This may have a particular impact on the duration of breastfeeding.

Education and practice interventions to improve breastfeeding rates have experienced mixed success. Many women appear to have already decided on infant feeding method before having any antenatal contact with healthcare professionals (Earle, 2000). Research in the US has demonstrated that neutrality on the subject from carers appears to result in reduced breastfeeding rates (DiGirolamo et al., 2005). Paradoxically, some women feel pressurised into breastfeeding, and may feel that their needs and opinions are not taken into account (Hoddinott & Pill, 2000). As a result there is evidence to show that women may make 'socially desirable' responses to health workers regarding their feeding intentions (Sittlington et al., 2007). However, research has shown that antenatal interventions can, on occasion, increase breastfeeding rates and duration (Fairbank et al., 2000). Individual and group antenatal education, especially amongst women with low incomes, has been identified as beneficial by some research (Dyson et al., 2006; Dyson et al., 2007). It has been noted that education needs to be multifaceted and aimed at specific social groups if it is to be effective (Spiby et al., 2007). At present there appears to be no single method which achieves consistent improvements in breastfeeding rates (Smale et al., 2006; Spiby et al., 2007).

13. Peer support

Breastfeeding peer support networks have been reviewed by a number of researchers in recent years. These have been shown to offer opportunities for improving the duration of breastfeeding (Britton et al., 2007) whilst integrating effectively with local communities and cultures (Dykes et al., 2003). Many projects have been found to be very effective (Fairbank et al., 2000) and provide women with a supportive network which may otherwise be lacking (Bailey et al., 2004). However, in some cases there is evidence that interventions such as this do not impact substantially on breastfeeding rates and are not cost effective (Hoddinott et al., 2009). Peer support in the form of evidence based, professionally moderated web-based facilities[19] have begun to offer a remote alternative to local support groups (Ryan & Herxheimer, 2007), although it appears that their efficacy has yet to be evaluated.

14. Media

Women today not only absorb the practices and attitudes of their own family and social group, but are also exposed to a range of ideas through media and advertising. In the case of infant feeding these influences are diverse, although there is little literature which documents the details of this. Popular culture, in the form of television, film and printed media, tend to focus on formula milk feeding (Henderson, 2007), often associating formula milk feeding with 'ordinary' families, and breastfeeding with middle class or celebrity women (Henderson et al., 1999). In addition, references to formula milk feeding

were found to be largely incidental, whilst breastfeeding in dramas was often specifically commented on or had negative connotations (Henderson, 2007). The same researchers also found a lack of positive coverage of breastfeeding in UK newspapers. Many commentators have noted that positive media references to breastfeeding may have beneficial effects on feeding practices (Friel et al., 1989), and the effects of this have been documented in the case of parenting magazines (Foss & Southwell, 2006).

Whilst infant formula milk advertising is prohibited in the UK, point of sale displays, packaging and brand advertising are very visible, which may raise the profile, accessibility and public perception of formula milk feeding as 'normal'. It has been thought that a lack of advertising and less high profile branding in Norway may have contributed to a reduced focus on formula milk feeding (Helsing, 1990). It has also been suggested that positive references to breastfeeding in popular culture might have beneficial effects on public health (Henderson, 2007). It seems likely that this would rely on the discretion of media companies, although in some areas of the world deliberate efforts have been made to achieve effective media based public health improvements (Thorley, 2001).

3 Conclusion

Changing infant feeding behaviour requires a multi faceted approach which tackles the many issues involved. Public health education to date has focussed on improving women's knowledge about the health benefits of infant feeding (Earle, 2002). This appears to have had some effect, but these efforts have not always succeeded in tackling the underlying personal and social barriers to its initiation (Earle, 2002). It has been recognised that health promotion in this area needs to occur not only prior to labour and birth, but before conception (DiGirolamo et al., 2005). Tackling people's deep rooted perceptions about infant feeding is extremely difficult, and I would propose that it would be more effective to commence education at a time when thought processes are more flexible. The aim of public health education around this subject should therefore not only be to increase knowledge but, crucially, to change attitudes towards breastfeeding (Stewart Knox et al. 2003; Dyson et al., 2006), so that it is regarded as both healthy and normal. To achieve this it has been suggested that education begins early (Nicoll & Williams, 2002; Renfrew & Hall, 2008), in primary and secondary schools (Dyson et al., 2006). However, prior to developing breastfeeding education initiatives for children I believe that it is essential to understand the current perceptions of children. This has been the motivation for, and focus of, this research study and will be discussed further in the following chapter.

Infant feeding perceptions of young people and children

The background to infant feeding in the UK is demonstrably complicated and contradictory. Gaining an insight into young people's and children's perceptions[20] of the issues may assist in understanding how adult attitudes develop and identify opportunities for public health education. However, it is impossible to consider young people and children as homogenous groups. Experience, maturity and intellectual development vary greatly and are influenced by age and gender. The infant feeding literature relating to these age groups is broadly divided into research conducted with young people[21] (eleven to 18 years) and children (six[22] to eleven). A range of research has been conducted in both the UK and other developed countries, frequently in school environments with large numbers of participants. The infant feeding perceptions of young people have been studied more extensively than those of children.

1 Young people's perceptions of infant feeding

1 Research relating to young people's infant feeding perceptions

Young people's perceptions of infant feeding provide a valuable link between adult attitudes and those of children. There is a considerable body of relevant research. The literature search comprised research from the UK, relating to young people's view on infant feeding. Relevant papers were sought using MIDIRS, British Education Index, British Nursing Index, Ingenta Connect, JSTOR and Google Scholar™. A number of combinations of search terms were used including 'infant feeding', 'baby feeding', 'breastfeeding', 'bottle feeding', 'formula feeding', 'young people', 'teenagers', 'adolescents', 'education', 'teaching', 'awareness', and 'attitudes'. Once relevant papers were identified all references and citations from them were also followed. Any papers relating solely to pregnant young women or young parents[23] were discounted because it was likely that this group would have received specific infant feeding information or support as part of their antenatal and/or postnatal care. This literature was reviewed throughout the course of the study, with a final search conducted in May 2009. No historical limits were imposed because it was significant to identify when this issue had started to be of interest to researchers. Indeed, whilst studies such as that conducted by De-Gale (1995) may now appear rather dated, they have the benefit of documenting changes in this area of research over time. The relevant literature is presented in appendix 2[24]. Most of the research identified utilised questionnaires or focus groups to elicit information from young people, sometimes resulting in-depth data (Swanson et al., 2006) and elsewhere in sparser detail (Mackay, 1995). The research generally identified young people's existing ideas about infant feeding, although some evaluations of educational interventions were identified.

A large proportion of the research identified involved both male and female students, although some has focussed solely on young women. The range of growth, maturity and experience encompassed by these young people is significant, and it is important to be mindful of this when making generalisations about this group. In common with research involving adults it appears that gender, socio-economic background and educational experiences (Greene et al., 2003) affect young people's infant feeding perceptions. Several recurrent themes emerged from research in secondary schools and colleges, which have clear links with both adult social attitudes to infant feeding, and the emerging ideas of children.

2 Sources of infant feeding information for young people

15. In school

In the UK today there is not a formal requirement for schools to teach information about infant feeding. Various pro breastfeeding organisations, such as the National Childbirth Trust (NCT) have called for its addition to the National Curriculum. Without inclusion in the National Curriculum, which encompasses the compulsory elements of education in the UK, the optional nature of infant feeding in the curriculum at present has led many schools to disregard the subject (Health Promotion Agency, 2006). Research in schools has indicated that only a small minority of young people recalled receiving any form of infant feeding education, and these were predominately female (Gregg, 1989).

Where infant feeding is included in teaching for secondary school pupils it is frequently placed in sessions which relate to sex education (Cruikshank and Regis, 2005). It could be argued that this links the two subject areas in a way which is not conducive to promoting positive, non sexual, attitudes towards breastfeeding. Some researchers have noted that schools have been concerned that breastfeeding education might encourage teenage pregnancies (Lockey & Hart, 2003).

16. Learning at home

*Even amongst peer influenced, media conscious adolescents, family attitudes and behaviours are the main source of influence (*De-Gale, 1995). Young people who were breastfed are more likely than others to anticipate breastfeeding themselves (Greene et al., 2003; Giles et al., 2007). As they are unlikely to remember this[25], it would seem likely that these positive views come from underlying family values or from seeing siblings breastfed (Swanson et al., 2006). However, there is little evidence to show that infant feeding is discussed in many families (Connolly et al., 1998).

17. Seeing babies being fed

Young people's observation of infant feeding is intrinsically linked to their anticipated

feeding preferences when they eventually become parents. Greene et al. (2003) illustrated this link by demonstrating that young people who recalled positive breastfeeding experiences were nearly three times as likely to say that they intended to breastfeed themselves. In general girls appear more likely to notice and remember observing breastfeeding (Connolly et al., 1998). The literature suggests that the lack of opportunity for young people[26] to observe breastfeeding outside of their social circle, perpetuates the cycle as it prevents young people from becoming familiar with the practice (Greene et al., 2003). It appears from the research that young people are far more likely to have observed formula milk feeding than breastfeeding (Gregg, 1989; Gostling, 2003; Greene et al., 2003). Indeed, even where researchers identified young people who had observed breastfeeding, the vast majority had not seen it more than once (Greene et al., 2003). For many young people observations of breastfeeding involved a mother who was a relative or close family friend (Greene et al. 2003), and the event usually occurred in the home of the breastfeeding mother (Giles et al., 2008). Very few participants in any study had seen breastfeeding in other settings, such as a restaurant (Giles et al., 2008). There was a lack of comment in the literature describing the locations in which young people reported observing formula milk feeding.

18. Adolescents and the media

Young people are often very aware of popular culture and media, and it is therefore important to acknowledge the role that this might play in shaping their ideas. In the absence of robust and effective school education programmes, it seems probable that young people may be strongly influenced on the subject of infant feeding by the media (Connolly, 1998). A large proportion of young people across the age range reported seeing infant feeding on television. Swanson et al. (2006) noted that 71% of the 11 to 18 year olds in their sizable study[27] recalled seeing either breastfeeding or formula milk feeding in film or television. Indeed, in this research more of the participants had seen breastfeeding on the television than they had in ‘real life’ (Swanson et al., 2006). Bearing in mind Henderson et al.’s (1999) findings regarding the media’s propensity to refer to breastfeeding negatively, this is perhaps rather concerning. The risk of this was possibly demonstrated by Bailey and Shepherd (2007), who debated whether negative breastfeeding attitudes of a particular group of young people in their study may have been linked to a specific documentary about long term breastfeeding which was aired at the time of the research.

3 Young people’s perceptions of infant feeding

Research conducted to date with young people has identified that whilst some may be quite knowledgeable about infant feeding (Gostling, 2003) others may have a number of misconceptions around the subject (Swanson et al., 2006). Understanding the differences between breast milk and formula milk is an essential base on which to begin health education. Whilst young people vary considerably in their level of knowledge it appears that many regarded breastfeeding as healthier than formula milk feeding (Gregg, 1989), and associated breastfeeding with “naturalness” (Connolly, et al., 1998, p.148). In

addition, a smaller number of research participants recognised the maternal health benefits of breastfeeding and felt that it would enhance the bonding process (Giles et al., 2007).

Despite a general recognition of the health benefits of breastfeeding, a large proportion of young people in one study believed that formula milk feeding was “good enough” (Cruikshank & Regis, 2005, p36). This is perhaps perpetuated by the lack of information regarding the problems and limitations of formula milk feeding. Some young people commented on this issue, identifying that knowing ‘breast is best’ was not sufficient, and noting that they felt it was important to be advised about the risks of formula milk feeding (Allen, 2008). Teaching in schools presents an opportunity to both impart practical information, and address negative attitudes and misconceptions towards breastfeeding (Connolly et al. 1998, McIntyre et al., 1999). However, Forbes et al. (2003), suggest that it is vital to aim teaching at emotional and attitudinal factors, because these are often difficult to change later in life.

It is worth noting that Mackay (1995), in common with researchers working with adults (Stewart-Knox et al., 2003), noted contrasting attitudes towards breastfeeding between young people from different social and economic backgrounds. However, Connolly et al. (1998) found no discernable differences.

Young people appear to have adopted the common belief that breastfeeding is less convenient than formula milk feeding (Gregg, 1989), which is perceived as being “just easier” (Allen, 2008, p334). The belief that breastfeeding is more difficult than formula milk feeding has been noted by other researchers (Cruikshank & Regis, 2005). It is clear that breastfeeding is often believed by young people to be not only difficult but also time consuming and painful (Connolly et al., 1998).

Embarrassment is clearly a major issue for young people when considering breastfeeding (Gregg, 1989). As with adults in the population this view seems to be related to the notion that breasts are primarily sexual. This issue may be particularly significant for young people because of the physical insecurities caused by their maturing bodies (Swanson et al., 2006). Understandably this appears to make it difficult for them to envisage themselves, or their future partners, breastfeeding (Greene et al., 2003). Some researchers noted that boys were more likely to anticipate their own babies being breastfed, whilst girls seem to feel more ambivalence, perhaps because they feel more personally affected by the practicalities (Connolly et al., 1998; Swanson et al., 2005).

Embarrassment makes it difficult for young people to be comfortable about seeing women breastfeeding (Swanson et al., 2006) and palpable distaste for public breastfeeding is a recurrent theme in the literature (Gregg, 1998). In Northern Ireland 63% of teenage participants[28] felt that it should actually be prohibited (Greene et al., 2003). Again the significance of positive personal observation of breastfeeding is clear because this inclines young people to be far more positive about feeding in public places (Greene et al., 2003). However, the research suggests that positive experiences are those in which the breastfeeding mother is familiar, particularly where these events occur

in the domestic environment (Swanson et al., 2006).

Some of the concerns which might be anticipated from young people were not found to be significant in the research. There was only a slight level of interest in whether different infant feeding methods were 'trendy' or modern (Mackay, 1995). Most young people in the research did not seem to consider the cost of formula milk feeding to be of importance, and they did not mention the comparative financial costs of formula milk feeding and breastfeeding despite the significant costs of formula milk[29] (Berridge et al., 2004).

19. Thinking about the future

A number of researchers have asked young people if they felt infant feeding education was appropriate. Some of the earliest research in this field reported that 97% of adolescents wanted mixed gender classroom teaching on the subject (Gregg, 1989), and in many areas this has yet to become reality. In general young people are keen to receive education around this subject (Greene et al., 2003), although there is evidence to show that girls believe the subject to be considerably more relevant than boys (Lockey & Hart, 2003). Some participants suggested that they would prefer infant feeding to be taught by health professionals rather than teachers (Greene et al., 2003), a view which also appears to be reflected by the latter (Bailey & Shepherd, 2007).

Some researchers have asked young people to identify how they think they will feed their infants once they become parents themselves, and many had already given the issue some consideration (De-Gale, 1995). Indeed, Purtell (1994) found that by their mid teens young women often appear to have formed their infant feeding attitudes. This presents challenges for public health education on the subject with this age group. Young people's feeding intentions have frequently failed to match their knowledge of the benefits of breastfeeding (Mackay, 1995; Gostling, 2003; Greene et al., 2003; Swanson et al., 2006). This frequently appeared to be less relevant to them than social factors, which often proved to be a strong disincentive (Lockey & Hart, 2003). This has been demonstrated by a number of researchers, and is exemplified by Mackay who noted that whilst 90% of young people thought breastfeeding was preferable only 51% thought they might do so themselves when they had children (Mackay, 1995). Not only is there a general discrepancy between knowledge and feeding intention, but this appears to be particularly marked amongst certain groups of children. Attitudes to breastfeeding appear to be least positive amongst young women nearing adulthood (Cruikshank & Regis, 2005).

4 Conclusion

Infant feeding research involving young people offers some insights into their perceptions of feeding methods and their awareness of the options available. It also demonstrates where young people learned about the subject during their childhood, and the meaning that these experiences had for them. This provides detailed information which may be difficult to elicit from children themselves, and offers a 'bridge' between children's and

adults' infant feeding awareness that aids our understanding. Crucially the research identifies the differential between young people's infant feeding knowledge and attitudes, thus pinpointing the key problem associated with offering education around a potentially 'sensitive' subject to this age group. As such it offers further evidence to support the importance of identifying children's perceptions of infant feeding.

2 Children's perceptions of infant feeding

Children's perceptions of the world are rooted in the experiences gained from their social network, schooling and the culture in which they live (Rogoff, 1991). In addition, individual children have an active role in creating structure and meaning from their experiences (Hill et al., 1996). This is perhaps especially so of infant feeding, which is closely linked to the home and embedded in family life, yet subject to strong social pressures (Baumslag & Michels, 1995). It is believed that children's reactions to these influences begin to form into firm ideas during childhood. Indeed, a review of research in this area has demonstrated that resistance to the idea of breastfeeding appears to begin during this period (Ineichen et al., 1997). Renfrew and Hall (2008) suggest that it is important to begin to teach children that breastfeeding is the norm, and a number of other researchers and commentators have advocated commencing infant feeding education in primary schools (Mackay, 1995; Russell et al., 2004; Gostling, 2003; Greene et al., 2003, Dykes, 2003).

1 Existing research

A literature search identified research carried out in the UK relating to primary school children's perceptions of infant feeding. This was undertaken using MIDIRS, British Education Index, British Nursing Index, Ingenta Connect, JSTOR and Google Scholar™. A number of combinations of search terms were used including 'infant feeding', 'breastfeeding', 'primary school children', 'school children', 'young children', 'education', 'teaching', 'awareness', and 'attitudes'. No limits were placed on the date of the research, but it was limited to the UK and to children between the ages of four and eleven. It proved very difficult to find papers relating to the subject area. In addition to the literature search the authors of Russell et al. (2004) and Dykes (2003) were contacted to discuss their work and knowledge of the literature in this field. In total five documents were located. Russell et al. (2004) and Mackay (1995) proved to be the only authors referring directly to primary school children's awareness of infant feeding (appendix 3). Dykes' (2003) evaluation of breastfeeding practice projects reviews unpublished work conducted by Mavis Kirkham relating to an educational intervention (appendix 4). The other two items listed are less substantial and discuss informal educational interventions, or planned interventions relating to breastfeeding (appendix 4). These did not identify children's existing knowledge around the subject. Therefore much of this section will concentrate on the studies by Mackay (1995) and Russell et al. (2004).

The research undertaken by Mackay (1995) and Russell et al. (2004) differ from each other in almost every respect in terms of methods, participants and aims. Mackay's (1995) research was conducted with ten and eleven year old children at the upper end of the primary school age range. The research involved 117 participants, who answered a questionnaire consisting of 13 questions. Some of the questions related to experiences of seeing different forms of infant feeding. Several questions in the questionnaire were related to existing knowledge of infant feeding. All of the questions required 'yes/no' responses, and there was no 'don't know' option. Bearing in mind the minimal experience or education reported by children on the subject I would suggest that this may have resulted in the children speculating in their responses (Waterman et al., 2001[30]). The remaining questions were intended to establish children's attitudes to breastfeeding. Some of these, for instance "Is breastfeeding more natural?" might be considered to be 'leading' (Morrow & Richards, 2002), thus presenting the possibility of bias and detracting to some extent from the findings. This method of questioning children about subjects which have not been taught carries with it an inherent risk of 'failure' for the child (Hill, 2005). Indeed, no comment is made regarding consent or ethical considerations. Children's responses to the questions are presented as percentages without further statistical analysis. Some of the issues identified here are possibly the result of having to document the research in a very short report. Additionally, changes in research practice, particularly when working with children, mean that this approach possibly now appears less appropriate than it did at the time of the study.

By contrast, Russell et al. (2004) involved a class of 23 six year old children in their research. The children participated in focus groups, which incorporated a breastfeeding observation and a 'draw and write' exercise. Ethical approval and parental consent was sought for the study and the paper includes considerable detail regarding the background to the work, study design, fieldwork and data analysis. The data collected were analysed qualitatively through the coding of the data and analysis by theme. The main themes are presented in the paper, complemented by many quotes from the children and some illustrations. The study is limited in its representativeness because of the single age group, but presents several key points in relation to breastfeeding awareness in children. They noted the prevalence of formula milk feeding in children's responses, the problems of terminology around breastfeeding and a misunderstanding of some elements of infant feeding. The authors acknowledged that further research was needed to explore primary school children's attitudes to infant feeding in more detail.

2 Learning about infant feeding

20. School

As discussed previously, there is no requirement for schools to include infant feeding in their primary school curriculum. Indeed there is possibly considerable resistance to doing so (Dykes, 2003). Some researchers have noted that schools are reluctant to introduce the subject because of its association with sex education (Dykes, 2003). It is therefore

not surprising that school based infant feeding education is not reported by many children in existing research. Even in schools where teaching has occurred, it appears that it is recalled by only a small proportion of children (Mackay, 1995), suggesting that either a large number of children were absent or the session made little impact on them. Anecdotal comments, such as that made by Darwent (2003), also suggest that in some cases the subject is taught without the clear objective of promoting best infant feeding practice, which may result in misinformation.

Lack of infant feeding education in primary schools may be an unfortunate omission since commentators have noted children's enthusiasm for the subject (Wells, 2003), and their co-operation with educational activities involving drawing and discussing infant feeding (Russell et al., 2004). Researchers have also suggested that children in primary schools may be very receptive to new ideas about infant feeding (Russell et al., 2004; Cruikshank & Regis, 2005).

21. Home

Ascertaining how a child was fed themselves offers some information about how particular families feed their babies and what influences children may have absorbed. Some researchers have requested this information from parents when working with young children (Russell et al., 2004), whilst others have gained data from children (Mackay, 1995). A far higher proportion of mothers reported their children had seen formula milk feeding than breastfeeding in Russell et al. (2004), which was reflected, in part, by the responses of children.

22. Media

A far smaller proportion of children, compared to young people, report having seen infant feeding on the television (Russell et al., 2004). However, they appear to have gained a more balanced and positive impression of breastfeeding and formula milk feeding from television than has been noted amongst older children or adults (Russell et al., 2004). I would suggest that this may be because of the nature of the carefully edited programmes to which young children are generally exposed. Interestingly, some of the same sample of children also reported seeing images of feeding in books, mainly relating to formula milk feeding (Russell et al., 2004). This is supported by Altshuler's (1995) commentary on breastfeeding in children's books. It is also noteworthy that bottles appear frequently as illustrations in children's books, as noted by Altshuler (1995) in her exhaustive exploration of the subject. Whilst this research was conducted some time ago, and a number of books now picture breastfeeding, some of those listed by Altshuler are 'classics'[31] and still in circulation.

The advertising of formula milk has been banned in the UK since 1995 [32] (HM Government, 1995) has altered the volume and content of formula milk feeding imagery available on television and in printed form. However, it is clear that there are still many sources from which children may gain familiarity with the concepts of feeding bottles and formula milk feeding.

3 How are babies fed?

23. Knowing how babies are fed

More children refer to formula milk feeding than breastfeeding in the existing research, with a very small proportion of children demonstrating an awareness of breastfeeding without being prompted (Russell et al., 2004). In most of the studies involving children (Mackay 1995, Wells 2003, Dykes 2004) and all those involving young people, the research has assumed an awareness of both formula milk feeding and breastfeeding. It is therefore difficult to gain an impression of the basic level of existing knowledge amongst the participants in these studies.

Children's qualitative judgements about breastfeeding and formula milk feeding have not been widely reported. Amongst eleven year olds there appears to be widespread awareness that breastfeeding is better for babies, although there is some inconsistency in the children's responses to questions (Mackay, 1995). As with adolescents and adults an understanding of the benefits of breastfeeding has not necessarily translated into a stated preference for breastfeeding their own children in the future (Mackay, 1995)

24. Describing infant feeding

A significant factor in children's explanations of infant feeding appears to be a lack of 'common language' around breastfeeding, which has resulted in a tendency to describe or mime the practice instead (Russell et al., 2004). This was identified as a potential issue in the delivery of infant feeding education to children (Russell et al., 2004). It also seems that even when parents have reported that children have observed breastfeeding the children themselves did not always reflect this in their art, and sometimes draw or refer to formula milk feeding instead (Russell et al., 2004).

25. Thinking about infant feeding

Amongst the small number of children in Russell et al.'s study (2004) some were able to describe particular points in detail. In general they saw infant feeding as a basic requirement for growth and health for babies, rather than for comfort, physical contact or development. No detailed comments were made by any researchers regarding this aspect in research involving young people.

Some primary school children have felt that breastfeeding might be "rude" (Wells, 2003, p15), especially children at the upper end of the primary school age range (Mackay, 1995). However, younger children do not seem to perceive breastfeeding as embarrassing to the same degree as young people or adults. Their acceptance of public breastfeeding has appeared to be limited more by practicalities, such as rain, and they suggest a wide range of places to feed which included public areas (Russell et al., 2004). It is possible that adult aversion to public feeding had some impact though, as some

appear to assume that babies would be bottle fed when outside (Russell et al., 2004). Younger children's lack of discussion about this aspect of feeding is notable because of the contrast with other groups in the population.

The perception of many young people that breastfeeding might be inconvenient did not seem to be of concern to younger children. Russell et al. (2004) noted that six year olds seemed very confused by the 'timing' of infant feeding, and identified appropriate feed times as being the same as adult meals – hence the title of the paper "Breakfast, lunch and dinner". However, their references to inconvenience all involved the problems of getting up to bottle feed at night or, as discussed earlier, the issue feeding outside the home, events which might not coincide with meal times (Russell et al., 2004).

4 Potential for further research

The need for further research into the infant feeding perceptions of primary school children has been noted by several researchers (MacKay, 1995; Dykes, 2004; Russell et al., 2004). I would suggest that understanding children's existing awareness, recognising their anxieties, and exploring their use of images and language is key to assessing the potential for public health education. It is clear that it is not possible to make assumptions about the perceptions of this age group based on data from young people or the adult population. This research aims to explore children's existing perceptions regarding infant feeding, and identify how these change across the primary school age range. However, undertaking research with children can be problematic, both in terms of practical difficulties, such as gate-keeping (Dykes, 2004), and with regard to methodology and ethics (Backett-Milburn & McKie, 1999). As such, understanding children's development, and recognising the fundamental issues inherent in working with them, are essential in order to ensure that research is effective. The following chapter addresses these points.

Research involving children

1 Introduction

Within the last 20 years there has been a change from a paternalistic approach to seeking the opinions of children and young people (Hunt, 2004), towards recognition of their right to be heard and participate in decisions which affect their lives (Cree et al., 2002). This drive was formalised in the 1989 UN Convention on the Rights of the Child. In England and Wales the 1989 Children's Act (Department of Health, 1989), and the 2004 National Service Framework for children, young people and maternity services (Department of Health, 2004) demonstrated growing concern for children's views regarding legal and social work decision making (Cree et al., 2001). Developments in practice in health and education, and the publication of research papers and guidelines covering the ethics and practice of research involving children have occurred over the same period (Ward, 1997). One of the motivations for including children in research activities is the recognition that they frequently have different concerns and perspectives to those of adults (Hill, 1997). They have ideas and opinions about the world around them which may or may not be shared by adults, and are valuable because they represent their own unique experiences (Greene and Hill, 2005). After a slow start it is now widely accepted that children should be involved in research (Morgan et al., 2002), although some commentators have urged caution in assuming that participation is always in children's best interests (Roberts, 2000). In addition, attempts at achieving children's effective inclusion and meaningful participation in research and policy making have not always been effective (Cavet & Sloper, 2004).

This chapter aims to identify the key elements concerning children's[33] participation in research. It commences with a background to children's development, which will aim to place their participation in context. The issues of ethics, participation and research methods, all of which require particular consideration when working with children, will then be discussed. A review of the literature specifically pertaining to this thesis is expanded in the next chapter.

2 Children

It has been noted that children's development has a significant influence on their participation in research, and on the data collected (Ireland & Holloway, 1996). Identifying the unique characteristics of children, and the changes which occur during childhood would therefore appear to be an essential element of effective research. It would be presumptuous to suppose that the range and complexity of children's development could be effectively explored within the confines of this sub chapter. However, a brief discussion of historical and contemporary views on children's reasoning and means of expression will offer background information for this child-centred study.

1 Children's development

26. Researching children's development

Throughout history views of children have changed significantly, from early notions of the child as a powerless 'blank canvas', to the development of the concept that children possess many basic thoughts and instincts, which emerge as they mature (Smith et al., 2003). Darwinian theories established the idea of child development modelled on human evolution, and with these came the concept of using experiments to prove theory. A range of experimental techniques emerged, although usually with children not as the participants but as the objects of research (Maunther, 1997). Much early work investigated children's development, often out of their normal environment, once described as "the science of the behaviour of children in strange situations with strange adults" (Bronfenbrenner, 1979, p19). A shift to observing children in natural settings followed (Durkin, 1995), which has yielded valuable information, despite the methodological challenges involved in working 'in the field' (Smith et al., 2003). From this research a number of different schools of thought emerged, some of which were conflicting, regarding the nature of children's development. In recent years many working in this field have preferred to use elements of different theories to explain children's development (Berk, 2006). These are highlighted below.

2 Theories of ages and stages

Childhood is not a fixed entity but a socially created phenomenon, which comprises artificial temporal boundaries, assumptions regarding children's cognition and expectations regarding their behaviour (Prout and James, 1990). Children are frequently referred to collectively as a social group (James et al., 1998), which belies the evidence that children are individuals who develop and change immensely over time (Eccles, 1999). It also fails to acknowledge a growing understanding of the diversity of childhood experience (Prout, 2002). The myth of children's homogeneity has been commented on often in the literature (Hutchby & Moran-Ellis, 1998; James et al., 1998; Dockett & Perry, 2007). New methods which research 'with' rather than 'on' children may well have been influential in expanding understanding of children as individuals (Morgan et al., 2002). Recognising that they develop in a unique way according to their social, psychological and physical circumstances, and the opportunities and experiences to which they are exposed (Eccles, 1999).

There has been a tendency to focus on 'ages and stages' when theorising on children's development (Berk, 2006). This belies the complex nature of child development, and the factors which drive it. Over time, a number of theories have emerged regarding the stages of child development, their nature and underlying causes. These fall into five main themes; physiological, psychodynamic, behaviourist, humanistic and cognitive (Grieg et al., 2007). Berk (2006) notes that the most influential of these theories have been those

developed by Freud, Kohlberg, Piaget and Vygotsky. These theories vary in many respects, often emphasising different areas of development. Some child development theories, such as those of Freud and Erikson are focussed on psychodynamic theories of emotional and social development. Others, such as Piaget's and Vygotsky's cognitive developmental theories, stress the processes of children's learning and thinking (Berk, 2006). Many child development theories have focussed on discontinuous development, where stages are separate, sequential and clearly defined.

It has been increasingly recognised that children's learning and cognition is gradual and individual, and does not occur in steps governed wholly by age or developmental stage. As such, applying the cognitive expectations of particular stages (see 4.2.3 and 4.2.4) to children based solely on age, may lead to unwise assumptions about their ability to reason, understand and form opinions (Ireland & Holloway, 1996). Theories now stress the importance of the acquisition of knowledge and personal experiences in governing children's levels of understanding and reasoning (Bird & Podmore, 1990). It is also now recognised that child development models are socially and culturally specific (Punch, 2002). It is clear that children are not an homogenous group. They differ greatly between not only age groups, but also as a result of gender, social group and life experience.

3 How children learn

The debate around how children learn is complex, but several key points can be identified which are relevant to research involving them. A child's brain appears to experience growth spurts, which occur at similar times to periods of rapid cognitive development. However, it is uncertain whether these changes are time dependent or related to the processing of experiences, as the human brain appears to be highly reliant on receiving environmental input in order to develop (Smith et al., 2003). Little is known about the mechanics of children's learning, and our understanding focuses on their knowledge at different stages (Siegler, 2000). However, there is general agreement that children learn according to their experiences, and construct knowledge by experimenting on the world around them and observing the outcomes. They are assisted in this by their social interactions with others, and learning is often a joint construction between a child and more experienced people in their social world (Wood, 1998). Parents and families play a key role in this, although children also learn from other sources, and increasingly from their peers as they mature (Smith et al., 2003). How much of their interaction with the world is the result of environmental input, and how much is inbuilt, is the subject of the infamous and long running nature versus nurture debate (Keenan, 2002).

4 Memory

Research has demonstrated that reasoning, knowledge and memory are closely related (Wesson & Salmon, 2001). Memory aids the acquisition of knowledge, but is also enhanced by having knowledge and experience to which to attach, and make sense of, new facts (Smith et al., 2003). Everyday events tend to be recalled in a general pattern,

but it is more difficult to pin point individual examples of routine events (Wesson & Salmon, 2001). Evidence shows that children do not recall events in the same way as adults (Smith et al., 2003). It appears that they are more open to suggestion than adults, perhaps because they have fewer strategies for paying attention and do not encode information as effectively or tie new observations to existing knowledge as easily (Smith et al., 2003). Children may be unable to distinguish where and when they gathered information from as clearly as adults. As a result, known facts and ideas gained elsewhere, such as from an interviewer, or previous experience, may be combined to form a 'complete' memory (Waterman et al., 2001). Research has demonstrated that this is a particular problem when children are asked yes/no questions or 'leading' questions, although they recognise 'nonsense' questions (Waterman et al., 2000). However, in 'free recall', where no guidance is given by an interviewer, children recall fewer facts but are more accurate than adults. This presents problems for researchers, who often find it difficult to elicit much information from children using free recall, even where they know the child to be knowledgeable (Smith et al., 2003).

5 Children's reasoning and logic

Knowledge and experience are the building blocks on which reasoning and logic are based (Eccles, 1999). Even at the age of two children are capable of understanding simple cause and effect situations (Grieg et al., 2007). By about six years old they become skilled at combining knowledge and experience, and achieve a crucial shift in cognitive skills, when they begin to reason and develop key thinking and conceptual skills (Eccles, 1999). Children use "scripts", generic sequences which lead to particular outcomes, and "schema", basic plans of places or objects, and apply these to new situations to structure their reasoning (Smith et al., 2003, p440).

As children mature, between the ages of seven and eleven, they are also able to reason in a more advanced way, not necessarily entirely based on personal experience, and they can appreciate that others may have different experiences and points of view. These higher levels of self awareness are linked to an increased capacity for abstract thought (Eccles, 1999). In addition there is a move to hypothetical reasoning, and the use of a logical approach in problem solving (Smith et al., 2003).

6 Social worlds

Pre-school and very young primary school age children generally exist within the social environment provided by their parents, extended family and friends. In this period it is essential that children receive at least the basic level of intellectual stimulation, attention and affection to ensure healthy mental and physical development (Smith et al., 2003). It is uncertain to what extent similarities between parents and children are due to the patterns of behaviour laid down at this time or to genetic or wider environmental factors (Smith et al., 2003). After about six years of age children's social worlds broaden and they are increasingly influenced by their peers. By the age of ten this influence may

become very pronounced as they feel the need to conform to their peer group (Eccles, 1999), and in many cases children socialise little with others outside their own year group (Smith et al., 2003).

Children's social identity is also governed by gender, which is a significant influence even in pre-school (Eccles, 1999). Children learn gender stereotyped behaviours and attitudes at an early stage, and by the middle years of primary school most socialise and play in gender exclusive groups. By 10 years of age they largely interact with a 'clique' comprising a few children of the same gender (Smith et al., 2003).

7 Human beings or 'human becomings'?

The general consensus amongst researchers today is that children are not simply miniature adults, whose thoughts and feelings can be assumed based on adult points of reference (Greene & Hill, 2005). Neither are they human beings with deficiencies (Pridmore & Bendelow, 1995), or 'human becomings' (Balen et al., 2006), whose function is to prepare for adulthood. Instead researchers have slowly been moving towards viewing children as a distinct social group, indeed a minority group, with a unique culture (Hill, 1997) and particular ways of interpreting the world around them (Hood et al., 1996). However, it has been noted that in acknowledging children to be different to adults there is a risk of 'pigeonholing' children based on age related developmental models and viewing them as an homogenous group rather than individuals (Greene & Hill, 2005). The issues involved in achieving this delicate balance are apparent when discussing some of the important considerations for those undertaking research with children.

3 Ethics

1 Research ethics

Ethical practice is an essential pre-requisite of any research, especially that involving human subjects. Ethics have become an inherent element of modern research in health or social sciences, universally accepted by researchers, although with varying degrees of enthusiasm or resignation (Christensen & Prout, 2002). The development of ethical governance in the UK, and an emerging literature[34] around the subject, has further embedded it into modern research practice. Researchers working with potentially vulnerable groups, such as children and young people, often need to give consideration to additional specific ethical issues (Thomas & O'Kane, 1998).

2 Children and ethical considerations

27. Ethical governance

Identifying acceptable research risks, and balancing these with the benefits of research to individuals and society, is part of the remit of Research Ethics Committees in the UK (Edwards et al., 2004). This is an essential role and can be effective in both protecting researchers and participants, and in improving the quality and efficacy of research (Edwards et al., 2004). However there is a contradiction between ethical governance which is, in some cases, perceived by researchers as being overly paternalistic (Elliott & Hunter, 2007), whilst also appearing rather uncoordinated in its approach to research involving children. This is especially the case where research involves healthy children. In these cases University Research Ethics Committees, which differ significantly between institutions (Macduff et al., 2007), may be consulted rather than NHS Local Research Ethics Committees (LREC). As such, requests to different committees for ethical review may vary depending on the opinion of researchers or funding bodies (Truman, 2003).

Some researchers express a view that LRECs may find it difficult to respond flexibly or to provide appropriate guidance for those researchers working outside the NHS owing to their focus on medical models of research (MacPherson & Lattin-Rawstrone, 2005; Hollowell et al. 2008). Research where qualitative or novel methods have been used has indicated this as a particular problem (Larkin et al., 2008). This may complicate ethical review of research involving children because many researchers are moving towards non-traditional, child-centred methods (Ramcharan & Cutcliffe, 2001). These issues may lead to conflicts between researchers and Research Ethics Committees, which are widely reported in the literature (Edwards et al. 2004, MacPherson & Lattin-Rawstrone 2005, Macduff et al. 2007).

28. Do no harm

Social research always constitutes an intrusion into people's lives (Guillemin and Gillam, 2004). One of the problems with involving children is the potential for exposing them to ideas or situations which they have not previously encountered, and which may potentially be harmful, painful or distressing (Freedman et al., 1993). This may be a particular concern in health research, especially where the subject matter may be judged to be 'sensitive' (Lee, 1993). Some researchers seek to minimise harm by using activities that are child-led, where children are not exposed to ideas or experiences beyond those which they are already familiar with, and the research seeks only to find out what the child already knows and is willing to volunteer (Punch, 2002). However, Mishna et al. (2004) point out that qualitative research may be more inherently 'risky' due to the unstructured nature of participation. I would suggest that perhaps this depends on the subject matter and the exact approach used. Ensuring adequate follow up and support from appropriate professionals is also noted as an important feature of ethical research (Driessnack, 2006). In addition, whilst there may be a risk of harm when participating in research, children may also benefit, even though this may be unquantifiable. It is not unreasonable to suppose that, like adults (Scott et al., 2002), children may derive satisfaction from altruistic participation.

29. Power imbalances

In everyday life there exists an imbalance of power between adults and children (Greene & Hill, 2005). This is also present, and possibly magnified, by the formalities of the research process. Morrow and Richards (2002, p98) note that "the biggest ethical challenge to researchers working with children is the disparity in status between adults and children". Many researchers, being conscious of this issue, have attempted to redress this balance through "ethical symmetry" (Christensen & Prout, 2002) and the use of child-centred research methods. However, as Thomas and O'Kane (1998) and Balen et al. (2006) identified, in some cases the balance of power is skewed not by researchers but by others connected with children, who may restrict their participation through gate-keeping.

30. Anonymity and confidentiality

A central tenet of research is that all participants must have the right to anonymity and confidentiality (Corti et al., 2000; Flewitt, 2005). In research involving children this can be difficult to achieve owing to issues of access, space and concerns about child welfare. Adults do not always consider a child's right to privacy, either because of their perceptions of children's social position and identity (Maunther, 1997; Balen et al., 2006), or as a result of concerns about the child's safety and a desire to protect them (Holland et al., 1996; Balen et al., 2006). There are also cases where adults or other children may attempt to censor children's contributions during research for various personal reasons (Maunther, 1997; Murray, 2005).

Some research methods employed may make anonymity and confidentiality difficult to achieve, especially in relation to group work or qualitative research with small groups of children who may be identifiable (Kitzinger, 2005). Ironically the most significant risk to confidentiality is perhaps the issue of child protection, which places limits on confidentiality and creates a moral and professional conundrum for researchers (Cree et al., 2002, Williamson et al., 2005).

31. The limits of confidentiality

Guaranteeing confidentiality when participating in research is a difficult issue, particularly when working with children. Whilst confidentiality is usually the researcher's intention, issues of child protection may render this impossible, and indeed a guarantee of confidentiality may place them at odds with their responsibilities as health or education professionals (Williamson et al., 2005). In studies involving children, researchers are generally advised to "make provision for the potential disclosure of abuse" (British Sociological Association, 2009). As such any discussion about confidentiality requires the researcher to explain the concept of "confidentiality within limits" (Alderson & Morrow, 2004) to participants. This once again presents the issue of 'do no harm', because suggesting concerns to children regarding potential harm or child abuse may cause anxiety, and may expose them to concepts outside their experience (Williamson et al., 2005). In this case researchers may find that their handling of this subject is at odds with

the policies and guidelines of the schools or hospitals in which they work, where the limits of confidentiality are usually assumed and not defined (Lansdown, 2000). Some researchers may attempt to resolve this situation by not mentioning, or promising, confidentiality to children. However, this is complicated in the UK by a "duty of confidentiality" (Corti et al., 2000, p3), established in case law.

4 Participation in research

1 The nature of participation in research

In the past children were frequently the objects of research and were experimented on in ways which sometimes failed to take account of their rights as individuals or their needs as children (Hill, 1997). Social, cultural and educational changes in recent years have encouraged "an explosion" in research around children's experiences, opinions and awareness (Hill, 2006, p72). This change has occurred in parallel with, and indeed has necessitated, the adoption of more child-centred approaches, often utilising qualitative methods (Horstman et al., 2008). Using these methods researchers often aim to enable children to be participants in research. Whilst this perhaps reflects the intentions of researchers, and the respect that they have for those involved in a study, participation is not always achieved (Grieg et al., 2007). As Grey (2004) argues;

> "Authentic participation means immersing people in the focus of the enquiry and the research method, and involving them in data collection and analysis" (p374).

Using this definition, achieving participation is beyond the capacity of many research studies. Due to either the views of the researcher, or the contribution of gate-keepers, true participation is minimised because adults largely design the research, control data collection and undertake the analysis. Here children perhaps become subjects rather than participants (Smith et al., 2003). As will be discussed later in the chapter there is some debate regarding the degree to which authentic participation may ever be achieved whilst still achieving effective academic research (Mayall, 1994). As participation is the stated aim of most qualitative research involving children, this is the term which will be employed in this chapter, although not all the studies referred to achieved full participation as described above.

2 'Gate-keeping'

The concept of gate-keeping was first identified by social psychologist Kurt Lewin (1951). Over time, interpretation of the term has been adopted in many contexts and it now has

different meanings in different academic disciplines (Heath et al., 2007). Whilst there is a lack of definition of gate-keeping in the health and education literature, it appears that gate-keepers are generally perceived as people in administrative or influential positions who control, either formally or informally, the communication between professionals (Harris et al., 2008), or between professionals and the public (Lu, 2007). In the case of research they may act to control access to participants and/or affect the research process. This may, or may not, facilitate the progress of research depending on whether the gate-keepers and researchers aims are aligned (Emmel et al., 2007).

32. Gate-keepers in research involving children

A number of researchers working with children have commented on the rôle of gate-keepers in their studies (Russell et al. 2003, Dykes 2003, Emmel et al., 2007, Heath et al. 2007). Some of these reports reflect a negative experience, but it is probable that gate-keeping is less commonly mentioned when it is facilitative rather than obstructive. It is important to acknowledge gate-keepers as performing a positive function, in providing protection from potentially damaging research (Masson et al., 2000), whilst recognising their power to censor and silence participants (Cree et al., 2002), especially those who have limited personal power and influence.

Research involving children offers the potential for involvement from many gate-keepers because of the 'supervised' nature of children's lives. The most common form of gate-keeping reported by researchers was from Local Research Ethics Committees. This occurs in a formal, documented and controlled manner, unlike most gate-keeping which is informal (Lockey and Hart, 2003). Those working with children and young people have documented experiences of gate-keeping from Head Teachers (Health Promotion Agency, 2006), teaching staff (Lockey and Hart, 2003), non-teaching staff (Cruikshank & Regis, 2005) and unidentified members of education establishment staff (Mackay, 1995). Many of these experiences appear to have hampered the research process, although in other instances gate-keepers play a positive part in progressing work for both researchers and participants (Emmel et al., 2007). The National Curriculum has also been identified as a form of gate-keeper by providing an effective block to research activities which do not fit within its remit (Dykes, 2003).

In hospitals and health care settings doctors and managers are considered to be the principal gate-keepers (Hood et al., 1996). These gate-keepers frequently prevent, promote or otherwise influence research activities (Masson et al., 2000). In all settings, but especially domestic environments, parents also acted as gate-keepers. Hood et al. (1996) noted that mothers were frequently the 'first line' in gate-keeping, but were generally more positive and less likely to block children's participation than fathers.

It must also be considered that researchers are themselves significant gate-keepers, often entirely controlling the opportunities offered for participation, and managing the collection, analysis (Cree et al., 2002) and dissemination of data.

33. Gate-keeping place, space and time

One of the issues for researchers who wish to consult children is the problem of gaining access to potential child participants. Even when access has been agreed with gate-keepers, the logistics of undertaking the research may be complicated by issues of time and space. Owing to the physical location of children and young people much research involving them is carried out in schools, youth organisations or hospitals. On occasion research may be conducted in their own homes, although children are still normally recruited in one of the above settings (Maunther, 1997). As a result it is common to engage with children in environments which are controlled by adults, and where the behaviour of researchers and children are controlled by a pre-existing set of written, and unwritten, expectations (Christensen and Prout, 2002).

In addition, issues of space and privacy enable gate-keepers to affect research activities by influencing the relationships between children and researchers (Hood et al., 1996). Even where agreement for research activities has been reached, fitting in with the schedules of schools and hospitals clearly has an effect on a study, giving gate-keepers a significant level of control and leverage (Cricthlow, 2005). Negotiating space and time to conduct research can be very challenging (Heath et al., 2007). Attempting to maintain good working relationships with gate-keepers, whilst ensuring confidentiality and protecting the smooth running of the research, has also appeared to be a concern for some researchers working with children (Christensen and Prout, 2002).

Researchers working with children within their own place of employment, such as schools or hospitals, may find it easier to gain access to participants, and gate-keeping to be less of a problem because they are already 'in-situ' (Mulhall, 2003). I would suggest however that there might, in these cases, be special concerns regarding the potential for either real or perceived imbalances of power between the researcher and child.

3 Permission, consent and assent

34. Parental permission

Whilst issues around consent are related to ethics, they are also associated with research participation in terms of parental[35] gate-keeping. Gaining parental 'consent' is a key element for researchers, LRECs and other gate-keepers. In the past parental permission was termed as consent or 'proxy consent' but it is now recognised that an individual can only give this on behalf of themselves and not on behalf of others, and therefore 'permission' is a more appropriate term (Koocher and Keith-Spiegel, 1990). Parents are almost always expected to be approached for permission before children are involved in research, and indeed the UK courts have upheld their right to be so (Wiles et al., 2006). The mechanisms for obtaining parental permission represent both a form of protective gate-keeping and a recognition of the ambiguity which exists regarding children's competence and rights. These issues affect the perceived legitimacy of

children's consent, especially for very young or disabled children (Cocks, 2006). However, it is important to balance this with recognition that many of them are able to play an active part in the consent process.

35. Children's c*onsent or assent*

Some researchers have commented that even small children can understand a basic explanation of research and can respond to appropriately targeted information regarding their participation in it (Christensen and Prout, 2002, Flewitt, 2005; Cocks, 2006). As such they have the right to be fully informed about research which affects them and to make decisions based on that information (Bray, 2007). However, the notion of child consent is bound up with the concept of parental permission, and this creates many dilemmas for researchers. The principle of 'Gillick' competence suggests that a competent child has the right to consent or decline to participate in research with or without parental permission (Wiles et al., 2006). However, without clear guidelines about the nature of 'competence' this leaves researchers and LRECs in a somewhat ambiguous situation, and researchers have noted that priority is usually given to parental permission (Critchlow, 2005). This may be particularly problematic in cases where the child and parent disagree about participation in the research (Hood et al., 1996).

In some instances where there is uncertainty about children's competence to give consent it has been suggested that it may be sufficient to accept children's assent (Alderson, 2000) or 'affirmative agreement to participate' (Range and Cotton, 1995) as an alternative. However, it has been suggested that this is only acceptable where assent forms part of a framework of ethical reflection (Cocks, 2006). Indeed, one of the risks inherent in working with children, especially in institutional settings, is the pre-existing expectation of compulsion and control (David et al., 2001), that is the expectation of most organised activities, and which may lead children to comply with research regardless of their own feelings (Pole et al., 1999). As Cree et al. (2002) point out, listening to children's opinions may, at times, involve hearing and accepting them saying "no" to participation.

36. Providing information

A key element in ensuring informed permission, consent or assent from participants is the provision of appropriate information (David et al., 2001). Whilst arguments abound regarding the exact nature of informed consent (Homan, 1991) it essentially expects that participants will understand the nature, scope, risks and benefits of the research, and be aware of their right to withdraw and the effects this may have on other aspects of professional care (Corti et al., 2000).

Providing information to children and parents introduces a unique set of issues for researchers (Wiles et al., 2006). Presenting information which is appropriate for a wide range of ages, abilities and cultures may be challenging. As Wiles et al. (2006) note in their review of literature regarding informed consent, it is vital to give sufficient information to enable an informed choice to be made, but equally not to overload

potential participants (Alderson, 2004). This is a potential problem in providing children with information, especially when ethical regulation or organisational bureaucracy constrains researchers' abilities to make information available in a 'user friendly' format (Truman, 2003). However, researchers have increasingly experimented with different forms of information provision, and with some groups, such as children, keeping written information to a minimum resulted in more effective communication (Alderson, 2004). In these cases visual or oral information alone has been shown to be appropriate and acceptable (Ensign, 2003).

The consensus amongst researchers is that information giving is not a problem, even for vulnerable groups of people, providing the researcher is sensitive and flexible to their needs, and is not prevented by gate-keepers from presenting information in an appropriate manner (Wiles et al., 2006). Guidance regarding the information that should be offered to potential participants is provided by existing research frameworks (World Medical Association, 2002; Central Office for Research Ethics Committee, 2009). These identify that essential information constitutes details of the nature and purpose of the research, the possible risks and benefits, the implications of participation[36], any relevant methodological issues[37] and information about funding sources. This may be difficult to achieve with healthy adult populations, but clearly there are even greater challenges involved in providing this level of information to participants who have particular communication needs[38] (Dawson & Spencer, 2005). Very little work has been undertaken regarding children's research information needs (Dawson & Spencer, 2005), although researchers have alluded to the problems of providing suitable information (Darbyshire et al., 2005). It must also be considered that researchers may be concerned that providing particular information may be 'leading' and will affect the findings of the research (Iphofen, 2005).

37. Gaining permission, consent and assent

Gaining permission from parents and assent or consent from children depends on many factors. Higher rates of permission are generally received by researchers who were introduced to participants via a trusted contact or source compared to those where the researcher is unknown (Emmel et al., 2007). The manner in which the information is presented to parents and children may also influence patterns of participation, depending on individual motivations or anxieties (Wiles et al., 2006). Rewards may affect participation and researchers appear to be divided on the issue of offering incentives to participants (Rice and Broome, 2004). Whilst effective in increasing participation rewards may raise ethical concerns about coercion, especially in relation to vulnerable groups of people (Edwards et al., 2004). There is a growing body of literature relating to this issue.

In some cases, particularly in relation to research within schools, there are instances of researchers trying to secure participants using an 'opt out' system rather than 'opt in' (Critchlow, 2005). Passive consent has some precedence in schools, where there is a tendency to assume participation, and it may be problematic for researchers to operate in a way which runs counter to the normal practice of the institutional setting (Heath et al., 2007). Patterns of response to requests from parents may also contribute to the

attractiveness of this concept as passive consent appears, based on US research, to increase numbers of participants (Esbensen et al., 1999). It is also clear that the proportion of permission refusals may be relatively small compared to the number of non-responses (Esbensen et al., 1996). In addition, the requirement for active permission tends to result in a proportional lack of participants from disadvantaged families, minority groups or at-risk individuals (Ellickson and Hawes, 1989). However, for researchers and Research Ethics Committees the practice of passive consent may be ethically unacceptable.

It is also important to note that people's desire to consent may change over time, and that they may, for physical, mental or social reasons be unable to express a desire to change their consent (Wiles et al., 2006). This is perhaps particularly true of child participants (Flewitt, 2005), and Mahon et al. (1996) suggest that withdrawing from participation in research activities should be taken as a form of ceasing to consent.

38. Keeping records

There is ongoing debate amongst researchers regarding the necessity of keeping written records of participants' consent. Many see this as a protective measure for participants and researcher alike, whilst others find that it creates a barrier to participation for those who place a very high value on their anonymity (Coomber, 2002). The lack of parental presence in much research involving children means that if their permission is sought it is frequently necessary to do so in written form, and for the records to be kept. However, children's verbal consent, or in some cases their active participation in research, within a rigourous ethical framework is seen by some researchers as sufficient indication of their assent to participate (Coomber, 2002). It is suggested that this may be appropriate for most research, with written consent only used for longitudinal or intrusive studies (British Sociological Association, 2009)

4 Participating and being heard

Acknowledging that children are intelligent, competent beings makes it imperative that they are offered the opportunity to be heard and present their opinions. This is particularly important when these views relate to their personal or family lives. In some cases children may come from health or social backgrounds which make them particularly "hard to reach" in terms of recruitment or communication, although their additional needs make it particularly important that their views are heard (Curtis et al., 2004). The inclusion of children in research relating to potential policymaking has also become increasingly common (Mahon et al., 1996).

5 Children's needs as research participants

39. Enabling participation of children with diverse needs

A number of key issues have emerged which influence the suitability of various research methods when working with children. Clearly a major consideration is that it is age appropriate, but it must be remembered that childhood spans a wide age range, and there are fundamental differences between children at different points in childhood (Punch, 2002). Tailoring research to different age groups requires an understanding of child development, although there are still risks in assuming that children within any one age bracket will always respond to the same activity (Greene and Hill, 2004). Children's responses to research will vary enormously not only depending on age, but also as a result of gender differences, experience, and cultural or social differences (Punch, 2002). A particular challenge, which I faced in this research, but was not identified in the literature, may emerge when involving multiple age groups in research activities. Identifying activities which can be used with a wide age range of children, so that data can be compared and contrasted, may require some consideration.

40. Enabling recall

As discussed earlier in the chapter, a large quantity of research exists on the subject of children's memory and recall. The evidence around this subject suggests that researchers should exercise great care when interviewing children, because of the nature of their memory formation and recall abilities. Using techniques which reconstruct the context of a memory, or guide children through visualisation or associating memories, appears to assist their accurate recall (Fivush, 1998; Gauntlett, 2004; Gauntlett, 2007). Techniques which enable free recall, but enhance children's abilities to access memories appear to be most effective (Smith et al., 2003).

41. Providing 'thinking time'

As discussed earlier, children may not have developed the strategies for recall that adults possess (see 4.2.4). More frequently they face situations that they have not previously encountered and have to adapt their existing scripts or schema (Smith et al., 2003) in order to respond appropriately. As a result they may need time and opportunity to achieve this. Gauntlett (2004, 2006) argues that ''creative methods''[39] provide children with time to think, and a means of building ideas in stages, rather than having to provide an immediate and complete response. Harden et al. (2000) note that these methods not only offer creative thinking time, but also provide children with 'time out' if they require this time to consider their answers to questions.

42. Providing context and focus

Research involving children can often cover subjects which may not directly involve memories or be of relevance to their lives at that time. Indeed some topics, such as 'fear' (Driessnack, 2006) may be quite abstract when taken out of context. It can therefore be helpful to assist them by providing a means of placing the research subject in context,

using a prompt in the form of a structured conversation or memory map which helps them to identify personal experiences. This practice is touched on briefly in the literature (McCabe and Peterson 1984; Punch, 2002; Driessnack 2006). Similarly, some researchers have used activities such as map making (Darbyshire et al., 2005), food intake and activity charting (Maunther, 1997), 'sorting'[40], drawing and reading (Mayall, 1994) to maintain children's interest and focus. However, because of the ways in which children construct knowledge and make sense of situations, particularly the use of scripts and schema, there is potential for them to make incorrect inferences from information presented to them in a leading or confusing manner (Smith et al., 2003).

43. Enabling communication

Children's communication skills vary greatly according to age, gender, educational ability and additional learning needs (Hill, 2006). They may be seen as having "limitations of language" (Ireland and Holloway, 1996, p156), although this depends to a great extent on the child and the research activity. In addition, they may use a vocabulary and language style which is unfamiliar to the researcher (Punch, 2002). This can create dilemmas when communicating with children where, as Punch (2002) notes, "the language dilemma is mutual" (p328). It should also be remembered that for some children, at some stages, language communication may not match cognitive abilities (Horstman et al., 2008).

A number of researchers have developed methods which alleviate language barriers when communicating with children, by reducing the focus on verbal or written responses (Driessnack, 2006). These methods may involve contributions which are visual, tactile or performative (Coad, 2007). Other researchers have included verbal or written communication in their research but ensured that appropriate opportunities are provided to enable children to talk, without imposing adult expectations on them. It has been noted that;

> "when space is made for them, children's voices express themselves clearly"
>
> (Maunther, 1997, p21)

Although some researchers have noted that adults tend to be more conscious of their use of language when working with children (Punch, 2002), the exact details of researcher to child communication are not always articulated in academic papers. However, Williams et al., (1989) note that it is important to avoid imposing adult language and terminology on children, but to enable them to express themselves freely and check with them for clarification where necessary.

Inclusion in research for children who are non-English speakers or who have additional education needs, may present problems when using some types of research method. Whilst schools and hospitals may assist in minimising difficulties by providing specialist assistance some activities may prove more difficult to adapt than others. As such those who may already experience problems with being heard or represented may be doubly

disadvantaged (Balen et al., 2006).

44. Building a research relationship

Some researchers have noted that children appear conscious of the researcher/child relationship, in that it is different to the relationships that they have with parents, teachers and peers. Being unable to 'identify' the role of the researcher may make children feel inhibited. Some researchers have attempted to resolve this issue by sharing details about themselves and the nature of their research, through showing a broader interest in each child's life, hobbies or skills (Horstman et al., 2008), or by using methods that break down barriers such as physical or artistic activities (Darbyshire et al., 2005). Punch (2002) notes that following the lead given by children in research may be effective in building rapport, although as previously discussed this may conflict with the relationships that the researcher has to develop with gate-keepers (Morrow, 1999).

45. Involving children throughout the research process

Processes for data analysis when using more traditional research methods, such as questionnaires, observations and interviews, are well documented and have considerable provenance. Even so, when working with children there is the potential for misunderstanding and misrepresentation, based on the inability of adults to truly understand a child's world (Christensen & James, 2000). Analysis of data produced using creative research methods appears to be challenging for many researchers (Pridmore & Bendelow, 1995). The 'draw and write' method, which will be discussed in the next chapter, provides an excellent example of the many and complex issues involved in analysis. Researchers have suggested that some of these issues might be resolved if children played a significant part in interpreting their creative work or are involved in the analysis process (Thomas & O'Kane, 1998).

Recently there has been a move towards a more meaningful sense of participation in research involving children. It has been suggested that, in order to gather data that truly reflect children's views they must be involved in the planning and process of research, in the analysis of the data collected and in sharing the findings (Ward, 1997). However, other commentators have suggested that maintaining academic rigour may be difficult without adult management of research, and that methods of enabling children's participation should be judged by their appropriateness rather than the degree of inclusion (Cavet and Sloper, 2004).

5 Children and research methods

1 Identifying appropriate research methods

Researchers usually work in ways which reflect contemporary views of children and childhood (Darbyshire et al., 2005). Cultural, social and psychological views of children have significantly affected the research methods which have been used when working with them. In some institutions and professions there has been an "entrenched tradition of doing things to children" (Darbyshire et al., 2005, p419) based on adult research perspectives. There has also been a tendency to acquire 'proxy' information from adults about children's lives, a practice which reflects the view that they are simply adults with 'deficits' and do not possess their own unique outlook (Scott, 2000).

Debates about children's ability and competence are particularly problematic for researchers who wish to investigate children's experiences and opinions. Whilst quantitative studies and experimental research have been used to study behaviour and development, other methods are effective in gaining deeper insights into children's thoughts and experiences (Pridmore & Bendelow, 1995). Although some commentators have reported the view that 'special' techniques belittle children's abilities (Alderson, 1995), it can be argued that using qualitative methods from adult based research in work involving children, fails to appreciate some of the essential differences between children and adults (Darbyshire et al., 2005). These differences should not be seen as deficits however. James et al. (1998) suggest that children and adults are similar in their ability to reason and participate, but simply have different competencies. These may be effectively utilised by employing appropriate research methods (Punch, 2002).

It has been suggested that many of the potential ethical dilemmas in research involving children may be alleviated by employing suitable research methods (Thomas & O'Kane, 1998). Using those which empower children, provide opportunities for them to lead research activities and enable them to choose their level of participation, help to redress the power imbalance between adults and children (Hood et al., 1996).

46. Combining different methods

Many researchers working with children have combined different research methods, or adapted techniques, in order to gather more complete and meaningful data. In addition, using two or more methods in a study may enable data to be gathered from children who may have different abilities and preferences for different forms of participation (Darbyshire et al., 2005). Many methods are enhanced and appear to work more effectively when combined with others (Morgan et al., 2002). Frequently visual and verbal methods are complimentary, with data from each offering deeper insight when combined with the other (Driessnack, 2006). However, it is important that combinations are used thoughtfully and constructively, as Darbyshire et al. (2005) point out when they question whether more research methods are "better or simply more?" (p417).

A wide, and growing, range of research methods have been used by researchers working with children. These can be broadly divided into more traditional methods, such as questionnaires, observation and interviews, and a wide range of 'creative methods'.

2 Questionnaires and surveys

Questionnaires have been widely used for research involving children (Hill, 1997). They have the advantage of being economical in terms of time and often elicit concrete, measurable responses to specific questions. In addition, questionnaires can assist in achieving anonymity and do not present as much pressure to participate as some 'face-to-face' research methods. However, enabling pre-school and primary school children to participate in questionnaires may be hampered by literacy issues (Freeman, 1996). It could also be argued that this method represents an entirely 'adultist' approach to research and fails to acknowledge children as participants in the process (Stewart & McWhirter, 2007).

3 Observation

Observation techniques have a long history in childhood research. However, by its very nature, observation methods tend to treat children as objects rather than participants in research (Christensen & James, 2000). In addition, observers are unable to appreciate the experiences of others unless they become participants (Patton, 2002). When researching with children this problem remains, because adults can never really be full participants in children's social worlds (Punch, 2002). However, observation is viewed as an effective method for collecting background data when conducting interviews or other activities, where it may add depth and meaning to other data (Gubrium & Holstein, 2001). Ethical research and consent may be a significant problem, presenting a paradox between the necessities of informed consent and the desire to observe and record natural behaviour (Woodhead & Faulkner, 2002).

4 Interviews and focus groups

Qualitative interviewing resembles a guided conversation between the researcher and participant or participants (Gubrium & Holstein, 2001). Interview styles may vary between research studies, from open discussions (Eder & Fingerson, 2002) to very structured formal interviews (Rubin & Rubin, 2005). Different techniques may be suitable depending on the research subject, the aims of the study and the nature of the participants.

It has been noted by some researchers that it can be very difficult to elicit information from children during interviews (Eder & Fingerson, 2002; Darbyshire et al., 2005). This particularly appears to be an issue with younger children or in one off interviews (Darbyshire et al., 2005), where children's responses may be very limited. Dreissnack (2006) demonstrated that children typically know more than they articulate, whilst Krähenbühl and Blades (2006) identified that subtle difference in interview styles may alter children's responses considerably. Identifying an appropriate interviewing style has been researched extensively (Cameron, 2005; Krähenbühl & Blades, 2006; Seidman, 2006) and child-led strategies are most commonly used;

> "the emphasis is on encouraging young children's free narrative within an ethical context, using a range of empathetic response cues to promote this"
>
> (Cameron, 2005, p597)

Combining interviews with other research techniques seems to be an effective means of promoting children's full participation (Darbyshire et al., 2005). Some researchers have found that children respond better when interviewed in conjunction with child-centred activities, such as drawing (Thomas & O'Kane, 1998), often in natural, familiar settings (Irwin & Johnston, 2005).

Focus groups, as a means of group interviewing appear to be effective, possibly because children are familiar with this method of discussion in school and social activities (Eder & Fingerson, 2002). Group interviews offer advantages in some situations, because of the enthusiastic discussion they may generate, although some researchers found that children were wary about discussing some issues (Darbyshire et al., 2005). Some researchers noted that on occasions the 'group view' predominated, and individuals with different ideas either struggled to be heard or were inhibited (Eder & Fingerson, 2002). There is also some debate about the ethics of discussing some sensitive issues in group situations (Hill, 2003).

As previously discussed, power imbalances between adult researchers and child participants, constitute a considerable ethical and practical problem (Eder & Fingerson, 2002). Interviewing may exacerbate this if not undertaken carefully. Not only are children conditioned to conform and undertake activities set by adults, but they may feel especially pressurised in a one-to-one interview with an unfamiliar adult (Punch, 2002). It has been noted that children may provide responses to researchers which reflect their desire to give the 'right' answer, as would usually be expected in school, rather than state their personal views (Eder & Fingerson, 2002). Using interviews as a research method with children requires sensitivity and reflexivity (Guillemin and Gillam, 2004) in order to collect meaningful data in an ethical, child-centred manner (Hill, 1997). Whilst researchers have found interviewing to be a useful method with children from four years and older (Irwin and Johnson, 2005), children clearly present a range of interviewing challenges for researchers (Cree et al., 2002).

5 'Creative methods'

There does not appear to be a consensus of opinion amongst researchers regarding the exact nature of 'creative methods' and they are variously referred to as innovative (Christensen & James, 2000) or novel (Green & Thorogood, 2006) approaches. 'Creative methods' is the term used by Gauntlett (2006), who has researched extensively using these methods and offers his interpretation of them;

> a kind of research which enables people to communicate, in a meaningful way, about their identities and experiences, through creatively making things, and then reflecting on what they have made. This is a process which takes time, and uses

> the hands and body as well as the mind. The method should be empowering to participants – since they have the creative opportunity to express and explore something as part of a project which is interested in what they have to say
>
> (Gauntlett, 2006, p1)

I have used the term ‘creative methods’ to describe a range of research methods which involve individuals or groups producing creative visual or aural data.

In recent years a wide range of ‘creative methods’ have been developed by researchers working with children (Horstman et al., 2008). Usually the aim of these has been to enhance children’s participation in research and bridge the perceived gap between their cognitive abilities and their communication skills (Thomas & O’Kane, 1998). It is argued that many ‘creative methods’ reduce the problems that participants may experience in ‘translating’ visual experiences into different forms of communication, such as writing or speaking. As such

> the method operates on the visual plane, to a substantial degree, matching the highly visual nature of popular culture. So you have a match between mediated experiences, and the kind of method you are using to explore them
>
> (Gauntlett, 2006, p2)

It can also be argued that ‘creative methods’ help redress power imbalances between adults and children, and enable children to have greater involvement in the research process (Horstman et al., 2008). However, some commentators have noted that there is a need to scrutinize the use of these techniques as it is essential that these methods are ethical and valid, and that the data they provide is meaningful (Christensen & James, 2000).

The uses of ‘creative methods’ vary between studies. In some cases creative activities form the basis for collecting data, which are then analysed and used as an inherent element in the research findings. In common with Gauntlett (2006) I would argue that ‘creative methods’ should not only involve a creative process, but also a reflection on and interpretation of the work produced. Some researchers have used creative activities to ‘distract’ children, or as a vehicle for further discussion, but have not analysed the creative works which have been produced (Backett and Alexander, 1991). Elsewhere techniques are used as ‘warm up’ activities, or a ‘fill in’ task when working with larger groups of children (Punch, 2002), and they do not then form part of the data. Whilst these activities may be valid as part of the research process, it is essential that information is not collected gratuitously, and that there is clarity about how data are being collected and in what ways they will be used (Coad, 2007). Researchers working with children, particularly in health sciences, have used a wide array of creative techniques during recent years.

47. Play

Play appears to form an essential element in children's lives, although there is considerable debate regarding its function and benefits (Smith et al., 2003). The observation of children at play has provided valuable insights for researchers investigating childhood (Patton, 2002). However, ensuring informed participation or trying to structure children's activities around a particular subject can result in high levels of "experimenter effects" (Smith et al., 205, p235) because the natural quality of play is lost.

48. Storytelling

Storytelling has received relatively little attention from researchers working with children, despite being a familiar activity for many children (Eisner et al., 1990). Davis (2007) employed storytelling as a research method with children following her experiences using interview based research, in which she noted that the data gained were frequently rather "thin" (Davis, 2007, p171). Storytelling, unlike interviews, offers an open-ended approach which encourages children to talk freely and take the lead, describing detailed events with minimal adult cues (Dockrell, 2004). Davis observed that storytelling appeared to offer a 'safe' form of narrative in which children could deflect attention from themselves into the third person. However, despite being able to present their stories in the third person it still appeared that they incorporated "unconscious tendencies" in their stories which allowed the researcher "access to the social worlds and cultural models of children" (Davis, 2007, p172). This is not to suggest that children necessarily relate stories about events that have happened to them personally, but that they create stories based in their own social and cultural frame of reference (Davis, 2007).

49. Performative research

Drama has been frequently used with children as an educational tool, often when looking at health behaviours and risks (Bury et al., 1998). It has been used successfully to enable children to demonstrate ideas and feelings about various health or safety related issues (Corbishley, 1995; Conrad, 2004).

Puppets offer an alternative vehicle to drama, especially with younger children. Sahoo (2003), found that puppets provided children with situations and characters which were easy to relate to, familiar and non threatening (Cameron, 2005). Puppets enabled the children to express themselves as if they were a different person, one step removed from themselves, which appeared to ease communication difficulties (Greene & Hill, 2005). However, the issues of interpreting data from these research methods have been highlighted (Cameron, 2005).

50. Video and photography

Video and photography have now been used in a wide variety of research studies with children, often around the subjects of health or the environment (Diamond 1996,

Gauntlett 1997, Gauntlett 2004, Darbyshire et al., 2005). The simplicity of the technology means that all age groups, even pre-schoolers can participate (Einarsdottir, 2005), although I would suggest that care needs to be taken with such young children in relation to ethics, consent and in assisting understanding of the research process. Enabling children to take control of photography equipment and select images that are meaningful to them has been effective in exploring their interests and awareness around a range of subjects.

51. Diagrams, concept maps and mapping

Asking children to create diagrams (Thomas & O'Kane, 1998), concept maps (Pearson & Somekh, 2003), and maps of their environment (Darbyshire et al., 2005), has been utilised by researchers working with children around a wide range of subjects. As with many other kinds of creative research these methods offer children the time and opportunity to think through their ideas. This enabled them to demonstrate high levels of knowledge and observation which other methods may not have successfully uncovered. Diagram based research has enabled researchers to explore how children tackle complex issues and structure their decision making processes (Pearson & Somekh, 2003).

52. 'Construction' methods

Health and education researchers working with children have used a remarkable array of objects, printed matter or modelling materials as tools to encourage and facilitate children's research participation. With various levels of success there have been efforts to use textiles, clay, wood, scrapbooks and collages (Bendelow et al., 1996; Punch, 2002; Barker & Weller, 2003; Gibson et al. 2005). Gauntlett (2007) has used LEGO™ modelling with adults. These methods provide familiar non-verbal forms of expression which may assist children in presenting their thoughts and feelings (Coad, 2007). An additional rationale behind the use of these techniques relates to the connection between physical creativity and thought development (Gauntlett, 2007). It has been suggested that children may displace feelings and emotions onto expressive art materials, and use creative work as a means of communication (Wikstrom, 2005). However, there may be a dislocation between the complexity and subtlety of children's ideas and their skills in using these materials effectively to express them. This may, or may not, be resolved by their ability to describe verbally their creations in a way which facilitates adult understanding. As with some other 'creative methods' there may also be issues around interpretation and analysis.

53. Art and drawing

Art, in terms of unique works created 'from scratch' using painting, drawing or other 'mark making' is a fundamental form of communication for humans. It enables the communication of factual information and knowledge, but can also illustrate emotions. Art can be highly complex, stylised and symbolic, but can be equally effective and

meaningful in its most basic forms. Art has been increasingly used in research involving children as a means of enhancing communication between the child participant and adult researcher (Wesson & Salmon, 2001). Children's art, in the form of an adaptation of the 'draw and write' method, comprises the main element of this research. The inclusion of children's art in research offers many opportunities to researchers, but also presents a number of challenges. The use of children's art in research, in particular the 'draw and write' method, will be explored in Chapter 5 'Children's art and research'.

Children's art and research

What adults call 'wrong' in child art is the most beautiful and most precious. I value highly those things done by small children. They are the first and purest source of artistic creation.

(Franz Cizek, 1865-1946)

1 Introduction

Art, in terms of drawing or 'mark making' is one of the oldest methods of human self expression, and forms an essential element in all cultures (Janson & Janson, 2003). Those working with children[41] in educational settings have noted the importance of art as a symbolic language which is essential to early development and learning (Maunther, 1997; Pink, 2001). Very personal, meaningful and direct forms of self expression are generated using art and drawing, and these may enable complex thoughts and emotions to be portrayed, regardless of artistic ability or the availability of sophisticated materials. There has been a long history to the use of art in research, often as a tool for diagnosis or therapy, with evidence to show its use dating back as far as the 1920's (Prosser, 1998). Numerous health research studies have utilised artistic methods, particularly with participants for whom verbal self expression may be difficult for practical reasons, such as age or disability (Pridmore & Bendelow, 1995; Bendelow et al., 1996; Punch, 2002; Barker and Weller, 2003; Coates, 2004). In addition, art has been used in research to ease the problems associated with discussing sensitive subjects such as illness, mental health issues or traumatic events (Wesson & Salmon, 2001; Gibson et al., 2005).

1 Using children's art - from disinterest to diagnosis

Prior to the twentieth century very little scientific interest was shown in art produced by children, whose efforts were generally perceived to be unskilled and immature (Rosenblatt & Winner, 1988). Subsequently psychology and psychiatry began to use art as a therapeutic and research tool (Dreissnack, 2006). It was recognised that children's art might offer insights regarding their experiences and emotions (Malchiodi, 1998). However, for some time the use of this in therapeutic settings and in research centred on interpreting psychological problems from art (Buck, 1948), although this is now somewhat discredited (Gauntlett, 2004). More recently children's art has been viewed by art therapists in terms of the metaphors which may be identified from it (Diem-Willi, 2001). However, there has been a significant move amongst therapists and researchers towards enabling participants to discuss and interpret their own art rather than imposing adult views. This acknowledges the artist as 'the expert' in his or her experiences and feelings, and in the methods which they have chosen to portray these (Malchiodi, 1998).

2 Learning to draw

Research has demonstrated that children begin to draw as a result of manipulating the objects and space about them (Trevarthen, 1995). Once they have created marks they continue to want to repeat the experience, both because it gains response and communication with adults, and because it has aesthetic meaning for them (Matthews, 2003). It seems likely that children learn drawing through making their own connections between the shapes they make and objects with which they are familiar. From this they build their own drawing 'rules'. Children do not appear to learn to draw from adults, although their facilitation of drawing and feedback is important, and they quickly learn that representations of people and objects often elicit the most positive responses (Anning & Ring, 2004). It is notable that whilst children largely teach themselves to draw, the process is not idiosyncratic, but develops according to a similar pattern, driven by their physical and psychological development (Matthews, 2003). In addition, as children's art develops it becomes increasingly influenced by their cultural setting, developing a "house style" (Anning & Ring, 2004).

Despite the original aesthetic value of art for children it appears that it is then adopted as a means of representing and clarifying their thinking, in the same way that designers use sketching "to converse with themselves" (Anning, 1997, p219). Children creating artwork appear to work in a 'conversational' manner, with pauses followed by flurries of activity as they stop to consider ideas. This suggests that they are following through thoughts and concepts rather than being randomly creative (Matthews, 2003). It appears that children use art as a form of narrative with which to develop ideas and stories (Anning & Ring, 2004). This is supported by the suggestion that drawing allows children to logically build on or to recover memories piece by piece, and is demonstrated by research which shows improvements in children's recall when drawing (Davison &Thomas, 2001).

From about six years of age children steadily develop their art into sets of 'schema', or basic blueprints, which are modified to incorporate the important characteristics of particular people, objects or places (Anning & Ring, 2004). Unlike adults, who expect their art to either look like a real object, or anticipate that they will produce the picture that they see in their mind eye, children do not require their art to conform to these notions. For children a shape they have drawn is what it is 'because they say that is what it is'. They have matched that particular shape as being a symbolic representation of the object they wanted to draw, regardless that this is not a 'realistic' representation (Matthews, 2003). In addition, children cannot usually picture objects which are overlaid on one another, or the true perspective of 3D objects, perhaps because they lack the ability to choose a perspective and use it consistently (Radkey & Enns, 1987). As such they do not draw what they see, but instead what they know to be there, such as all the sides of a cube unfolded, or an object and a box rather than an object inside a box (Anning, 2006). Children's art at this stage may lack scale and perspective, and tends to appear on a 'horizon' line on the page (Rosenblatt & Winner, 1988). As a result of these factors their drawings are unlikely to appear as an exact representation of their view of the world. Even so, it appears that children themselves understand and ascribe specific meaning and symbolism to their artwork, and are able to recognise their own work after many months have elapsed (Gross & Hayne, 1999).

From the age of eight or ten years the schema system is often unsatisfactory and limiting to children as they begin to aim for realism when drawing (Anning, 2006). Representational art may be partly a result of adult encouragement, or the child's growing desire to see their work objectively and make universally recognisable drawings (Matthews, 2003). As a result of artistic development and social conditioning children work to improve realism in their art and resolve problems of perspective, foreshortening and other spatial issues (Anning, 2006). Once they arrive at the 'realism' stage they may become dissatisfied or unconfident regarding their artwork, and opt not to engage in it. Indeed there has been long term concern, dating back to Frank Cizek in the early part of the last century, that teaching children to 'do art properly' stifles their creativity and future artistic development (Matthews, 2003). Social pressures, culture and media can also influence the content and style of children's art, especially as they mature. This may affect the information portrayed (Wilson, 2004).

3 'Smoke and mirrors' - interpreting children's art

Even after children have reached the stage of 'realism' at about ten years, there are considerable risks with interpreting their art literally or in terms of adult values (Gabhainn & Kelleher, 2002). Analysing their art has, in the past, been used to try and identify character traits or state of mind. Whilst some researchers have identified possible 'emotional indicators' in art, through discrepancies in family paintings, or missing limbs in pictures (Ryan-Wenger, 1998), there has been a considerable move away from such techniques. Thomas and Silk (1990) provide one of the most comprehensive reviews of the literature regarding the psychology of children's art, and demonstrate the inadequacies of attempts at interpretation. However, they agree that some progress has been made in identifying trends in the content of children's drawings, for instance in the relative small size of threatening images compared to non-threatening ones (Thomas & Silk, 1990; Burkitt et al., 2003a). Broad cultural influences may also be observed in children's use of colour, which may be selective, with symbolic use of dark colours for negative people and objects, and primary colours used for positive images (Burkitt et al., 2003b). However, it is widely accepted now that children's art, although influenced by some drawing conventions and familiar symbols, does not adhere consistently to conventional codes and semiotic analysis cannot be applied (Jewitt & Oyama, 2001).

2 'Draw and write'

1 The literature relating to 'draw and write' method

A search for 'draw and write' literature was performed using search terms 'draw and write', 'draw + write', 'children + draw + research' in the British Education Index, British Nursing Index, PyscINFO, CINAHL, Ingenta Connect, JSTOR and Google Scholar™.

The references in each relevant paper were then checked and individually sought as appropriate. Following the initial search additional ones using the key words 'draw and tell' and 'children + art + health + research' were conducted in the same databases. A wealth of research adopting the 'draw and write' method were located. To ensure relevance all published journal papers reviewed relate only to 'draw and write' using children's drawings, and exclude other media. They include research solely undertaken in the UK[42], with primary school children (ages approximately four to eleven), and in health and wellbeing related studies. The search was limited to papers published in English. No historical limits were set on the search, which was conducted in April 2007 and repeated in February 2009. The results of this literature search are shown in appendix 5. In total 33 research papers or reports were identified, relating to 29 studies, all of which used a method described by the researchers as 'draw and write'. Five of these papers could not be located, despite contacting their authors or the institutions from which they originated. In addition to the existing original research, the paper by Backett-Milburn and McKie (1999) provided a detailed appraisal of this method, although this is based on work undertaken some time ago and includes some studies from outside the UK.

The identified research commences with the work of Noreen Wetton in 1972, who is widely held to have pioneered the method in health education research (Gauntlett, 2004). Wetton (1999) observed that seven and eight year olds appeared to be able to illustrate their feelings and emotions with greater ease than they were able to articulate them. Since then a wide range of research studies have used the method, particularly with primary school age children, and frequently in the areas of health and wellbeing. The studies vary considerably in size from small studies involving as few as nine children (Smith & Callery, 2005), to one involving over 20,000 participants (Williams et al., 1989). There is diversity in the participant children's ages, with some research spanning the entire primary school age range (Franck et al., 2008) and others concentrating on several specific year groups (McWhirter et al., 2000) or a single age group (Oakley et al., 1995).

The use of 'draw and write' appears to be prevalent in particular subject areas within health and wellbeing. Research amongst healthy children in homes and schools has often looked at attitudes to sun safety (Newton-Bishop et al., 1996; McWhirter et al., 2000), perceptions of cancer and cancer prevention (Oakley et al., 1995; Bendelow et al., 1996), healthy lifestyles (McGregor & Currie, 1998; Gabhainn & Kelleher, 2002), diet (Maunther et al., 1993; Box & Landman, 1994; Hendry, 1995; Caraher et al., 2004) and exercise (Mulvihill et al., 2000). In addition, a considerable amount of research has been conducted in hospitals and at home with children receiving cancer treatment or other medical care regarding their concerns and feelings (Horstman and Bradding, 2002; Franck et al., 2008; Horstman et al., 2008).

2 It sounds so simple…the practicalities of 'draw and write'

'Draw and write' method appears, in the first instance, to be a self explanatory term.

Essentially it seeks to engage children in research through the production of a combination of drawing and writing. However, this apparent simplicity belies numerous permutations in the interpretation and application of the method. Some studies have used 'draw and write' in its simplest form. Here, children have been asked to draw a picture and write a length of text on a given subject, but no interviews or group discussion have been undertaken following the exercise (Newton-Bishop et al., 1996; Paxton et al., 1998; McWhirter et al., 2000). This is particularly the case where large numbers of children are involved in the research, and it raises some issues regarding analysis, which will be discussed later in this chapter. More commonly researchers have asked children to 'draw and write' on a subject and have then interviewed them or convened group discussions during or after the exercise (Russell et al., 2004; Smith & Callery, 2005; Woods et al., 2005; Horstman et al., 2008). This has aimed either to gain a child's interpretation of their work, or to elicit more detailed verbal discussion to accompany the 'draw and write' data.

54. Drawing, writing, labelling and telling

In some research the 'draw and write' method has been adapted, based on the ages or health of participants. Some researchers have used 'draw and tell' for children whom they considered to be unable to write (Box & Landman, 1994). In some research it has been appropriate to use 'draw and label' (Pridmore and Lansdown, 1997). Others have been flexible about using a combination of 'draw', 'draw and label', 'draw and write' and 'draw and tell' depending on the data provided by the children although, for simplicity, this is usually just referred to as 'draw and write' (Bradding & Horstman, 1999; Russell et al., 2004). Some researchers have also enabled children to include creative work which was not 'draw and write' in the research, perhaps in the form of scrapbooks or memory boxes (Horstman et al., 2008). This approach is extremely child-orientated, but requires a flexible, yet robust, approach to analysis which will accommodate data in different forms.

55. Paper and pencils

Whilst some researchers have preferred to provide children with a truly 'blank canvas' and have not restricted their creative materials, others have been more prescriptive in approach (Pridmore and Lansdown, 1997). One example involves providing children with a series of annotated boxes in which to draw (MacGregor et al., 1998). There have also been attempts to ensure some text or sense of 'inner thoughts' by requesting that children add a 'thought bubble' (Horstman et al., 2008). Some researchers also prefer to supply carbon pencils rather than colour, because it is felt that colour drawings take additional time and cannot be erased (discussion with Alison Richardson, Oct 2008, relating to her contribution to Horstman et al., 2008). However, whilst researchers may choose to provide particular materials for children in the hope that they will use them, I would argue that attempting to limit materials is counterproductive when using a creative method. Research regarding children's use of colour would also suggest that some meaning may be lost by imposing a restriction (Burkitt, 2003b). Inspired use of resources may be a significant benefit to 'draw and write' studies. Caraher et al. (2004) provided children with paper plates on which to draw a meal, which I consider to be creative,

appropriate and probably appealing to the participants.

56. Setting the scene

There is considerable variation in the introduction which researchers have given to participants regarding their research. In many examples children have been informed verbally of the research 'remit', in the form of a question or statement, and have then been asked to draw a response (Pridmore & Bendelow, 1995; Byrne, 1999; Franck et al., 2008). This has enabled a complex question to be presented to a child in more grounded and 'concrete' terms to which they can easily relate (Horstman et al., 2008). In one example the participants were told a brief story, about a hungry alien, to enable them to place the research exercise about healthy foods in context (Caraher et al., 2004). Providing children with a firm 'stepping off' point prior to starting their drawing appears to be important and is consistent with our understanding of children's ability to access memory and construct ideas, as discussed in the previous chapter. As Backett-Milburn and McKie (1999) note, it can be difficult for children to deal with abstract concepts or ideas, which do not make sense to them. However, they also warn that the nature of the introduction to the 'draw and write' activity may affect the material which the children produce (Backett-Milburn & McKie, 1999). This highlights the importance of careful planning of this element and total consistency in delivery during fieldwork. Newton-Bishop et al., (1996) noted this issue in undertaking a collaborative study in six countries where not only did a different presenter introduce the subject but where each did so in a different language. I would also suggest that this is a problem when working with markedly different age groups, for whom pitching an appropriate level of introduction vies with consistency of presentation.

57. 'Draw and write' for data, discussion and diversion

The 'draw and write' literature varies markedly in terms of the function that the exercise has within the research. In many studies this method is used as a direct means of collecting data. In these examples the pictures and text, or sometimes just the text, are used as either the main focus of the research (Gabhainn & Kelleher, 2002; McWhirter et al., 2000; Franck et al., 2008) or form an essential element in data collection when combined with interviews (Mulvihill et al., 2000), focus groups (Russell et al., 2004), or other 'creative methods' (Maunther et al., 1993). In some research it becomes apparent that the 'draw and write' element is used to focus children's attention on the subject, but the data generated by this activity are not subsequently analysed, although it may be used for illustrative purposes (Oakley et al., 1995, Woods et al., 2005). In some instances the activity has been used only as a 'warm up exercise' to help establish rapport with children, or as an initial discussion point (Backett & Alexander, 1991). Alternatively, a 'draw and write' activity has been included at the end of an interview or discussion as a 'reward' (Hill et al., 1996). In some studies it was difficult to establish the aim of including 'draw and write' in the research because it was not made clear in the description of the method or the analysis (Mulvihill et al., 2000). Use of 'draw and write' as a 'warm up' exercise or fun 'diversion', appears to have been chosen by the researchers because they perceived that children would enjoy the activity. As such, it may have improved the

research experience for children but it is perhaps worth reflecting on the ethical implications of obtaining data which are not utilised (Gullimin & Gillam, 2004), or unnecessarily intruding into participants' lives (Morrow & Richards, 2002).

3 The contribution of 'draw and write' to research

The literature reveals varying levels of interest in the theory of 'draw and write' method amongst researchers, with some including detailed justifications of its use and benefits (Horstman et al., 2008), or even actively testing different 'draw and write' approaches (Pridmore & Lansdown, 1997). Other researchers focus less on justifying their use of this method in their work. As such it can be difficult to ascertain their reasons for using 'draw and write', how they implemented it and whether they felt it had been appropriate. Important considerations when using 'draw and write', as with all research involving children, include those of ethics and participation, as well as developmental appropriateness.

1 Ethics

Some researchers using 'draw and write' have commented specifically on its ethical impact (Horstman et al., 2008). Issues such as power imbalances, protection from harm and confidentiality have been noted. However, in some cases, such as Box & Landman (1994), ethical implications of the method were not discussed.

58. Power and choice

The issue of power differentials between children and adults was of importance to Horstman et al. (2008), who regarded the use of 'draw and write' as a means to reduce this problem by enabling the child to guide the research exercise. However, whilst perhaps reducing the overt pressure on children to comply with researchers using methods such as interviewing or questionnaires, there is a risk that, in feeling more at ease, children may reveal more in their drawings than they wished to (Backett-Milburn & McKie, 1999). I would suggest that this may be a particular problem if issues relating to unexpected disclosures of information have not been adequately addressed by the researcher in preparation for conducting the research (see 4.3.2.5 and 6.5.3.4).

59. Minimising risk and harm

Several researchers have commented that the method has provided an 'unthreatening' means of asking children about 'sensitive' topics, such as self- esteem (Byrne, 1999), cancer (Oakley et al., 1995) or parental smoking (Woods et al., 2005). However, it was noticeable that some of the subjects tackled by researchers appeared to have caused concerns amongst some children (Hadley & Stockdale, 1996), and I would consider that

it is important that the ‘child-friendly’ appearance of the research method is not permitted to disguise potential harm to participants. In some instances, researchers have instigated discussion or provided support for children following the research exercise to help resolve any anxieties or confusion (Pridmore & Bendelow, 1995). This issue has perhaps been more effectively addressed by those researching with children in healthcare settings, who tend to work with small numbers of children whose backgrounds are known to the researchers (Horstman et al., 2008). I would suggest that where larger numbers of participants are involved in schools it is considerably more difficult to be sensitive to children’s individual needs. Backett-Milburn and McKie (1999) note that little is known about children’s reactions to research that they find distressing.

60. Confidentiality

In some research settings ‘draw and write’ creates difficulties in ensuring confidentiality, mainly because the activity is frequently undertaken in a classroom (Pridmore & Bendelow, 1997). Indeed, the level of conferring amongst some children as reported in one study suggests that they had little privacy during the exercise (MacGregor & Currie, 1998). However, there is perhaps a balance to be struck between privacy issues, and stress, which may be minimised if children are working in their usual classroom environment (Franck et al., 2008). Maintaining confidentiality in the publication or in the dissemination of work to participants was not discussed in detail in the literature. Children’s art can be difficult to anonymise, and maintaining confidentiality may be a significant issue (Backett-Milburn & McKie, 1999) (see 6.5.3.4).

2 Children’s participation in ‘draw and write’ research activities

Researchers using ‘draw and write’ have had mixed experiences in terms of enabling children’s participation. Whilst the method appears to have been acceptable to children and effective in enabling them to express themselves, challenges posed by gate-keeping and by permission/consent issues, present in much child-orientated research, have persisted.

Issues of consent have posed difficulties in some research (Backett-Milburn & McKie, 1999). Researchers have noted that few, if any, children decline to participate in research (Pridmore & Bendelow, 1995; McWhirter et al., 2000). This may be a regrettable side-effect of research being conducted in schools, where participation in activities is generally assumed and children do not feel empowered to refuse (Pridmore & Bendelow, 1995). It is concerning that a number of papers did not contain any reference to gaining children’s consent (Backett & Alexander, 1991; Bendelow et al., 1996; MacGregor and Currie., 1998), although some explicitly offered them strategies for refusing, such as taking a book to read (Pridmore and Lansdown, 1997). It is notable that ‘draw and write’ can be used by children to negotiate their participation, by simply not drawing, and Horstman et al. (2008) cite two occasions when this occurred in their research. However, they did comment that the researchers had been sensitive to the children’s discomfort and had assisted them in non-participation.

In general 'draw and write' has appeared to be an acceptable and enjoyable means of participation for many children (Bendelow et al., 1996; Brading & Horstman, 1999). Russell et al. (2004) noted variations in children's willingness to take part, perhaps because the six year old participants demonstrated differences in concentration levels. Byrne (1999) suggests that drawing is a day to day activity for children, which, as a result, is a relatively non-threatening means of eliciting ideas, even when it relates to a subject they may find difficult to discuss (Mulvihill et al., 2000). Pridmore and Bendelow (1995) specifically report initiating a discussion with children regarding their opinions of the method. It is important to acknowledge that not all children like drawing, and these children should be provided with other means of participating if they so wish (Horstman et al., 2008).

The concept of enabling children's participation in all aspects of research is discussed briefly by Backett-Milburn and McKie (1999) but no other papers identify this issue. Their review suggests that whilst 'draw and write' involves children more effectively than some other methods it may provide a "quick fix" (p396). It may not promote children's full participation with aspects such as research design and analysis. I would suggest that 'draw and write' is a data gathering tool, which can be part of fully participatory research, provided that it is used in a research framework which encourages this.

3 Relating 'draw and write' to child development

61. Diverse abilities

The range of ages[43] for which 'draw and write' has been used indicates that it can be adapted, either by a researcher or by participants, to suit different levels of ability and understanding. However, it has been noted that some primary school children sometimes struggle to add text to their pictures (Pridmore & Bendelow, 1995). By contrast, some older children[44] have been less confident in their drawing abilities (Pridmore & Lansdown, 1997). Allowing for these differences the method has appeared to offer some studies the facility to use a comparable activity with children of varying ages, although their contributions have not always reflected their chronological age (Francke et al., 2008). It has been noted that in some research girls have tended to write more than boys, whilst boys have often drawn more pictures per page when engaged in 'draw and write' (Pridmore & Bendelow, 1995). In addition, 'draw and write' has proved to be effective for children who do not speak English (Box & Landman, 1994), or who have disabilities (Pridmore & Bendelow, 1995), enabling them to participate effectively.

62. How children use 'draw and write'

Some researchers using 'draw and write' have written at length about the perceived benefits of using the method when involving children (Hill et al., 1996; Caraher et al., 2004; Horstman et al., 2008) whilst others have not commented on the benefits of the

method for their research (Backett & Alexander, 1991; Bendelow et al., 1996). The justifications for using this approach are varied. Wetton (1999) commented that in her 1972 study the method enabled children to express their feelings more effectively than articulating them. Although not explicitly mentioned by any of the research, I would argue that our understanding of children's development and their use of art (as discussed in 5.1.1) suggests that children may use the 'draw' element of 'draw and write' as a framework on which to develop creative ideas in stages. Drawing provides 'thinking time' (as discussed in 4.4.5.3) (Pridmore & Bendelow, 1995) and assists children in recalling memories in a visual form by stimulating them using a visual medium (Horstman et al., 2008). They may also use drawing as a means of picking their way logically through memories, promoting better recall than would otherwise be possible (see 4.4.5.2), with the drawing providing cues to assist in the task of translating images into words.

63. Do 'draw and write' data differ from other data?

It is difficult to assess whether 'draw and write' produces different data, greater quantities of data, or even more 'authentic' data, than other research methods. It is clear that children are able to produce 'draw and write' data relating to thoughts and emotions, even those which are potentially complex or abstract (Pridmore & Bendelow, 1995; Horstman et al., 2008). However, as Backett-Milburn and McKie (1999) point out, the fact that children *can* produce these data should not prevent a critical assessment of the actual value and meaning of what is collected. It is impossible to judge whether differences in response between research methods are due to the way participants respond to the method, the manner in which researchers 'frame' the research question (Backett-Milburn & McKie, 1999), or the participants' responses to other factors such as peer pressure and environment (McGregor & Currie, 1998).

A number of researchers have used interviews in addition to 'draw and write' and some have noted that children's responses may differ between the two methods. Backett and Alexander (1991) identified that children's art appeared to illustrate conventional ideas about healthy and unhealthy behaviours, whilst during subsequent interviews they have described more personal, and arguably more realistic, observations. This contrasts with other research which has found that children's comments in interviews match their illustrations (Woods et al., 2005). It is worth highlighting Bendelow et al. (1996), who observed that in interviews children have repeated particular 'catchphrases', without necessarily having an understanding of their true meaning, whilst their drawings would reflect a more considered and individualistic approach. In their art children have demonstrated an appreciation of underlying themes, which researchers have perceived as being more insightful than discussions during interviews (Bendelow et al., 1996). Nonetheless, most of the studies which have been conducted have not been mirrored by research using different methods, and often reflect an entirely new approach to an issue (Franck et al., 2008), thus hampering comparisons.

It is worth acknowledging that children may find some subjects difficult to discuss during interviews simply because they do not have the vocabulary, or do not share a common vocabulary with the researchers. Russell et al. (2004) identified that six year olds in their

study did not use the term ‘breastfeeding’, although they were able to draw and mime the activity. In such cases drawing may enable children to illustrate those things which they cannot verbalise. Presenting comments and text in their original form has been seen as a means of preserving children’s ‘voices’ and recognising these differences in use of language (Horstman et al., 2008)

Research comparing different methods has also identified that ‘draw and write’ appears to elicit data where children describe the connections between their ideas. ‘Write only’ exercises appear to generate fewer ideas (Pridmore & Bendelow 1997). The same study found that children using ‘draw and label’ presented a greater number of objects and people, but made fewer connections between these than those children using ‘draw and write’.

Children may present information which reflects popular understanding of an issue, or details which relate to their personal experiences and feelings (Backett & Alexander, 1991; Bendelow et al., 1996). Children’s understanding of issues may reflect dominant discourses on particular issues (Backett-Milburn & McKie, 1999), and be significantly affected by wider cultural influences (Pridmore & Bendelow, 1995). This has been generally perceived as a weakness of ‘draw and write’ (Backett-Milburn & McKie, 1999), but many researchers have noted that this has been advantageous where their area of study focuses on children’s perceptions in areas such as public health (Russell et al., 2004). It may perhaps be less helpful when considering more personal issues (Box & Landman, 1994).

In addition it has been suggested that children may be selective in telling researchers what they believe to be the ‘right’ answer (Horstman et al., 2008). This is understandable bearing in mind that children, especially in school, are used to being asked questions where they are expected to provide a correct response (Backett-Milburn & McKie, 1999). Some researchers have tried to reassure children about this aspect of research (Byrne, 1999).

The issues of detail, communication and authenticity discussed above, acknowledge some of the problems involved in identifying the contribution of ‘draw and write’, and also suggest that it may be beneficial to combine research methods in order to identify different aspects of children’s perceptions. In particular, additional methods may assist in gaining children’s own interpretations of their ‘draw and write’ work.

64. Child interpretation

One of the risks inherent in ‘draw and write’ research is that researchers will view children’s drawings as literal representations of their thoughts and feelings (Backett-Milburn & McKie, 1999). This is suggestive of previous psychoanalytical approaches to children’s art, and does not reflect the child-centred ethos usually associated with ‘draw and write’ (Pridmore & Bendelow, 1995). As discussed previously (Backett-Milburn and McKie, 1999), children may choose to present images which do not match their real opinions or feelings. Their ‘draw and write’ efforts may also be ambiguous as a result of

the early stage of their artistic skills or handwriting ability (Pridmore & Lansdown, 1997) or due to adult misconceptions (Backett-Milburn & McKie, 1999). In some cases 'draw and write' may resolve these issues by enabling the 'draw' and 'write' aspects to clarify each other (Porcellato et al., 1999; Caraher et al., 2004).

In some research 'draw and write' data have been interpreted without any additional information, particularly where large numbers of participants have been involved (Gabhainn & Kelleher, 2002; Franck et al., 2008). These studies have often interpreted the data in a 'face value' manner, usually identifying content purely in terms of objects and people. Even so, in these cases some major assumptions have been made regarding, for instance, whether children are exaggerating, which distorts the 'face value' nature of the interpretation (Box & Landman, 1994). Using a 'face value' approach, without interview data or text, significantly reduces the degree to which emotions may be deduced from children's work (Horstman et al., 2008)

Many researchers have opted to try to resolve issues of interpretation by including additional research methods which encourage children to describe and interpret their own contributions. Some of these have included group activities (Hill et al., 1996; Russell et al., 2004). However, those which have provided the most clarity in interpreting individual artwork have more commonly involved interviews (Backett & Alexander, 1991; Woods et al., 2005; Horstman et al., 2008). Some researchers have noted that interviews of this kind are more successful with older primary school children (Backett & Alexander, 1991). These do not only assist with clarifying particular images, but perhaps more importantly, may provide information about the a child's "social world and context" (Backett-Milburn & McKie, 1999, p390). Seeing an individual as 'the expert' in interpreting their work is key to respecting their contribution (Horstman et al., 2008) and, I would argue, provides an essential grounding for analysis.

4 Analysis of 'draw and write' data

> "It is not really difficult to construct a series of inferences, each dependent upon its predecessor and each simple in itself. If, after doing so, one simply knocks out all the central inferences and presents one's audience with the starting-point and the conclusion, one may produce a startling, though perhaps a meretricious, effect"
>
> (Sir Arthur Conan Doyle, 1903)

The most challenging element in all 'draw and write' research to date appears to be in the analysis of the data. The above quote is apt, if perhaps a little harsh, because in some 'draw and write' research there is a lack of clarity regarding the process between data collection and conclusions. It has been noted that;

> "The emphasis has been methodological techniques and practical and ethical

issues at the expense of epistemological and analytical concerns”

(Backett-Milburn & McKie, 1999, p392)

Whilst some time has elapsed since this observation was made, and a number of new studies using ‘draw and write’ have emerged, it is reasonable to suggest that the analysis of ‘draw and write’ data remains problematic for many researchers. Within the literature few researchers address the problem to any degree (Maunther et al., 1993; Horstman et al., 2008), and in many cases the analytical process is implied rather than explicit, or there is ambiguity regarding whether the art, or text, or both has been used (Box & Landman, 1994; Byrne, 1999; Mulvihill et al., 2000). To discuss this issue I have divided the ‘draw and write’ literature into three groups based on those with;

- no analysis of either ‘draw’ or ‘write’ data
- analysis of only the ‘write’ data
- analysis of both ‘draw’ and ‘write’ data

It should be appreciated that within each group there are a number of variations in approach.

65. No analysis of *either ‘draw’ or ‘write’ data*

Several researchers have engaged children in a ‘draw and write’ activity but did not analyse the data produced (Williams et al., 1989; Backett & Alexander, 1991; Paxton et al., 1998). Backett and Alexander (1991) used ‘draw and write’ as an exercise to stimulate children’s thoughts on the subject of their research, and the work was then used as a basis for further discussion. It is not clear why data from this ‘draw and write’ activity were not actively analysed, although some consideration of the children’s work must have been made because the researchers noted that the artwork and interviews appeared to be markedly different in content (Backett & Alexander, 1991). Some studies involved very large numbers of children (Williams et al., 1989; Newton-Bishop et al., 1996), which would have made any detailed analysis of ‘draw and write’ data extremely difficult. This may illustrate the time-consuming nature of working with ‘draw and write’ data, suggesting that it is perhaps only suitable for studies where the number of participants result in manageable quantities of data.

66. Analysis of only the ‘write’ data

In some studies only the writing element of ‘draw and write’ has been analysed (McWhirter et al, 2000; Smith & Callery, 2005). The data were sorted into pre-determined themes (McWhirter et al., 2000) or themes arising from the written data (Smith & Callery, 2005). It is difficult to ascertain why reference is not made to analysis of the drawings, and it seems possible that their omission from the analysis resulted in important data

being ignored. However, it is important to appreciate that the problems associated with analysing children's drawings are daunting.

67. Analysis of both the 'draw' and' write' data

Amongst researchers using 'draw and write' there has generally been a lack of comment regarding analysis methods. Whilst some have identified a particular strategy, such as Russell et al.'s (2004) five step method, others have given little indication of the process involved. The majority of the papers reviewed stated that analysis included all of the 'draw and write' data (Maunther et al., 1993; Box & Landman, 1994; Pridmore et al., 1995; Newton-Bishop et al., 1996; McGregor & Currie., 1998; Bradding & Horstman, 1999; BYearne, 1999; Mulvihill et al., 2000; Gabhainn & Kelleher, 2002; Horstman & Bradding, 2002; Caraher et al., 2004; Russell et al., 2004; Franck et al., 2008; Horstman et al., 2008). It is possible that this process is problematic for some researchers because it involves analysis of artwork (Backett-Milburn & McKie, 1999). However, this would appear to be an important element in 'draw and write' research. I believe it is worth noting that, even where researchers have gained children's written or verbal interpretations of their artwork, it has still been regarded as valuable to analyse the content of their illustrations. This may be because they wrote or said little about their art, or that they concentrated on specific areas, or because they discussed broad themes rather than the minutiae of their drawings. The problem facing the researcher is that usually, at some point in the research process, that section of the data must be transposed from being primarily visual, and placed into a conventional written and/or numerical form for dissemination.

In some research adopting the 'draw and write' method, the analysis process is clearly documented (Maunther et al., 1993; Brading & Horstman, 1999; Horstman et al., 2008), although the methods used vary considerably. A number of research studies have analysed picture content 'at face value' in terms of objects, people and places. On some occasions, particularly amongst earlier 'draw and write' research, the picture content has been quantitively analysed leading to the comment that;

> "Researchers using 'draw and write' method are unsure about how to analyse and make sense of the data except by counting it"
>
> (Backett-Milburn & McKie, 1999, p393)

Frequently, quantitative analysis was used in studies involving very large numbers of participants (Gabhainn & Kelleher, 2002), but in some studies quantitative analysis is employed where there are as few as 32 participants (Byrne, 1999). In some cases quantitative analysis may be appropriate, for instance in Eiser and Patterson's (1983) work demonstrating changes in children's knowledge of body organs, where they aimed to simply count how many organs had been located in the correct place. However, I would suggest that this form of quantitative analysis may fail to take account of the impact of children's development.

Some researchers have used picture content analysis in a more qualitative manner, usually by coding and categorising data (Horstman & Bradding, 2002). The analysis of content descriptions from pictures has been supported by programmes such as NUD*IST in some cases (Caraher et al., 2004), but the majority of studies have exclusively involved 'hand sorting' and analysis of data. Using content analysis may be particularly effective when exploring children's knowledge of specific subjects (Maunther et al., 1993; Caraher et al., 2004). Identifying emotions is possibly a more difficult challenge for research utilising 'draw and write'. In some cases content analysis has identified emotions or "what the child is trying to convey" (Horstman et al., 2008, p1005). On occasion 'broad themes' have been identified in artwork (Mulvihill et al, 2000). Several studies have stated that thematic analysis has been used instead of, or in addition to, content analysis, but the mechanism for this has frequently been unclear (Newton-Bishop et al., 1996; Smith and Callery, 2005). This may, however, be a result of large volumes of work being condensed into short academic papers.

In all cases it is clearly difficult to link data from children's drawing and writing, as well as from interviews or other sources, and as a result different forms of data are often separated during analysis (Mulvihill et al., 2000; Caraher et al., 2004). I perceive from this that there is a risk of drawings being analysed without constant reference to children's own interpretation, or without recognising their context, possibly leading to incorrect assumptions.

5 Using 'draw and write'

This chapter has highlighted that the 'draw and write' method presents researchers with a number of methodological and analytic issues. It does, nonetheless, offer a means of enabling children to communicate their ideas using skills which are familiar and in which they feel confident. 'Draw and write' also appears to provide children with a choice for imparting information in different ways, and this may result in 'richer' data (Porcellato et al.,1999), as they present contrasting ideas and perspectives using various mediums (Backett & Alexander, 1991). Our current understanding of child development and use of art suggests that this method may assist children in constructing complex ideas and recalling events (Horstman et al., 2008). However, Backett-Milburn and McKie (1999) note that children's pictures should not be viewed as "absolute truths" (p394). Instead, they argue that 'draw and write' provides data which are inclined to strongly reflect the context and the nature of the questions that children are asked, their development and artistic skills or habits, and the influences of culture and social background. This indicates that 'draw and write' may be more appropriate for some subjects than for others. It also reminds researchers using it that considerable thought must be given to the finer details in the application of the method, and the rigour of the analysis.

4 Conclusion

The use of art in research involving children has a long history, commencing with early

childhood researchers who used art as a means of psychological evaluation (Dreissnack, 2006) and developing into techniques for exploring children's experiences (Horstman et al., 2008). 'Draw and write' has developed into a particular research method, used by a number of researchers investigating children's perceptions of various aspects of health and illness. However, researchers have tended to interpret the 'draw and write' method in many different ways, and I have identified no consensus of opinion on the practical application of the method or the analysis of data. It is clear that whilst 'draw and write' at first appears to be a simple research method there are a number of significant considerations, which researchers have tended to address in different ways. Ensuring ethical practice, and recognising potential risks to participants, are of concern in all research, but particular focus is required when research involves children (Backett-Milburn & McKie, 1999). I would suggest that 'draw and write' has the potential to resolve some of these issues, but only when applied within an ethical and child-orientated framework. In addition, researchers must recognise the impact that their research design and implementation may have on the data produced, because even minor elements in the research method may have a significant effect on children's participation and in the data produced (Pridmore & Lansdown, 1997). Finally, whilst visually 'attractive', detailed and complex data may be generated by 'draw and write', many researchers appear to have struggled to achieve effective interpretation and analysis (Backett-Milburn & McKie, 1999). It appears that effective use of 'draw and write' relies on an acknowledgement of the importance of child development, and recognition of the subtle interaction between the child, the researcher and the research method.

Research methodology and methods

1 Introduction

Designing a research method which facilitated the participation of children from a range of ages and abilities, and which, equally importantly, enabled useful data to be collected, was a significant challenge. In addition, negotiating with gate-keepers, gaining consent from children and working with them as research participants encompassed a range of important considerations. This chapter briefly outlines the research design of my study, and then explores the philosophical framework within which it was based. It then details and justifies the methods employed for collecting and analysing data. It also discusses the practical application of the research method during data collection, and reflects on some of the experiences gained during this period of the research.

2 Overview of the research design

This research employed an adaptation of the 'draw and write' method. The 'draw, write and tell' method which I developed was used in conjunction with a story telling activity. The research involved showing primary school children a series of four picture boards,

which told the story of a crying baby who needed to be fed. The children were then to be asked to draw a final picture for the story, showing how the mum fed the baby, and encouraged to annotate their drawing if they wished to. It was decided to keep observational notes of the interactions between the children and others in the room during the research activity. Each child was then to be offered the opportunity to talk to me about their picture. It was intended that data collection would take place in two schools in two contrasting areas. Children were recruited from Year 1 (age 5/6), Year 3 (age 7/8) and Year 6 (age 10/11). It was intended that around 60 children would participate. The strategy for analysing the data was to code and categorise the children's pictures, text, verbal accounts and the observational notes, and then identify areas for discussion using techniques such as charting and mapping.

3 Philosophical framework and methodology

1 Views of children and childhood

The aim of this research was to explore children's infant feeding awareness. Whilst indications of their level of knowledge around the subject did occur, it was not the intention to measure this or to identify how accurate their ideas were. The focus was on children's individual perceptions, and on an attempt to view the subject in terms of the aspects which had meaning for them. A qualitative approach was recognised to be most appropriate (Snape and Spencer, 2003). Fundamental to this research was the influence of postmodern views of children and childhood (Einarsdottir, 2005). As such children were regarded as knowledgeable, thinking and active members of society (Prout and James, 1990). In addition, they were viewed as "social actors" in their own right, rather than as extensions of their parents, families or other adults (Prout and James, 1990). It was also recognised that research involving children "must be premised on an appreciation of the social context and world of the child" (Backett-Milburn and McKie, 1999). This involves not only their location in the social construction of 'childhood' but also other variables such as class, gender and ethnicity (Prout and James, 1990). It was also viewed as important to recognise children's age and development as significant, although it was recognised that this concept has a complex relationship with the notion of children as complete human beings in their own right (Prout and James, 1990).

2 Identifying an appropriate 'methodological fit'

This research was not initially approached with a particular methodological framework in mind, but with considerable regard for the principles noted in the previous section. Based on the literature relating to child development and children's participation in research, it was necessary for the design of the research to be pragmatic (Flick, 2009). A storytelling method, using text, verbal and visual methods, and the creation of naïve art[45], did not lend itself to many of the established methodologies. As such generic qualitative

research, which does not “focus the study through the lens of a known methodology” (Caelli et al., 2003, p4), was employed. This concept has not always been well received by commentators (Morse et al., 2002; Snape and Spencer, 2003), who suggest that it is difficult to establish the consistency and validy of research without reference to a particular research tradition (Snape and Spencer, 2003). However, others recognise that generic qualitative research is most appropriate for some research subjects, and some particularly note its effective use in the field of educational research (Caelli et al., 2003). Caelli et al., (2003) identify four key areas which researchers should address in order to establish credibility in generic qualitative research; the theoretical positioning of the researcher, the congruence between methodology and methods, strategies that establish rigour, the analytic lens through which data are examined. This research has sought to address each of these elements (see 6.3.3, 6.3.1, 6.4.8 and 6.5.4).

3 My position as researcher

As a midwife, antenatal teacher and advocate of breastfeeding I acknowledged early in the research that I would need to maintain a reflexive approach (Snape and Spencer, 2003), in an attempt to achieve neutrality and objectivity around the subject. However, in this I was assisted by two factors; firstly, the generally accepted notion that breastfeeding is the optimum feeding method for babies. Whilst this did not affect the objective analysis of the data, it means that my comments relating to this are based not in personal belief and prejudice, but on a wealth of previous research, thus adding weight to my discussion and conclusions. Secondly, my belief in listening to children’s and respecting their opinions meant that a strenuous effort was made to represent their views, using their own interpretation of their work, without seeking to influence or manipulate it in any way.

4 Exploring perceptions and awareness

The aim of this research was not to identify children’s knowledge of infant feeding. Infant feeding is, for most children, a peripheral activity once they have ceased to be infants themselves. As such they may lack detailed knowledge, and I would suggest that exploring perceptions and awareness is appropriate for a subject where children’s understanding is likely to be quite nebulous. To achieve this it was essential to attempt to understand children’s perceptions by seeing infant feeding ‘through their eyes’ rather than through an adult perspective.

68. A short note regarding ‘awareness’ and ‘perceptions’

The aim of the research study was to explore children’s awareness and perceptions regarding infant feeding. Identifying participant ‘awareness’ and ‘perception’ is complex, and has challenged many researchers in other fields (Marikle & Joordens, 1997). Both of these nouns suggest a quality different from knowledge or understanding, and are far less tangible or measurable. Awareness does not imply specific knowledge. Originating from the Old English word ‘gewær’, meaning watchful, it is to be “acquainted with or

mindful", and "conscious of" (Chamber's, 2009). Perception is described as "becoming aware through the senses, to recognise and observe" (Collins English Dictionary, 2009). It is associated with gaining "insight of the world through sensory preceptors" (Collins English Dictionary, 2009). Indeed, it is argued that one can have perception without awareness, because the senses absorb information unconsciously (Marikle and Joordens, 1997). Again perception is not directly connected to knowledge but is deduction through observation.

Awareness is a very 'fragile' commodity, and can present a problem reminiscent of the Schrodinger's cat paradox, albeit involving humans rather than quantum physics. The problem is one of 'entanglement', so that in the act of observing the observer becomes an influence on, and involved in, the outcome of the research (Gribben, 1984). In human research I would suggest that the subtleties of participants' awareness, because of its fragility, can be affected by inclusion in the study. Previous infant feeding research with children (Mackay, 1995; Russell et al., 2004) has presented them with ideas or information about feeding options, possibly affecting their responses. The intention of my research was to minimise adult influence and enable children to present whatever ideas they felt were relevant.

4 Identifying a suitable research method

1 Key considerations

The central consideration in the choice of method for this research was that it had to allow children to show infant feeding through their own 'frame of reference' (Gauntlett, 2004). To enable this it was also essential that the method complemented children's thought processes and was appropriate to their stage of development. The review of the literature suggested that children may be limited in articulating their thoughts on infant feeding because of a lack of vocabulary relating to the subject (Russell et al., 2004). As a result, it was decided that a method related to children's play or a creative activity would be more suitable than an entirely verbal or written method. An additional consideration, which had some influence on the research method, was the possibility that some children, parents and teachers might find the subject of infant feeding, or specifically breastfeeding, rather a 'sensitive' subject. This highlighted the importance of using a 'low impact' and child-led approach. Practicality and organisation were also significant elements in the research design, as discussed in 5.2.2.

2 Options considered

A number of 'creative methods' were considered during the planning stages. Despite their popularity in other studies it was thought that asking children to produce

photographs or video (Gauntlett, 2004; Darbyshire et al., 2005) was inappropriate for the subject of this research. Equally acting and puppetry (Greene et al, 2005) would have offered challenges in terms of the potential sensitivity of the subject matter, and it may have been difficult to gain a positive ethical opinion for research which involved filming the children's work. Other mediums, such as clay or Lego™ (Gauntlett, 2007), were tempting in terms of their tactile nature and appeal to children. However, they lacked the adaptability to enable children to depict complex ideas or emotions, and were very reliant on children's previous experience and ability in using these materials. Creative writing (Punch, 2002) was considered unsuitable for younger children in the primary school age range, or for those with learning difficulties. Collages (Vaughan, 2005)[46] were discussed at some length because it was felt that some children might find it difficult to create their own images of infant feeding, and using pre-printed images might have reduced this problem. However, on further consideration it was decided that using media derived images of infant feeding would result in the artwork not being a true depiction of infant feeding through the children's own 'eyes'. Art was chosen as a method that children would find familiar, and which is recognised as a means of communicating ideas and emotions. It was also a method which would promote children's development and thought processes. In addition it was appropriate to all ages of primary school children, and was non-threatening and comprehensible to both child participants and adult gate-keepers.

3 The development of 'draw, write and tell'

Following consideration of a number of research methods 'draw and write' appeared to suit the requirements of the research. The opportunity to combine art with writing would enable some children, especially in the older age groups, to add a written element to their artwork. It was hoped that this would provide greater detail and insight into their ideas. In addition, the importance of children's own interpretations of their work was recognised (Horstman et al., 2008), indeed offering children the opportunity to describe and explain their work was an essential element in the method. This aspect was not designed to be a separate interview (Backett & Alexander, 1999), or intended to supersede the visual and written data (Woods et al., 2005). Instead it was seen as a natural extension of the child-led 'draw and write' exercise, and planned largely as an opportunity for children to 'tell' rather than be questioned. To identify the children's verbal contributions as an integral aspect of the research I decided to name the method 'draw, write and tell'[47].

4 Sampling strategy and sample size considerations

For the purposes of this study 'children' are defined as being between the ages of four and eleven years[48]. Previous research regarding primary school children's attitudes to infant feeding has concentrated on single year groups (Mackay, 1995; Russell et al., 2004). Children's development in this period is so significant that it is difficult to draw meaningful conclusions about 'primary school children' without involving children from

across the age range. In order to explore children's awareness of infant feeding, and the changes that occur in this as they mature, it was appropriate to include as wide an age range as possible in the research. It was therefore decided that children from Year 1 (age 5/6)[49], Year 3 (age 7/8) and Year 6 (age 10/11) would be included in the study.

Russell et al., (2004) noted that their infant feeding research would have been improved if they had been able to involve more than one primary school. Mackay (1995) identified, but did not directly describe, differences between the infant feeding ideas of children in affluent rural and less affluent urban schools. Drawing on these findings it was therefore decided that it would be meaningful to investigate this issue further by working with schools in contrasting areas.

Having decided that the objectives of this research would be best served by involving children from six classes - three age groups in two contrasting schools - it was necessary to consider how many participants would be appropriate. Working with six classes could potentially have involved collecting data from 180 children[50]. Managing complex 'draw and write' and interview data from such a large number of participants would have made it difficult to attempt in-depth analysis (Sandelowski, 1995). At the same time it was important to consider the level of detail and consistency of the data that might be collected (Morse, 2000). Researchers using 'draw and write' have had very varied experiences when collecting data from primary school children and a number of factors appear to influence the nature of data collected (Eiser & Patterson, 1983; Pridmore & Lansdown, 1997). It was anticipated that some children might present large amounts of data, whilst others, especially in Year 1, might provide less substantial contributions. Morse (2000) suggests that for "shallow" (p4) data gathered from single semi-structured interviews[51], a researcher might consider 30-60 participants. Whilst it was hoped that 'draw, write and tell' would provide more than "shallow" data, children's awareness of infant feeding was not likely to be very complex.

As a result of these considerations it was decided that it would be appropriate and practical to collect data from around 60 participants. This sample would preferably consist of ten children per class, with an even distribution of girls and boys, although this was dependant on class sizes and consent from parents and children. In the event that more children had parental permission than the target number of 60, then a sample of 10 children from each class would be taken in alphabetical order from the class register. This number of participants was thought to be practical in terms of data collection and individual verbal discussions in the classroom. Although the research deliberately sought a stratified sample, including children from a range of age groups and from contrasting areas, it was recognised that this was not statistically representative. Trost (1986) describes this as "statistically non-significant stratified sampling" (p54). Sandalowski (2000) expands on this, noting that;

> Although this kind of sampling is - from a probability sampling standpoint - statistically non-representative, it is, from a purposeful sampling standpoint, informationally representative. Each case represents a pre-specified combination of variables, the distinctive confluence of which is the focus of study. The researcher wants to explain how these variables come together to make a case

into (what) it is.

(Sandalowski, 2000, p250)

Despite the absence of a clearly defined means of assessing an appropriate sample size for this research the literature was helpful in guiding the final decision.

This research was designed to explore the infant feeding awareness of children of different ages and from a range of social backgrounds. However, the aim was to recruit children from schools which were representative of wider populations. As such schools which contained a population which was significantly different to other schools in the region were not identified as suitable for this particular research. These included schools with very high proportions of children from ethnic communities[52], and those specifically designed for children with disabilities or additional education needs. Because the research sought the perceptions of girls and boys single sex schools were not suitable for inclusion. In addition fee paying schools were not included due to their unusual demographics. Fee paying schools are not registered with Ofsted or managed by Local Authorities and did not appear in the initial list of schools in the area.

69. Recruiting schools

Data collection for this research was conducted between February and July 2008. The participating schools were located in Southern England, in a geographical area which includes a large conurbation with a population of 231,000 and a large variety of rural communities (Southampton City Council, 2009). A list of primary, infant and junior schools[53] was obtained from the local education authorities. Schools in the inner city area and in rural village locations were identified using Ordnance Survey maps and local knowledge. The most recent Ofsted (Office for Standards in Education) report for each identified rural and urban school was located online (Ofsted, 2008). Ofsted reports contain information relating to the demographics and characteristics of individual school populations. This enabled schools to be shortlisted which fitted the requirements of the research (see 6.4.4).

A short list of 23 schools was generated using the parameters listed above. Ten were infants or junior schools within central urban areas, and 13 were rural schools up to 12 miles away from the city boundaries. The schools were contacted in batches, to reduce the risk of having more positive responses than could be included. Each were contacted by letter (appendix 6) as approved by the LREC. After five working days I then contacted each school by telephone and requested a telephone or face-to-face appointment with the Head Teacher or a senior member of staff.

5 The research tool – development and implementation

70. Telling a story

It was clear from the outset that for many children the infant feeding 'draw and write' exercise might not be a recollection of a real experience, as it was in Caraher et al. (2004), or a representation of thoughts that related to their personal feelings as in Horstman et al. (2008). Instead the exercise required children to create a scene on paper, which for some may have been based on experience, but for many was likely to be a reflection of ideas gathered from other sources. The open-ended, 'third person', format of storytelling was identified by Davis (2007) as a means of enabling children to provide detailed stories based on their perceptions of ideas gained from their social and cultural background. On reviewing the literature relating to storytelling based studies (see 4.5.5.2) it was clear that infant feeding might also be suitable for this method. Blending 'draw and write' with storytelling meant that children could tell the 'story' of a baby being fed using a single image rather than having to describe verbally a complex scenario. In this case it did indeed seem that "*un bon croquis vaut mieux qu'un long discours*" – "a good sketch is better than a long speech" (attributed to Napoleon Bonaparte, 1769-1821).

71. The picture boards

As discussed in Chapter 4 (4.4.5), children may not have the same capacity as adults for grasping abstract concepts or retrieving memories (Smith et al., 2003). It was felt that it might be difficult for children to identify with the concept of 'a newborn baby', and recall or imagine a baby being fed, particularly if they were unfamiliar with babies. As a result it was decided that it would be beneficial to present children with a prompt to help focus their 'story' and provide a context within which to base their work (Davis, 2007). Prompts have been used in other research and appear to increase the length and depth of children's responses (Davis, 2007). They also appear to enable children to identify their thoughts, feelings and behaviours more effectively (Quakley et al., 2004). Prompting has not been commonly used in 'draw and write' research, and little comment is made regarding it, although Caraher et al. (2004) used a picture of an imaginary alien as a 'draw and write' prompt, and Box & Landman (1994) asked children to recall their morning activities from the point of getting out of bed in this way.

The concept of combining prompts with storytelling emerged seamlessly from a review of the literature. A series of picture boards were devised (appendix 7) which 'set the scene' and then handed over the task of completing the story to the participants. The picture boards were devised with reference to literature relating to research involving prompts. Limited literature was located but it was clear that it was important for 'cue' boards to be 'neutral' (Saywitz & Snyder, 1996; Brown & Pipe, 2003). Presenting children with visual prompts has the potential to bias outcomes, and may also alienate participants if they are unable to relate to the images. Davis (2007) therefore suggested that considerable care is required in the presentation of race, gender, age and stereotypes. In collaboration with staff from the Media School at Bournemouth University a number of image types were considered for the picture boards. Whilst photographs and coloured pictures may have been more realistic it was felt that the importance of producing 'neutral' representations was paramount. As a result it was decided that black and white line drawings would be

most appropriate. In addition, I felt that children would perhaps find it easier to continue their own drawings from a line drawing, rather than feeling they had to 'follow on' from a complex picture or photograph. Finally, line drawings offer considerable clarity when enlarged, unlike some other media. To ensure that the images were entirely appropriate for the research a technical illustrator was commissioned to produce them.

Each picture board also contained a short sentence. The language used in this was simple and, when read aloud, was designed to be appropriate for all participating age groups. The accompanying text was designed as a series of statements. Statements have been demonstrated to elicit more considered responses and debate from children than question based exercises (Lewis, 2001). The text was printed using 'century gothic' font, which is clear, but proportionately spaced for easier reading. In addition it is a 'sans serif' font (letters formed without tails), containing simple letter formations, in particular having a simple letter 'a'. 'Sans serif' fonts are appropriate for short lengths of text where clarity is essential (Wikibooks, 2008). The reading age of the text was assessed at approximately seven years by an experienced primary school teacher[54]. It was not essential that children could read the text however because it was read aloud. The picture boards were printed in high resolution black ink on standard International size 'A0' (1189mm x 841mm) white board.

6 Practical application of 'draw, write and tell'

72. Introductions

At the beginning of the data collection session the activity was introduced by a short talk, with the class sitting informally 'on the carpet' [55]or at their desks. As the researcher I introduced myself and told them that I was a midwife. We then had a short discussion of their ideas about what midwives do, and whether they had met a midwife before. They were all intrigued with the idea that they had probably met one when they had been born! The subject of 'research' was then introduced, attempting to relate investigative activities that they undertake at school with formal research. The children appeared to understand this and were familiar with the concept of research. Even Year 1 children recognised the term and had 'done research' themselves, for example they described interviewing grandparents about wartime rationing or visiting the library to consult text books.

As discussed previously (5.2.2) 'draw and write' has been used in a multitude of different forms. Because the aim of this research was to see infant feeding from children's perspectives it was felt that it would be counterproductive to be proscriptive regarding their contributions. As such they were provided with blank paper, rather than pages with divisions, text areas or speech bubbles, as employed in some other research (Pridmore &Bendelow, 1995). The children were asked if they would draw the final scene in the story, and it was explained that they could also add writing on the page if they wished. Because of the spread of age ranges, and the possibility of participants who were non-English speakers or had special educational needs, it was anticipated that some children

might not add text to their artwork. This was not perceived to be problematic.

Practical considerations placed some limits on creativity. Because of the requirement to scan the artwork (see 6.4.7.1) it was necessary to provide children with A4 white paper. In addition all the participating schools preferred coloured and carbon pencils[56] rather than felt tip pens[57]. Paint was not an option because the art had to be scanned immediately after the exercise. However, a very large quantity and range of pencils was provided for every classroom, so that all children could use any colours they wished to. Erasers and pencil sharpeners were provided and children were aware that they could ask for more paper if wanted.

There were no time limits placed on the time taken to complete the activity, and in most cases there were no restrictions on where children sat in the classroom[58]. The instructions for the activity did not preclude children from discussing the subject or looking at each other's work, but equally it was not suggested that they did so. The only specific control was that children did not write their name on their work so as to maintain anonymity. The reasons for this were explained to them during the preamble to the exercise.

73. Maintaining consistency

Following the introduction the idea of telling a story was introduced. The children were told that they would be read a short story, illustrated with pictures, and asked to draw a picture to finish the story which they could add writing to if they wished. During the introduction the concept of the children giving their own 'permission' to let their drawings or words be used in the research was explained. They were given options of other activities[59] if they preferred not to take part. I also explained that I would ask some of the group whether they would like to talk to me about their pictures. At this point I explained, simply, the concept of random sampling, which it was hoped would reduce the problem, highlighted by the LREC (see 6.5.2), of children feeling excluded. A very similar explanation was used for classes of different ages, but this varied depending on the needs of each group and I also responded to children's questions.

The picture boards (appendix 7) were then shown to the whole class, and the text read out by me exactly as printed. Variation in the presentation of the story and the instructions between the classes was kept to a minimum. The only significant difference between groups was that the children were told at the beginning of the story that the baby was newborn, and this concept was discussed with each group according to their understanding. For the Year 1 classes the children agreed that this was "a baby with no teeth yet", whilst the class 3U appeared confident with the description of a baby that "had just come home from being born", and 3R decided it was "just a couple of days old". The Year 6 classes did not seem to need any further explanation than the baby being "newborn" and "very young"[60]. This discussion was significant because I have observed[61] that children may find it difficult to identify that 'babies' move through many developmental stages. It therefore seemed appropriate to enable the group to have a discussion about this issue and reach a common understanding with each other, and

with me, of what a newborn baby was like. Having seen and heard the story each group was asked if there were any questions and were then asked to begin their drawing. Once the initial part of the story had been told the picture boards were removed from sight.

74. Equipment

Prior to the introduction each table was laid with a pile of white A4 paper and a large box of freshly sharpened colour and carbon pencils, as well as a sharpener and an eraser. The tables were cleared of all extraneous materials, particularly printed items such as books or worksheets. A laptop computer and portable scanner was used in the classroom for scanning the artwork.

75. Observation

Written observations were made of significant interactions between the children or adults in the room during the drawing activity. However, in a large classroom it is impossible to listen to every conversation, and there was no attempt to identify individual discussions. Most of these observations relate to the general environment of the classroom and the groups' responses to the research activity. In many cases it was possible to identify which children had sat in close proximity to each other during the 'tell' part of the activity, but because the children were anonymous it was impossible to produce any classroom plans of where they had all been located. In retrospect it may have been helpful to have found some means to achieve this, although the children did not necessarily interact with those who they sat directly next to, so this may not have been especially informative. The observational notes were added to staff, in the staff room or in my car prior to leaving the school site, to include comments made by staff or events which occurred during the later stages of the fieldwork visits.

76. '*Telling*'

As discussed previously some of the children were invited to talk about their artwork once they indicated they had finished drawing and writing. Not all the children had been given parental permission to talk to me, so it was necessary to identify carefully which children could be involved in this stage of the activity. This process is discussed at length in 6.5.3.3. Central to this was the concept of listening to children and enabling them to lead the discussion (Lansdown, 1994). These discussions were conducted in a quiet corner of the classroom, usually the reading area or 'the carpet', out of earshot of other children. Having sat down with me in a quiet area they were asked for their permission for their words and pictures to be used in the research. Verbatim notes of key comments made by the children were taken discretely during the discussion. Tape recordings of the discussions were not made because of the background noise of the classroom. Indeed, because the problem of noise was anticipated in the planning stages, a request to make tape recordings was not included in the submission to the LREC.

The intention of this part of the research was not to interview the children but to offer

them the opportunity to 'tell' me about their artwork. However, working with children can require particular flexibility (Grieg et al., 2007) and in some instances children were prompted with an open question if they appeared to be having difficulty in knowing how to talk about their work, or if they were very hesitant. Alternatively some children appeared to be happy to talk, and I decided to use the opportunity to converse with them in a more natural way and ask them about specific issues, such as whether they had seen a baby being fed. It was clear that different children responded to different approaches, and it was important to try and respond reflexively to their individual needs. This did not necessarily result in consistency in the data collected from the children, but possibly elicited a larger quantity of data in total. Most importantly this flexibility of approach was the most effective way of trying to ensure that all the children were able to participate as fully as they wished.

77. Ending the 'draw, write and tell' session

None of the teachers placed restrictions on the time available for the research activity, and in all cases they offered children a range of other tasks (reading, homework preparation, project work) to engage in once they had completely finished the research activity. In addition, I provided each teacher with several picture pamphlets about the role of midwives, tailored to the specific age group of their class. Each class was given an age appropriate children's story book (Isadora, 1992; Wolff, 1996[62]) for the class book cupboard or library, which contained breastfeeding references in the text or pictures, as recommended by La Leche League (an international breastfeeding support organisation). The teachers had an opportunity to check these books to ensure they approved of their content and none of the children saw these until they had finished the 'draw, write and tell' activity.

At the end of the session the children were gathered back together. They were thanked for their artwork and for sharing their ideas. They were reminded that they could ask their teachers if they had any questions about the subject. They were also told that they could tell their teacher later if they had any concerns or if they did not want me to show or write about their artwork in my research. The teachers were offered future support on the subject of infant feeding, either in the provision of teaching information or resources, or assistance with classroom teaching, for which they could ask for at any point in the future. They were reminded that children's work could be withdrawn from the study if the child or their parents requested, and they were given a phone number to contact me which was also given to school office staff. Parents had also been informed of procedures for withdrawing children after the research exercise in the introductory letter (appendix 8). Because all of the scanned pictures and the discussions were completely anonymous it had been explained to parents and children that they would need to show or describe the artwork to me in order for it to be identified and withdrawn[63]. To date there have been no requests to withdraw any child from the research.

7 Managing the data

78. Identifying the data

At each 'tell' session the individual pieces of artwork were marked with a reference number which linked it to the corresponding notes from the children's verbal interpretation of their work. The unique reference number also provided a quick reference to the year group, school, reference number, gender and age of the child. For example 3U4f8 can be broken down to a unique reference translated as:

3 = year 3

(alternatively 1,3 or 6)
U = school U (alternatively R = school R)
4 = child reference (the unique 'child' reference number in the class 1-15)
f = female (alternatively m= male)
8 = child's age (ages ranged from 5 to 11)

Pseudonyms were added to the unique reference numbers. This helped to retain the individuality of each child, and also made it considerably easier to identify and refer quickly to their work. The pseudonyms were allocated, in data collection order, from the most common 50 girl's and 50 boy's names in 2007, as listed on the UK National Statistics website (Office of National Statistics, 2008). Care was taken to ensure that the pseudonym was not also the child's real name by ensuring that no pseudonyms were allocated to a class which matched any of the children's real names.

79. Storing the data

The pictures were scanned on the school site and the originals returned immediately to the children. The scanning was initially at 600 psi, but this became slow and impractical with very large groups of children and was reduced to 400 psi. A back up copy was made on a separate hard drive to reduce the risk of data loss or corruption.

Each picture was examined at high magnification. In some cases the picture clarity was enhanced by manipulating the saturation or colour contrast. This was only necessary in a few cases where children had used large amounts of very pale colours. William's (1U8m6) art provides a good example of this (appendix 1). The picture has been re-coloured but has not been altered in any way other than to make it visible.

The picture and 'tell' session notes were then combined on an A3 page to make a 'data sheet'[64]. This allowed notes from the 'tell' session to be typed onto the same page as the picture creating a "data sheet". This was the first time that the two sets of data had been combined and proved to be an enlightening experience. In retrospect, and out of the classroom environment, it was possible to see connections and omissions which had not previously been apparent when examining the picture alone. Although the images had been reduced it was still possible to magnify them on screen at any time. The ability to magnify each piece of work was invaluable and a key benefit of maintaining the data

electronically. Some children created pictures with incredibly small and intricate details, which defied the eyesight of the researcher and could only be properly visualised with magnification. Frequently, the magnification revealed vital information which would otherwise have been overlooked, such as measurement markings on bottles or drops of breast milk.

8 Analysis

As discussed previously, and highlighted by others (Backett-Milburn & McKie, 1999), the analysis of 'draw and write' data frequently appears rather perfunctory or poorly documented (Backett-Milburn & McKie, 1999). As discussed in the previous chapter (see 5.3.4) many researchers appear to have struggled to explain the analysis process which they used in their "draw and write" research, often resulting in bald quantitative analysis of content or broad assumptions which are difficult to relate to the data (Backett-Milburn & McKie, 1999). The problem appears to arise because of the need to bridge the gap between the pictures and the written format required to discuss and disseminate their content and meaning. This has led to the comment that;

> "The fact remains, however, that nonverbal expressions of experience eventually call for interpretation, some sort of translation into the 'lingua franca' of meaningful words"
>
> (Danaher and Briod, 2005, p221)

A further issue involves combining visual data with written and oral interpretations. Whilst one approach used by other researchers has been to use only written or oral data this does not appear to value the artwork, and also results in large quantities of data being discarded (see 5.3.4). In this research some interpretation of the artwork was already in written form, from the text and verbal explanations provided by the children. Additional 'face value' interpretation of the artwork itself was undertaken using 'commentaries' (see 6.4.8.2), which resolved many of the initial problems of handling the data (see 6.4.8.1). It does not appear that this approach has been used before, and although unusual it appeared to be effective in capturing the data and helping to maintain, as much as possible, its meaning and context. This resulted in coding which related largely to the contents of the pictures, but also included any thoughts or feeling expressed in written or verbal form. However, it was also recognised that this commentary and coding added a layer of adult intervention in the data. The analysis technique used was extremely time consuming, but did result in a thorough familiarity with the data (Crabtree & Miller, 1999).

80. A blind alley

An initial attempt at analysis involved coding directly from the illustrations, text and verbal data. This proved to be unsuccessful at the coding level, creating a very 'stilted' list of codes. The inability to link images to interpretation resulted in large quantities of

meaningless data and numerous repetitions. In addition, analysis of the children's pictures was attempted directly from the pictures, which resulted in analysis based on numerical content. This became mechanistic and 'object' orientated, and did not relate to children's broad perceptions. It became apparent that it was essential to develop a means of recording the pictures' detail, but without losing their overall meaning, and of including the interpretation of the artwork held within the text and 'tell' session records.

81. Creating a commentary

To begin the analysis each picture was reviewed, along with the text, and notes from the verbal 'tell' session, which were placed below the picture (appendix 1). The picture was described in a 'commentary' with the question "what is going on in the picture?" as the focus. The children's text and notes from the 'tell' sessions were blended into the commentary. The aim was to keep the child's 'view' of the scene, and the child's 'voice' from the 'tell session', at the centre of the description (Backett-Milburn & McKie, 1999). In the commentary the picture was described, starting from the main features and working through to smaller details. The text and the children's comments in the 'tell' session were inserted at appropriate points in the commentary to provide illumination of the picture. The children's written and spoken words were inserted into the commentary 'verbatim'. This enabled greater clarity in the description and reduced assumption and subjectivity. The aim was to produce a holistic and cohesive description.

9 Coding

Once the commentary was complete it was revisited and meaning units were identified from it. This process is illustrated in appendix 10. Some meaning units spanned lengths of text or concepts in the picture, for example in Harry's (1U3m5) commentary[65];

> there is a line of circles coming from the mum's breast towards baby, "there's food there" and said "the food is coming out"

was condensed into a code 'milk flow from breast illustrated'. Some codes were single words, such as 'breastfeeding', whilst others were phrases, for instance 'mum sitting down feeding baby'. Some "in vivo" (Charmaz, 2006) codes emerged from children's quotes or text, such as "having a bottle". A list of codes generated by each child's work was generated. As far as possible the codes were identified without reference to those generated from other children's work, and care was taken to ensure that each code came directly from the data, rather than being 'lifted' from similar data in other children's contributions.

Once all the pictures had been coded the documents were passed to an independent person for checking. The codes were checked by a teacher with 43 years teaching experience with all ages and abilities of children, especially in primary schools. She reviewed each child's contribution, and the commentary produced, and considered the

appropriateness of the coding. In some cases the codes were then reconsidered through discussion between the teacher and I, and some were adapted or additional codes created. The codes relevant to the commentary were noted onto the individual's data sheet, providing a quick reference for each piece of work and also completing the analysis "audit trail". In appendix 1 every child's picture, text and words can be viewed in full, as well as the commentary, meaning units and codes that emerged from the data. During this process each piece of work was reviewed again. Cross referring each one proved to be an effective means of identifying whether any aspects of the children's work had been overlooked.

The codes were noted down onto small slips of paper, along with the child's pseudonym. A photographic record was kept of the data sorting process (appendix 11). The slips of paper were then sorted into piles where the codes had similar meanings, for instance, all the codes relating to breastfeeding. These were then subdivided into piles which shared even closer relationships, such as all codes relating to seeing milk flow or baby positioning.

10 Categories

Categories emerged from the data once the codes could not be further sub-divided. Each category was allocated a descriptive name which summed up its meaning. The category relating to milk flow which was described above was "look you can see it". The characteristics and boundaries of each category were then described. This process involved no pre-conceived categories, each was generated directly from coding. Some of the categories referred to insights gained during the analysis process rather than directly from the children's art or interpretations. Categories such as 'Sharing ideas' only became apparent when codes from different children were compared.

11 Self-interpretation of artwork

I regard the major benefit of 'draw, write and tell', compared with 'draw and write', to be the inherent self-interpretation of artwork by children. This reduces the need to impose adult assumptions on children's artwork, and greatly increases the research rigour. However, in some cases children participating in this research were unable to offer much insight into their drawings during the 'tell' element of the activity. Lack of verbal information was occasionally due to children's age and communication skills, or a result of unexpected events, such as the child having to leave the classroom part way through the 'tell' session. Time and space constraints in the 'tell' session may have impinged on establishing effective communication with some of the children, who may have been more forthcoming given more time or a different environment. I would agree with Horstman et al. (2008) that there are likely to be considerable benefits in working with children where there is the opportunity to build a trusting research relationship. Having said this, the children were not constrained in how long they spoke for, and whilst some were expansive, I suspect that in many instances the children's awareness and interest

in this subject was so peripheral that other methods would not have elicited any more information than the ‘draw, write and tell’ exercise.

Backett-Milburn and McKie (1999) focussed considerable attention on the issue of interpretation, noting the problems a “top down” (p397) approach can cause, in which children’s worlds are interpreted according to the views of adults. In this research the intention was to rely on children’s interpretation of their artwork, although in reality this was more difficult than anticipated. Lack of data provided in the ‘tell’ aspect of the research was a problem in some instances. The drawings provided a wealth of data which were often so ‘obvious’ to the children that they did not articulate it. This is an issue which has not been previously noted in the existing research, but proved problematic. As a result some of details in the artwork were not mentioned, but were clearly fundamental to the interpretation. Aspects of the interpretation were therefore sometimes reliant on ‘face value’ observations by the researcher. Great care was taken when making these interpretations, and they were checked by an independent person, but this was contrary to the initial aims of the research.

The effects of children’s development or drawing styles may have had a considerable influence on their artwork. The work of Thomas and Silk (1990) was useful in identifying likely developmental traits in children’s art. Even straightforward assumptions could have been confounded by these and as such great care was taken not to interpret elements in the children’s artwork which could be related to artistic development or style. In addition, care taken to make only ‘face value’ interpretations, and not project deeper meanings or mental states (Thomas, 1995) onto the data meant that this area of interpretation largely resulted in a straightforward review of the picture contents. However, it must be remembered that this research related to a subject that was relatively peripheral to most children’s lives. The majority of the children did not appear to hold, or wish to express, strongly held opinions about infant feeding. Whilst data relating to thoughts and feelings were collected from some children (8.6.7 and 8.8.7), in many cases it was actually the content of pictures that identified broad awareness of infant feeding.

82. Computer aided data management

Whilst computer programmes may be used to assist with the sorting of data for qualitative research (Maunther et al., 1993; Silverman, 2005) it was decided that the uncertainty around analysis relating to ‘draw and write’ data meant that it was more appropriate to manage each step of the process ‘by hand’ and document it accordingly.

12 Mapping

The category labels were sorted visually and organised, and re-organised, to observe patterns that might emerge (Pope et al., 2000; Gauntlett, 2004). Mapping has been used as a method of visually organising codes or categories in qualitative data so that new links and connections may be identified (Crabtree and Miller, 1999). The mapping process used here did not identify causal links between categories but sought to arrange

them, into groups, to bring some order to the complex array of categories generated from the codes (appendix 12a). In addition, categories reflecting different feeding options were arranged together, in a way which enabled the overlap, or lack of overlap, between them to be identified (appendix 12b). Another useful exercise involved grouping the categories around questions that children might ask about infant feeding; the who?, why?, what?, when?, where? and how? questions (appendix 12c). This immediately demonstrated the areas in which children had high levels of awareness, and those of which they appeared less certain. These maps are referred to when the findings of this research are discussed.

13 Charting

All of the categories to which each child contributed were charted, using a very simple matrix, by child, school classes and gender (appendix 9a). This not only provided a visual representation but also assisted in ensuring the research rigour by providing evidence of all the children's contributions to categories. This approach is similar to that used in Framework analysis, but differed in that the charts used for this research were constructed from categories which emerged from the data (Pope et al., 2002; Spencer et al., 2003) rather than from predetermined themes. Charting was used to identify links between particular categories, children or groups of children by stripping out many of the categories to produce charts relating to specific areas of discussion (appendices 9a-9g). Unlike some analytical matrixes (Miles and Huberman, 1994), this system did not allow data, or codes, to be entered into the body of the grid. However, it was effective in demonstrating patterns in the data and identifying aspects in the data which required further exploration and discussion.

5 Ethics

As discussed earlier (see 4.3.2) particular ethical considerations may require specific attention when undertaking research with children.

1 Bournemouth University School Ethics Committee

The research proposal was submitted to Bournemouth University's School of Health and Community Studies Ethics Committee in June 2007. No amendments were required by the committee and a positive opinion on the research was received in July 2007. The process for approaching the School Ethics Committee was straightforward and it returned a prompt response.

2 Local Research Ethics Committee (LREC)

This research did not fall strictly within the remit of an LREC because it did not involve NHS patients or locations. However, because it involved vulnerable child participants, and because the subject might be regarded by some as 'sensitive', it was thought essential to ensure that the research was as ethically sound as possible. In addition, as a healthcare professional it was regarded as being within the 'spirit' of the ethical legislation to seek an opinion from an LREC.

The LREC was approached in July 2007 and the appropriate forms were completed and submitted in September 2007. The LREC met on 16th October 2007, and was attended by myself and my lead supervisor. Several issues were discussed at this meeting, and the LREC requested that some aspects of the research were adapted. The LREC concerns focussed largely around children feeling excluded from the research process if their parents had not given permission for them to participate. As a result it was agreed that all children in every class would take part in the activity as part of their normal class activities, but that only children with signed parental permission forms would be asked if they would consent to discussing their artwork and having their work copied. The parental information letter was adapted to reflect this change (appendix 8). In addition the LREC requested that more information was provided to parents regarding arrangements for withdrawing children from the study after the data had been collected. The committee were also concerned about arrangements for preventing distress and anxiety to children and parents regarding the research, especially where particular families might find the subject traumatic. It had already been decided to resolve this through discussion with individual Head Teachers. Finally the LREC wished to review the picture boards when they were completed.

Once these issues had been addressed an LREC subcommittee reviewed the research again and a favourable ethical opinion was received in early January 2008. Whilst this process was rather time consuming, and at times frustrating, the overall quality of the research was improved as a result of LREC review. Agreeing with the schools that all children would participate in the basic 'draw, write and tell' activity, even if they did not contribute to the research, proved to be key to the smooth running of the fieldwork, and also made it considerably easier for the teaching staff involved.

3 Ensuring ethical research practice in the classroom

83. "A sensitive subject"

It was acknowledged that infant feeding might be regarded as a 'sensitive subject', both because of its connection with breasts and because it is an issue which many women find emotive, often as a result of their personal experiences (Shakespeare et al., 2004). Initial discussion with the LREC highlighted their perception of this as potentially sensitive. There was concern about the reactions of not only child participants but also of parents and teaching staff.

The choice of method assisted in reducing some of the concerns around this issue. Because the research was designed to explore children's awareness it would have been counter productive to discuss breastfeeding with the children, parents or teachers prior to the activity. As such children were only able to convey ideas which they were already aware of. They may, of course, have gleaned additional information from their peers, but this sharing might have occurred in any context. It was more difficult to prevent anxiety amongst parents or teaching staff, although the issue was discussed with the Head Teachers, who agreed not to involve families or teachers for whom discussion of infants or infant feeding was likely to cause distress.

84. Gaining parental permission

The parental information letters and permission forms (appendix 8) were revised several times before distribution. Every effort was made to ensure that they were succinct and clear. However, the volume of information required to explain the research and to fulfil the requirements of the LREC thwarted attempts at brevity. The distribution of these letters is described in 7.3.

85. Issues of consent and parental permission in the classroom

In this research the issue of children feeling excluded was problematic, as discussed in relation to LREC guidance. Most important was the issue of consent for children in a classroom setting. In school settings children are generally obliged to participate in activities, so ensuring that they understood that there was a genuine choice about participating was potentially challenging. This situation is compounded by power imbalances between pupils and adults, which are an element in the functioning of most schools, and were not conducive to ensuring that children genuinely understood and could give consent to involvement in research.

In the classroom it was important to identify, discreetly, those children who did or did not have parental permission to participate. Amongst the Year 1 and Year 3 children this was achieved by asking the teacher to identify children who could take part from the compiled list of parental permission forms. Each child was offered a choice of large sparkly coloured balloon stickers, and the teacher then showed them where to place the sticker on their sweater, and asked them not to move it "because it will loose its stickiness!". Those with consent stuck it on their right side, those without on their left. It was then easy to identify which children had parental permission to discuss their work with me. The children were familiar with the concept of receiving stickers for participating in activities, and took great pleasure in choosing a colour. Amongst the Year 6 children it was more appropriate to explain that data could only be collected from a sample group in the class, a concept which they appeared to understand. The teacher could then identify which children had parental permission from those on the permission list and direct them towards me during the time allocated for the 'tell' sessions. Those children who were not permitted to discuss their work with me did not then feel 'left out'. In addition, this system meant that, although I knew the names of the children on the parental permission list, I had no means of identifying individual children from the list during the 'draw, write and

tell' activity.

At the start of the 'draw, write and tell' session the children were told that, if they preferred, they could read their reading book or draw a picture of their choice relating to another subject (see 6.4.6.1).

At the beginning of each 'tell' session each child was asked if they were happy to talk to the researcher about their picture. They were also asked if they agreed for their artwork to be scanned, and were told that it might be used when I wrote or talked about my work at the university. They were asked whether they would, or would not, allow their words to be written down and perhaps used in the research. They were reminded that their name was not on the picture and that I would not keep any record of their name.

Children were not asked for written consent, or perhaps, as discussed earlier (4.4.3.2), their assent (Alderson, 2000). It was felt that this might be intimidating and difficult for some. Children's verbal consent, or in some cases their active participation in research, within a rigorous ethical framework, has been seen to be sufficient for most research (Coomber, 2002). Children's responses to this consent process are described in 7.3.1.

86. C*onfidentiality and its limits*

It was acknowledged that the classroom environment made it difficult to achieve confidentiality; both during the 'draw and write' exercise and during 'tell' session. Every attempt was made to protect confidentiality and provide anonymity. The children's work was handed back to them following the activity, rather than to staff, so they could choose what they wished to do with it. At times teachers were quite curious about the parental permissions received, and about the data collected. Care was taken to ensure that only the classroom teacher or teaching assistant[66] knew which parents had given permission. The artwork, text and verbal data were not shared with any staff[67]. Feedback to schools at the end of the study will not identify data from individual schools to further protect confidentiality.

The issue of unexpected disclosures relating to child welfare were discussed with the Head Teacher in each school. In some cases there was considerable confusion about this, which was surprising. None of the schools specifically informed children about the limits to confidentiality in their everyday contact with staff. As such it was decided to work within the schools' usual practices on this issue, where there was an assumption that children understood that the staff would take action if they disclosed information about being harmed. This was not ideal from the perspective of ensuring participant confidentiality. In the interests of not misleading the children, or confusing them by explaining the limits of confidentiality, they were therefore not promised confidentiality as participants. In addition I remained mindful of my professional obligations as a midwife with regard to confidentiality and in respect of safe guarding children (Nursing and Midwifery Council, 2008). It was agreed with the schools that any disclosures would be reported to the appropriate Head Teacher and to my lead research supervisor. In the event no such issues arose.

87. Teaching or researching

In school environments there are frequently limited time and resources for activities outside of the National Curriculum. Therefore, it was important not to waste either the children's learning time or the staff time. This generated a conundrum because of assurances given to the LREC that no teaching around infant feeding would take place. As such the children contributed to the research but were not provided with any teaching on the subject or feedback relating to their ideas. This situation was partially resolved by providing teaching materials for teachers to use later and offering support for teachers on this subject if required (see 6.4.6.6). However, this situation was not entirely satisfactory and compounded the perception that infant feeding, and particularly breastfeeding, should not be discussed in schools.

4 Ensuring rigour and validity

Constant reference was made to the method to ensure that the validity of the research was maintained. Lewis and Richie (2003) provide a guide to improving validity. They present guidance notes regarding the key elements that researchers should consider during the course of planning, conducting and writing up research. The five headings suggested are; "Sample coverage", "Capture of the phenomenon", "Identification", "Interpretation" and "Display" (Lewis and Richie, 2003, p274) The method, interpretation, analysis and presentation of this research, as described in this chapter, have been developed with reference to these points (see 6.4.4, 6.4.3, 6.4.8 and 6.4.11).

In this research particular aspects of the design also assist with demonstrating validity and trustworthiness. Triangulation of the data was provided, in many cases, through the 'draw, write and tell' activity, which encouraged "member validation" (Lewis and Richie, 2003, p276) through children's interpretation of their own artwork. This strategy offered different methods for collecting and viewing the data, which Patton (2002) suggests adds credibility to the research findings and conclusions.

In addition, transparency of the data, and a clear 'audit trail' is provided by the presentation of the complete 'draw, write and tell' data, together with, the commentary which was generated from each set of data, and the codes which emerged from this. These are all displayed in appendix 1. The allocation of codes to categories is also clearly demonstrated in the definitions relating to each category, and the category chart identifies the categories to which each child contributed (appendix 9a). This provides a form of "thick description", which Lincoln and Guba (1985, p316) identify as important in enabling readers to verify validity and transferability to other settings.

This research was overseen throughout by two, and for a period, three research supervisors. During the research the Head Teachers and teaching staff in the participating schools observed the practical application of the research. The analysis process was scrutinized by the research supervisors and an experienced teacher. In addition, Professor Immy Holloway (Bournemouth University), Professor David Gauntlett

(City University) and Professor Jo Garcia (Institute of Education London) provided advice and comments regarding analysis. The contribution of different observers to the research process is identified by Lewis and Richie (2003) as a means of providing external validation.

88. Feedback

Following completion of the research each school will be offered the opportunity for staff to hear a presentation of the findings, although none of the data or results from individual schools will be shared. The Head Teachers may think it appropriate for some of the children to receive an adapted form of this presentation.

6 Conclusion

Designing and implementing this research study involved a number of considerations, and presented a variety of challenges. The method developed combined concepts used individually in other research studies. 'Draw, write and tell' was developed in an effort to create a child-centred alternative to the more formal interviewing techniques employed by some researchers following the use of 'draw and write' methods. The use of 'draw, write and tell' not only generated a wealth of data but it also appeared to be sympathetic to the needs of the research participants, both in terms of its creative elements but also in terms of ethical aspects, such as consent and participation. In addition 'draw, write and tell' seamlessly incorporated storytelling as a research method, and although no evidence was found of the two methods being combined previously, it was hoped that this would provide children with a meaningful context on which to base their ideas. Awareness of some of the previous methodological problems experienced by other researchers enabled the method to be developed in a way that resolved some of these issues prior to the fieldwork commencing. It also provided clarity regarding the importance of effective analysis, and the method of data collection was planned with the aim of resolving this difficulty.

Recruiting participants and conducting fieldwork

1 Introduction

This chapter introduces the schools that participated in the research. In particular, it includes an account of the infant feeding education provided by each school as part of their normal curriculum. The chapter also describes the practicalities of negotiating access for research with schools and recruiting children to the study. In addition, it uses the observation notes made during and after the 'draw, write and tell' activities to describe and examine the experience of conducting fieldwork in the participating schools.

2 The participating schools

In total 20 schools from urban and rural areas were contacted from the list of 23 schools originally identified as suitable locations for the research[68]. A school in a rural location agreed to participate in the study at an early stage. An urban infant school[69] was also fairly easily recruited. The urban junior school linked to this infant school initially agreed to be involved but changes in senior staff meant that this became problematic. After some delay, and with some assistance from contacts made in the local area, a junior school with a catchment area adjoining and overlapping that of the infant school agreed to participate. The schools were referred to as School R, from the rural area, whilst the urban schools were collectively referred to as School U.

1 School R (Rural Primary)

This school was a small rural school in a very affluent part of Hampshire. It had a school population of 85 children and an annual intake of around 12 children. Ofsted (2008) described the school population as being largely from advantaged backgrounds. Ofsted (2008) noted that the school had a very low level of absenteeism and exceptional classroom behaviour. There were no children from ethnic minorities and all spoke English as a first language. Average house prices in this area were £450,000 in 2008 (Estate Angels.co.uk). Teaching at this school was generally undertaken in classes containing two different year groups. There was a very small number of staff, and the class teachers did not specialise in particular subject areas or generally teach classes other than their own. In addition each teacher was supported by a teaching assistant.

2 School U (Urban Infant and Junior)

School U consisted of an infant school and junior school on the periphery of a large city in the South of England. They share a catchment area which largely overlapped and

were located just under 1km apart from each other. The infant school had a school population of 180, with an annual intake of 60 children. Children were more likely to come from disadvantaged backgrounds. Ofsted (2008) noted a number of children with significant social and emotional needs, and an above average number of pupils with learning difficulties and disabilities. The majority of pupils in both schools were from White British backgrounds, although several other ethnic groups were represented and a few pupils were at an early stage of speaking English. Average house prices in this area were £100,000 in 2008 (Estate Angels.co.uk), and in addition there are large areas of rented social housing. Children were taught in mixed ability, single age year groups with staff generally teaching only their own class, aided by a number of teaching assistants.

The junior school had a population of 485, with an intake of approximately 120 children per year. Its catchment area was rather larger than that of the infant school[70] and included a large area not within the infant school catchment which was generally more affluent. This school educated children from a range of socio-economic backgrounds. There was a below average proportion of children with social, emotional or learning difficulties. Average house prices in the area were £275,000 in 2008 (Estate Angels.co.uk). The children at this school were usually taught in mixed ability classes containing a single year group. Classes were arranged by ability for mathematics and English. It appeared that many of the teachers had an area of specialism. The teachers were supported by teaching assistants, although they were not permanently assigned to individual classes. These two schools were collectively referred to as school U, with Year 1 pupils from the infant school and Year 3 and Year 6 pupils from the junior school.

3 Differences in infant feeding education between the schools

Prior to the fieldwork it was difficult to gain access to individual teachers to discuss the research, or indeed, to gather information about their classes or children. As a result it was not until the fieldwork visits that it became clear that the infant feeding education provided by school R and school U differed greatly.

In school R the children in Year 6 recalled receiving a visit, probably whilst they were in Year 1 or 2, from a breastfeeding mother, who breastfed her baby in the classroom. It was not known whether the teaching session had included any other elements. The teaching assistant felt that all of the children in the class would have been likely to have been present[71] for this because the composition of the class had not changed over the intervening four or five years. This was the only school based infant feeding education that the children in Year 6 had received. The teaching assistant also indicated that this teaching method had not been used for several years, and the participating children in Years 1 and 3 had not had the same experience or received infant feeding education. At the time of the fieldwork infant feeding was not part of the school curriculum.

In School U the Year 6 class had received infant feeding education earlier in the academic year, 8 or 9 months previously. It was thought that all of the children were likely

to have been present[72]. It was difficult to ascertain what form the infant feeding education had taken, and the teacher had packed away her resources because she was leaving the school imminently. However, the teaching had not included a visit from a breastfeeding mother. Infant feeding education in the school commenced in Year 6. The children in Years 1 and 3 had not received formal school based infant feeding education.

3 Planning research in school R and school U

Recruiting schools to the research, following the procedure described in 6.4.4.1, proved to be quite difficult. The principle difficulty encountered was in accessing Head Teachers to discuss the research. In no schools, other than those who subsequently participated, was it possible to arrange a time to telephone or visit the Head Teacher or a senior member of the teaching staff. Although the initial letters to schools were all addressed, by name, to each Head Teacher, it was not known whether the letter detailing the research had been read, or whose decision it was not to facilitate a meeting. School office staff generally indicated that the school was not able to participate due to lack of time or resources, or involvement in other research studies. It is perhaps noteworthy that in each of the three participating schools my initial telephone call[73] was answered, by chance, either the Head Teacher themselves or by senior teaching staff, or alternatively an initial introduction was made through personal contacts. It was only in these schools that this occurred, but this apparently eliminated the gate-keeping issues experienced in contacting other schools. In all cases where the Head Teacher was accessed directly the school was recruited to the study.

Following initial telephone discussions I attended each of the three interested schools, and discussed the research with either the Head Teacher and/or a teacher assigned to assist with the study in the school. They viewed the picture boards (appendix 7) and the parental information letters/permission forms (appendix 8), and asked various questions about the research. Each school was offered the opportunity to view and copy my enhanced Criminal Records Bureau certificate, a letter of introduction from Bournemouth University and a letter confirming insurance arrangements from Bournemouth University. A series of dates were booked for undertaking the research, which were entirely the choice of the individual schools. In the larger schools, where there was more than one class in each year group, the Head Teacher selected a participating class, based primarily on the likely interest of the class teacher in the research and the available space in the class timetable. The class teachers agreed to identify children or families for whom participation in the research might be distressing[74]. Teaching staff also indicated that they would ensure that the normal facilities for children with additional needs would be available at the data collection session.

Each school was provided with sufficient packs of parental information letters and permission forms, with printed return envelopes, and asked to distribute them to children eight working days prior to the planned data collection activity[75]. The schools then received back the sealed envelopes containing parental permission forms. These were

collected by me from the schools for collation two days before the data collection. I then produced a list of children whose parents had agreed that their child could participate in the research.

1 Children as research participants

The children who participated in this research appeared to be enthusiastic and keen to take part. They appeared to have some understanding of the concept of research and had a good grasp of the activity. Except for one child (Charlie, 1U4m5), all of the children whose parents had given permission for them to participate also agreed to participate in the activity themselves, and gave verbal consent for their work to be used in the research.

Only Charlie (1U4m5) did not appear to actively participate in the research activity, although it is possible that he viewed himself as a participant. He did not draw a picture, or write, even when it was suggested that he might like to choose a different topic. The teaching staff noted that this was not unusual for this particular child, who generally required additional assistance, and was supported by a teaching assistant throughout the research activity. However, Charlie volunteered his name (Charlie is a pseudonym, see 6.4.7.1) and his age quite spontaneously to me. This presented a dilemma regarding whether or not his contribution should be included in the research, because it was unclear whether or not he was giving assent to be involved. Whilst he did not produce any data, as such, the lack of contribution was perhaps a statement in itself, and certainly has implications for research practices when working with children. As such it was decided that his contribution (which comprised a blank sheet of paper and no verbal account except for his name and age) would be included in the research. Although his assent was perhaps equivocal there were no negative implications for Charlie in including his contribution, because his anonymity was absolute. In addition, there were clear benefits for other children and researchers in future research studies in acknowledging that Charlie's style of participation was significant.

Many of the children who did not have parental permission were keen to show their work to me. This presented a number of practical and ethical issues. However, the teaching staff were made aware of this difficulty[76], and as a result it was possible, having made encouraging comments to each of these children about their work, for me to direct them to one of the other adults in the room where they could receive additional positive feedback and be engaged in a new activity.

It was observed that only one child was from a non-white ethnic group, and this child illustrated a mother who appeared to be from the same ethnic background as the child[77]. This perhaps demonstrates the importance of the 'neutral' line drawings in the picture boards.

2 Parents

The only contact with parents during this research was via the information sheet and permission form, so it is difficult to gauge their perceptions of the research. The response rate from parents was just over 50%[78]. In school U the teachers were proactive in requesting that parents returned the forms, and this school demonstrated a higher response rate. School R acknowledged that they frequently struggled to obtain responses from parents, but did not appear to be as proactive as school U in following up parental responses. In both schools the response rate was regarded as quite normal compared to their usual response rate to letters where a parental reply was not essential. No parent called to ask for further details about the research on the dedicated telephone number given on the information sheet, and none of the teachers or Head Teachers reported parental queries.

In total 64 permission forms were returned. These included two forms where permission was refused, one where permission was partially refused (Part three was declined). It is not known what the reasons were for parents declining permission. In addition three forms were received where the parents had signed the form, but omitted to delete the options indicating whether or not they gave permission. All of these were treated as refusals. As a result 58 positive permission forms were received and 56 children[79] [80] actually took part in the research. The composition of the groups of participants are shown in appendix 13. .

3 Teachers and school staff

The key to involving schools in the research appeared to be to gain the agreement of the Head Teacher. Once this had been achieved all of the teachers and teaching assistants appeared willing to facilitate the research, and were exceptionally accommodating. It was difficult to assess whether this was the result of personal interest in research, a desire to provide varied experiences for the children or a culture in which staff abide by the wishes of the Head Teacher. In the participating schools the school office staff offered considerable assistance, particularly in the distribution and collection of sealed envelopes containing parental permission forms.

Teaching staff varied considerably in their class room style and the ways in which they appeared to perceive me as a visitor in the class. I discussed my role with all of the classroom teachers and requested that they stayed in the class to assist, particularly when I was talking to children on a one-to-one basis at the end of the session. Some maintained their control of the class and remained ‘in charge’, but others appeared to ‘hand over’ the class and, although they remained in the room were engaged in other activities. This was not problematic except in the latter part of the session when the children were discussing their artwork with me. None of the teaching staff took part in introducing the research to the children, but remained physically close to the children (sometimes sitting amongst them) and took an active interest in the discussion. The role which the teacher chose to take impacted substantially on the fieldwork, especially during the ‘tell’ sessions. At this point it proved difficult if they did not actively manage the class.

Some of the teaching staff were clearly interested in the research, particularly in the artwork produced by the children and their comments about their work. Maintaining confidentiality therefore required diplomacy. The rapid scanning of the artwork meant that children could be given their artwork directly and could choose whom they shared it with themselves.

No incidents occurred during the fieldwork which needed to be reported to the Head Teachers or to the research supervisors. To date there have been no requests from parents or children to withdraw any child from the research.

4 Conclusion

Conducting fieldwork in the participating schools involved careful planning and negotiation, and presented a number of challenges. However, it resulted in the collection of a substantial quantity of data. Describing the experience of undertaking fieldwork in schools provides background information on which to base the discussion of the research findings in Chapter 8. It highlights some of the factors which affected the practical organisation and conduct of the fieldwork, and presents the context within which the data were collected. This offers valuable insights which illuminate many aspects of the children's contributions to the 'draw, write and tell' activity.

Research findings

1 Introduction

The research findings emerged from the data through the generation of codes, which were then formed into categories. The quantity and diversity of the categories initially appeared chaotic. Gathering them into groups which shared similar characteristics provided clarity and structure. This chapter describes the categories, identifying the parameters of each and providing examples from the data of the 'draw, write and tell' contributions from which the categories have been constructed. In Chapter 10 connections are made between different categories and across groups to identify key areas for discussion. There are seven groups of categories entitled;

- Breastfeeding
- Formula milk feeding
- Solid foods
- Choice
- Looking after babies
- Watching and learning
- Words and pictures

Throughout the analysis process a strenuous effort was made to restrict comments regarding the drawings to either 'face value' observations, or to ideas described by the children in text or during their 'tell' session. On only a few occasions was any element of supposition involved regarding elements in individual pieces of artwork, and these are clearly identified in this chapter. As such I believe that the data reported here provides a reliable and solid base for further discussion. The individual children who contributed to each category can be clearly identified by referring to appendix 9a.

2 Breastfeeding

The first group of categories to be described here consists of the categories which related to children's perceptions and awareness of breastfeeding. Children in this research did not mention breastfeeding as frequently as they referred to formula milk feeding or solid foods. Despite this, the 'Breastfeeding' group of categories is presented here first because it is, without doubt, the optimal infant feeding method (Hoddinott et al., 2008). As such I believe it would be inappropriate to arrange the groups of categories in an alternative order. This group identifies the frequency and pattern of references to breastfeeding, as well as exploring the ways in which children illustrate and articulate the practice. This group consists of six categories:

- Being aware of breastfeeding
- Exclusively breastfeeding

- “Boobies”; breastfeeding words
- Illustrating breasts
- “On the sofa”; showing the positioning of breastfeeding mothers
- “Look you can see it”; the concept of milk in breasts

1 Being aware of breastfeeding

Breastfeeding was referred to by a number of the children who participated in the research (20 from 56 participants[81]). The children whose contribution was incorporated in this category all demonstrated an awareness of breastfeeding. This included those who illustrated breastfeeding as well as all those who referred to, or alluded to, breastfeeding when discussing their artwork. The codes included in this category include ‘breastfeeding’, ‘breastfed’, ‘baby breastfeeding’[82].

The most noticeable aspect of this category is the distribution of contributors across different ages and gender. Very few children in Year 1 referred to breastfeeding, and only a small number of children, who were all girls, did so in Year 3. Amongst the Year 6 children almost all were aware of the practice. This differs entirely from the pattern seen in the Formula milk feeding or Solid food groups of categories. Many of the drawings which are included in this category are very individual, as are the detailed statements which children made during their ‘tell sessions’. Looking at each picture, text and verbal contribution in detail (appendix 1) provides a wide range of information regarding children’s knowledge and attitudes to breastfeeding.

In Year 1, two children drew images of breastfeeding. Harry (1U3m5) drew and discussed his picture of a mother breastfeeding. Emily (1U7f6) also showed a breastfeeding mother and baby. The overall effect in both pictures is very ‘natural’, despite slightly confusing composition. In neither picture did the child draw the actual act of breastfeeding, but both managed to show their understanding of it very clearly. Harry (1U3m5) illustrated a baby in a cot, but also drew and described a flow of milk in an arc from mother to baby. Emily (1U7f6) was articulate in her explanation of breastfeeding, both in text and during the ‘tell’ session, but did not draw the mother feeding the baby. Although these children indicated that they had observed breastfeeding it appears that they struggled to produce a visual representation. This problem is understandable given the children’s age, artistic development and the inherently ‘invisible’ nature of breastfeeding. Unlike formula milk feeding or solid foods, breastfeeding does not clearly show a transfer of milk or food, or result in an empty cup or bowl. In addition, illustrating breastfeeding is difficult because younger children have problems in recreating complex scenes, especially where two people or objects are joined or overlaid (see 9.1.2). Despite this both children managed to clearly express their ideas in their drawing, text and ‘tell’ contributions.

In Year 3, Lucy (3U4f8), Charlotte (3U5f8) and Mia (3U6f8) all drew pictures of mothers who were breastfeeding. Their illustrations are very similar, although there are subtle

differences in the way they presented breastfeeding, which will be discussed further in 'Illustrating breasts'. The similarity in their drawings may have been caused by their close proximity during the exercise, as recorded in the observation notes, and/or a shared drawing style. Isabella (3U14f8), from the same group, also illustrated breastfeeding. Her picture is far more individual, with a number of features which are unique. She drew a very 'domestic' breastfeeding scene, where the whole family is present and involved in feeding the baby. Apart from these four girls none of the other children in 3U referred to breastfeeding. The children in 3R did not produce any illustrations of breastfeeding, or refer to it when discussing their artwork.

All of the girls, and a majority of the boys in Year 6 at both schools, referred to breastfeeding. In class 6U, the girls all clearly and accurately illustrated the practice, and many also discussed it in the 'tell' part of the activity. Their artwork is varied and represents a range of ideas around breastfeeding. By contrast the girls in 6R did not illustrate breastfeeding, but both referred to it when they were talking about their artwork. They had possibly made a conscious decision not to illustrate breastfeeding, even though they had an awareness of it. The boys in Year 6 demonstrated a very different pattern. Five of the eight boys in 6U illustrated breastfeeding. However, the other boys in the class did not do so, despite probably having received similar teaching on the subject (see 10.7.1) as their classmates during the preceding year. In common with the girls in 6U the boys' work was varied and expressed a number of different ideas. In 6R, Alexander (6R1m10) and Matthew (6R4m10) initially drew pictures of formula milk feeding, but then, after their 'tell' session, spontaneously produced second pictures which showed breastfeeding. When 'telling' about their artwork they both appeared to be aware of breastfeeding, and their initial reticence may have been due to uncertainty about the response they might receive from the researcher. Ryan (6R5m11), the third boy in this class did not refer to it.

2 Exclusively breastfeeding

Of the 20 children who referred to breastfeeding 12 exclusively illustrated breastfeeding. Amongst Year 1 and Year 3 all the children who referred to breastfeeding did so without including any other feeding method. In Year 6 six of the fourteen children who were aware of breastfeeding solely referred to it. Twice as many girls as boys illustrated breastfeeding exclusively. Much of the artwork in this category is noteworthy because it is provides very naturalistic images of breastfeeding (Isabella, 3U14f8) or very detailed descriptions (Emily, 1U7f6).

3 "Boobies"; breastfeeding words

In addition to children's visual references to breastfeeding there is also valuable information to be gained from their use of language around the subject. This category developed from the following codes; "breastfeeding", "drink from…mummy's boobie", "milk food", "fed with mum's milk", "her milk", "things", "feeding the baby" (with reference

to breastfeeding), “it sucks and gets food”, “mums feed babies themselves”, “milk from its mum”, and feeding “like that”. There were wide variations in children’s written and verbal references to breastfeeding. Some of this variation may have been due to developmental influences, but there appeared to be a number of other contributing factors.

A number of children made direct verbal references to breastfeeding. Freya (6U4f11) spoke about breastfeeding in her ‘tell’ session, and also annotated her drawing with “brest”. She had initially labelled her picture with “boobie” but then crossed that out in favour of breast. She was the only child in the study who used the exact term “breastfeeding” verbally. However, taking into account variations in age and development it could be argued that Emily (1U7f6) also spoke directly about breastfeeding when talking about her artwork, saying that the baby was “having milk from mummy’s boobie”. She also used the same words in the title of her artwork and appeared very confident when describing the practice.

Tyler (6U2m11), Liam (6U3m10), Harrison (6U10m11) and Lucy (3U) all annotated their artwork with text in which they referred to “breastfeeding” or “breastfed”, and Erin (6U5f11) labelled her picture in a diagrammatic form with an arrow pointing to “breast”. None of these children used these terms during the ‘tell’ part of the research, tending to use phrases such as “she’s feeding the baby”, instead.

Many children made oblique verbal or written references to breastfeeding. Harry (1U3m5) wrote “The mummy feed the baby”, and explained verbally that she was feeding “milk food” and “the milk is coming out”, but he did not actually refer to “breastfeeding”. Others showed clear illustrations but did not allude to it verbally. This omission may have been due to their unfamiliarity with the terminology of breastfeeding. Some children did not use explicit words and instead developed quite complicated phrases to describe breastfeeding. Charlotte (3U) said that the mum was feeding the baby “milk, you know” and added “look you can see it”. When asked directly how the baby was being fed, Mia (3U6f8), said “like that”, and pointed to her illustration of a breastfeeding mother. Henry (6U13m11) when asked the same question replied, “with milk…you know…from its mum”. Matthew (6R4m10) simply referred to breastfeeding as “the other way of doing it”.

Of the 18 children who illustrated or mentioned breastfeeding only seven actually used the term “breastfeeding”, or used an equivalent specific description or phrase commensurate with their age. Only one of these children (Freya 6U4f11) said “breast” when describing her artwork. There did not appear to be any particular association between age, gender, recollection of seeing infant feeding (as reported by some of the children in the study), infant feeding education or artistic competence in determining children’s participation in this area. It was not possible to say whether those who omitted breastfeeding terminology did so because of lack of knowledge, embarrassment, or perhaps because they just preferred the alternatives.

4 Illustrating breasts

During the course of the analysis a number of codes emerged which related to children's illustrations of breasts. It became apparent that this was an important observation, because in some cases this appeared to reflect the depth of children's knowledge about breastfeeding, or their attitudes towards the practice.

The illustration of breasts varied greatly across the groups, from very vague images, to naturalistic drawings, and to very stark, anatomical pictures. This category comprises the codes 'breast illustrated', 'drawing pictures of breasts', 'naked', 'partially naked'. The differences in the children's artwork appeared to be influenced by artistic development, experience of observing breastfeeding, classroom learning and perhaps their feelings towards the subject. This category emerged from codes relating to the artwork that children created around breastfeeding, and possibly the reasoning or origins behind these images.

It is possible to identify some patterns in the children's illustrations of breasts. In Year 1, Harry (1U3m5) and Emily (1U7f6) drew them as an integral part of the mother, and set the feeding mother and baby in a domestic scene. Their illustrations of breasts were accurate in shape and positioning, but were not especially detailed. They both showed the breastfeeding mother as undressed. This differed from all the other children in the year group, who pictured fully dressed non-breastfeeding mothers. It is impossible to know whether they truly equated breastfeeding with nakedness, or if their art skills had not developed sufficiently to enable them to combine clothes and breasts in the same picture. There is also a slight possibility that the mothers were coincidentally pictured entirely dressed in pink, thus making them appear naked.

The children in Year 3 who pictured breastfeeding approached the subject in a noticeably different way. Lucy (3U4f8), Charlotte (3U5f8) and Mia (3U6f8), sat close together in the classroom, and in some respects produced very comparable artwork. In all their pictures the mothers are very similar in appearance, and are shown standing, facing the artist and feeding their babies from their left breast. Lucy does not actually picture the breast, and the mother is drawn fully clothed in a blue tee shirt. The text alone informs the viewer that the baby is being breastfed. Interestingly, Lucy recalls seeing a baby fed "like that", and despite the lack of anatomical detail, the mother's pose suggests an accurate observation and representation of breastfeeding. Charlotte (3U5f8) and Mia (3U6f8) produced far more detailed pictures of breastfeeding, although the composition in both was a little unnatural in appearance. In their pictures the mother is unclothed from the waist up. The mothers' breasts are clearly illustrated, in a "fried egg" style (circle with a dot in the middle) and a flow of milk is seen passing from mother to baby. In neither picture is the mother actually holding the baby, so that both infants "float" at waist height. Neither Charlotte (3U5f8) nor Mia (3U6f8) referred to having observed breastfeeding. It is impossible to say whether the three similar pieces of art were a result of a collaborative effort or two girls copying from each other. This class of 30 was difficult to manage and there were a number of interruptions from outside the classroom. As a result no particular note was made of conversations between these three children during the artwork exercise, although their proximity to one another was noted (see further discussion in 8.8.8).

The final breastfeeding picture in this Year 3 group was provided by Isabella (3U14f8), who was sitting on a different table to Lucy (3U4f8), Charlotte (3U5f8) and Mia (3U6f8). Her picture differed entirely from the other three. She produced an illustration of a breastfeeding mother within a very domestic setting. The mother is fully clothed and is pictured sitting down with the baby in her arms. The picture is in profile, with a breast and nipple just visible. The overall effect is extremely naturalistic and accurate. It is interesting to speculate whether Isabella (3U14f8) placed the mother in profile to enable an accurate portrayal of breastfeeding. It is perhaps a position which reflects the perspective that a child has of a breastfeeding mother if they are sitting close together. It certainly allowed a degree of both visual and technical accuracy which is impossible if the mother is facing the viewer. Not all the characters in her picture are in profile, which suggests that she had the artistic capacity to choose the orientation, but does not tell us whether or not her choice had been thought through in detail. Isabella (3U14f8) and Lucy's (3U4f8) pictures both succeed in appearing accurate, without presenting very detailed illustrations of naked breasts.

The Year 6 artwork is far more diverse and complex. Alexander (6R1m10) and Matthew (6R4m10) drew similar pictures of breastfeeding whilst the other children in the class were discussing their artwork. Both boys initially drew pictures of formula milk feeding. During his 'tell' session Alexander (6R1m10) asked if he could do another drawing, which, it transpired, was of breastfeeding. Matthew (6R4m10) clearly expressed his understanding of both formula milk feeding and breastfeeding when discussing his artwork. After his 'tell' session he also chose to illustrate another scene, perhaps having observed Alexander (6R1m10) drawing a second picture. Both boys then came back to the quiet area of the classroom to show and discuss their second pictures, which both depicted breastfeeding. Compared with their pictures of formula milk feeding I perceive their breastfeeding illustrations to be quite minimalistic. They both drew large line drawings of breasts and nipples in profile. No other part of the mother's body is shown in either piece of artwork. These pictures are quite unlike any other drawings of breastfeeding in the study. It is difficult to know whether this style of drawing should be interpreted as a particular art form, or as a demonstration of confidence, or perhaps even as a reaction to their embarrassment around the subject. Although their breastfeeding illustrations are similar to their formula milk feeding pictures, they are less detailed and devoid of annotation. This may have been due to lack of time, although there was no pressure on them to complete the artwork quickly.

In 6U children varied considerably in their visual interpretation of breastfeeding. Adam (6U1m11), Tyler (6U2m11) and Molly (6U9f11) 'superimposed' simple breasts onto the mother's clothing. Adam (6U1m11) added "fried egg" breasts to the front of the mother's jumper, whilst Tyler (6U2m11) showed the baby latched on through her mother's dress. Molly (6U9f11) produced a picture which was very similar in some respects to Erin's (6U5f11), but differs in that the mother's breast is either superimposed on her shirt or, perhaps, depending on the interpretation of the shading, just appearing through the shirt. Her picture of the breast is very simple and discrete. Strangely the breast also appears on the opposite side of the mother's chest in relation to the position of the baby. Considering the well developed art skills demonstrated by these children it was perhaps

surprising that they did not attempt to resolve the technical issue of illustrating the process. This has links with categories “on the sofa” and “right there in the classroom”.

By contrast, Poppy (6U8f11), Harrison (6U10m11), Phoebe (6U11f10) and Henry (6U13m11) all presented their breastfeeding mothers as unclothed from the waist upwards. Poppy (6U8f11) and Harrison (6U10m11) both achieve a high level of detail, with accurate breast shape and nipples. Phoebe’s (6U11f10) picture is part of a long sequence of images and as such is much smaller and difficult to comment on. Henry’s (6U13m11) picture is quite vague and shows the mothers breast, nipple and arm. Although this is a line drawing similar to Alexander (6R1m10) and Matthew’s (6R4m10) work, the overall impression of Henry’s (6U13m11) drawing is rather less stark.

Liam (6U3m10), Freya (6U4f11) and Erin (6U5f11) all produced pictures of clothed women breastfeeding, with their clothing pushed to one side and varying degrees of anatomical detail. Liam’s (6U3m10) picture contains a detailed breast and nipple. The arrangement of clothing and positioning is rather unusual, with the mother’s clothing being pulled downwards from the shoulder to expose the breast. The result is a technically accurate breast illustration but an inaccurate interpretation of usual breastfeeding positions. By contrast, Freya (6U4f11) and Erin (6U5f11) displayed differing levels of detail in their illustrations of the breast, but both are highly realistic, “comfortable” and in context. It is tempting to say that Freya (6U4f11) has not only managed to picture a well latched on baby, but also the mother’s areola. However, based on the “button shaped” facial features of the mother and baby this detail may simply be a factor of the child’s art style.

The category ‘Putting breasts into pictures’ drew together a range of concepts and issues. A major area of interest was in children’s ability and willingness to illustrate breasts. In total 17 of the 56 children drew pictures which included breasts. One of the initial concerns about this research method was that children might experience problems in the process of drawing breastfeeding. There was the possibility that they might choose to avoid drawing breastfeeding due to the technical difficulties involved. This might have been problematic for all age groups. The youngest children clearly did experience some challenges in superimposing two figures. Whilst the older children had mastered the technical skills to achieve this they also struggled with aspects of realism and of illustrating complex poses. However, on reflection, actually drawing a breast proved to be relatively simple for many children, and it appeared that where children wished to do so they achieved a recognisable illustration. It is possible to feel relatively confident that artistic issues did not limit children’s ability to portray breastfeeding or influence this aspect of their participation in the research.

There remain some questions regarding whether children were reluctant to draw breasts for other reasons, such as embarrassment or anxiety, and whether this swayed some towards illustrating other forms of infant feeding. However, some children achieved breastfeeding pictures without drawing breasts, which is not only an effective compromise but also probably more representative of normal, discrete breastfeeding. This point is discussed further in 10.4.2.

This category also raised the issue of nakedness and breastfeeding, and it was interesting to note how many children appeared to link these. Again this has wide reaching implications around the perceptions that children may have of breastfeeding, and the educational needs in this area. Equally there was valuable information about children's knowledge, or lack of knowledge, of anatomy, which is clearly crucial to their understanding of infant feeding.

5 "On the sofa"; showing the positioning of breastfeeding mothers

This category was developed as a result of observations regarding the pose and positioning of breastfeeding mothers in the children's artwork. Codes such as 'Mum sitting down', 'mum holding baby', and "on the sofa" are incorporated in the category. Initially these codes appeared to be little more than general observations, but closer analysis revealed some significant points of interest.

There appeared to be a distinct divide between those children who pictured the breastfeeding mum standing up, and those who suggested that she was sitting. Several children illustrated a seated breastfeeding mother. Emily (1U7f6) achieved an approximation of this, in so far as she pictured furniture in her drawing. She drew a sofa and said that the baby was being fed "on the sofa".

In Year 3 there was a noticeable difference between Lucy, Charlotte and Mia's (3U6f8) work and that of Isabella (3U14f8). Although initially difficult to define, this category helps to articulate the subtle difference in the positioning of the mother and baby in relation to each another. Lucy, Charlotte and Mia (3U6f8) picture a standing or walking breastfeeding mother. Lucy's illustration of a standing mother holding her baby appears very naturalistic. She has attempted to show the mother cradling the baby, although this was perhaps somewhat too technical to easily achieve. Charlotte and Mia (3U6f8) have created pictures which are remarkably similar to Lucy's. Both have pictured the mother walking and breastfeeding. In addition, both have shown the mother holding the baby with her arms by her sides. Mia (3U6f8) in particular has produced a complex and detailed picture though, so this inconsistency in the realism of her art is especially noticeable. She was alone in adding any background detail, in the form of a rainbow and sunshine, which are perhaps a result of her personal drawing preferences. These three pictures differ from Isabella's (3U14f8) artwork, which shows a domestic breastfeeding scene, complete with siblings, dad and a cat. The mother is breastfeeding on a chair, and presented in profile, allowing a clear view of events. The mother's pose is very realistic, as is the domestic activity around her. It is possible that Isabella (3U14f8) favoured a different drawing style to the other three girls. It is also possible that the different levels of realism were a result of varying knowledge of, or exposure to, breastfeeding.

In Year 6 Alexander (6R1m10), Matthew (6R4m10) and Henry (6U13m11) all produced drawings showing only the baby and a breast, but no mother, so it is not possible to make a comment on the mother's position. Most of the children in Year 6 who illustrated a breastfeeding mother drew her standing and feeding. Some children showed the

mother holding the baby, with arms around, or at least supporting, the baby. In Adam (6U1m11) and Tyler's (6U2m11) pictures the breastfeeding mother was pictured standing, with her arms at her sides. The common practice of illustrating mothers in a standing pose was quite surprising, considering the age and excellent drawing skills of many of the Year 6 children. In addition the lack of furniture was striking. Most women sit comfortably to breastfeed, so it might have been anticipated that children who were accomplished artists would illustrate a breastfeeding mother in a seated position. In Year 6 only Erin (6U5f11) placed the mother on a chair, feeding her baby. This makes her drawing appreciably different in overall effect.

The observations from this category are difficult to define and articulate. It can be seen that the illustrations which picture a seated mother tend to be those which also include a domestic scene or in which the art is particularly naturalistic. The proportion of children who showed a breastfeeding mother who appeared to be securely holding her baby increased with the age of the children.

6 "Look you can see it"; the concept of milk in breasts

This category draws together codes relating to children's illustrations of milk from breasts. These include "the food is coming out", "you can see it", "it sucks and gets food" and 'flow of milk'. Five children illustrated their interpretation of this. Harry (1U3m5) showed a line of circles coming from the breast to the baby, and said it was "milk food" and "the food is coming out". In 3U Charlotte and Mia (3U6f8) drew lines or dotted marks between the nipple and the baby's mouth. Freya (6U4f11) presented a picture with a breast which was labelled "milk store", although she did subsequently cross this label out. In the same class Harrison (6U10m11) noted that the baby "sucks and gets food" and annotated his picture accordingly.

This category is useful in terms of articulating a concept which children may find difficult to understand. The transfer of milk from the breasts to the baby is usually unseen, and is entirely different to the very visual process of seeing a baby drink from a bottle or eat food from a bowl.

3 Formula milk feeding

'Formula milk feeding' was identified as a group of categories, partly because of the large proportion of children who referred to it, but also due to the prevalence of words, images and 'feeding paraphernalia' that were associated with it in the children's artwork. The children seemed very adept at illustrating formula milk feeding and the visual imagery involved was clear and frequently extremely detailed. It is worth noting that none of the participating children actually referred to either 'formula milk feeding', 'formula feeding', 'formula milk' or 'artificial milk', as it is commonly described by health professionals and educationalists. However, because the children did not appear to have a shared,

universal term for the practice, the term ‘formula milk feeding’ has been used to ensure clarity (as discussed in footnote 1, p.12). On occasion there are exceptions to this, which will be discussed as they arise. The group is comprised of eight categories;

- Knowing about formula milk feeding
- Just formula milk
- “Having a bottle”; describing formula milk feeding
- “Bottle”; drawing formula milk feeding
- “It has numbers on”; knowing the details of formula milk feeding
- The baby milk business; recognising brand names
- “Special baby milk”; an expedient turn of phrase
- “From the fridge”; knowing what formula milk is made from

1 Knowing about formula milk feeding

This category included all references to formula milk feeding, whether alone or combined with other feeding methods. It encompasses all pictures which include a feeding bottle, except where the bottle was said to contain expressed breast milk, and all references to “giving a bottle”, “bottle of milk”, “baby milk”, “milk” (where it is identifiable as formula milk), and all ‘other’ milks which are not breast milk.

Non-breast milk feeding was referred to by 31 of the 56 children in the study. These children were fairly evenly distributed in terms of age, gender and school (see appendix 9a). A larger number of children provided codes for this category than in any other category in the research. All the children who alluded to formula milk feeding in their ‘tell’ session also illustrated formula milk bottles, or milk jugs, or cartons in their artwork. Those children whose work is not included in the category had either illustrated breastfeeding or solid foods alone, or had not indicated any particular form of feeding. Children’s images of non-breast milk feeding ranged from an illustration of a bottle, which constituted the whole drawing (Ethan, 3U1m8), to complex domestic scenes involving formula milk feeding (Evie, 3U7f8). Some children did not actually illustrate the act of formula milk feeding, but instead pictured separate images such as a bottle, and sometimes a baby and/or a mother. A few children illustrated the bottle placed at, or in, the baby’s mouth or held in the parent’s hand in an active feeding pose. The latter was common amongst the older children, possibly due to the compositional skills required for more complex pictures.

2 Just formula milk feeding

This category described the contributions of children where only formula milk is suggested as an infant feeding method. As such it was defined by codes such as “giving a bottle”, “bottle of milk”, “baby milk”, “milk” (where it is identifiable as formula milk), and an absence of any codes relating to breastfeeding, solid foods or the omission of any

specific feeding method.

Eleven of the 31 children who referred to formula milk feeding did so without discussing any other forms of feeding. Nine of these children were from Years 1 and 3. Only two were in Year 6, and both were boys[83].

3 “Having a bottle”; describing formula milk feeding

This category developed from various phrases used by the children to describe formula milk feeding. The category emerged from codes such as “having a bottle” or “giving a bottle”.

There was no particular pattern in the distribution of children included in this category, with examples in all classes from children of different ages and genders. The frequent use of the phrase suggests that it clearly had meaning for the children, and encapsulated the act of formula milk feeding for them. However, it is essentially an illogical and meaningless phrase, as the parent is in fact giving milk rather than “giving a bottle”. As such it seems likely that it is a learned phrase and one which children pick up because of its common usage. In many ways “giving a bottle” appeared to provide convenient shorthand for referring to formula milk feeding, one which is universally understood and requires no further explanation.

4 “Bottle”; drawing formula milk feeding

Bottles, which frequently appeared to be infant feeding bottles, appeared to be synonymous with formula milk feeding, and symbolic of the practice. Children’s feeding bottle illustrations varied greatly according to their age and drawing ability, and this category includes many identifiable references to feeding bottles, denoted by codes such as ‘bottle’, ‘feeding bottle’ and ‘bottle feeding’.

The children whose work is included in ‘Bottle’ were dispersed amongst all six participating school classes. However, this dispersion was not evenly spread, and there was a marked difference between the two schools. Of the 38 children in School U, a total of 16 illustrated bottles. In School R a far higher proportion included bottles in their artwork, so that of the 18 children in School R, 13 drew bottles. Only two children, Lewis (3U2m8) and Luke (3U9m8), who referred to non-breast milk did not include a bottle in their illustration. One child (Isabella, 3U14f8) suggested verbally that the bottle in her picture was being used for expressed breast milk, and her work is therefore not included in this category.

Children’s illustrations of bottles varied from very simplistic illustrations to complex and detailed drawings. These differences are described fully in 8.3.5. Frequently, the drawing style was related to the age of the child, with an increasing level of sophistication amongst the older children. The prominence which children gave to the feeding bottle in

their artwork varied greatly. In some cases it was in proportion with the other aspects of the picture (Freya, 6U4f11), whilst in others the bottle is more central (Amy, 6R2f10).

5 “It has numbers on”; knowing the details of formula milk feeding

There were a number of illustrations of bottles which were strikingly realistic and well observed. This category reflects artwork which provided a high level of detail, and suggested a significant amount of knowledge. It was very difficult to define exactly which pictures should constitute this category, because the pictures presented a wide spectrum of detail and were very dependant on individual children’s artistic development. The defining factors for inclusion in this category were ‘measurement markings’ on the side of the bottle, regardless of whether there were actual numbers marked showing the milk volume. To incorporate any form of markings on the bottles in their artwork would require some familiarity and close observation of feeding bottles. ‘Tell’ sessions with the children who provided this level of detail also suggested that they had a greater level of awareness about feeding bottles. The codes forming this category included codes which emerged from children’s statements; “it’s got numbers on so you can measure it”, “you have to measure it”, as well as from aspects of their artwork; ‘bottle accurate with teat/measuring lines’, ‘knowledge of feeding bottles’ and ‘baby bottle detail’.

The children in Year 3 and Year 6 consistently provided a high level of detail in their drawings. Every child in Year 6 whose central image was a bottle (but not all of those who pictured a bottle as part of a collage) drew measurement marks along the length of the feeding bottle. In some cases the volume measurements are upside down (i.e. the smallest volume is marked at the top of the bottle), but this appears to be insignificant because the children are clearly demonstrating an in-depth knowledge of feeding bottle design. A number of children appeared to be able to replicate teat shapes reasonably accurately (Ryan, 6R5m11), which demonstrates a considerable level of observation. Several Year 3 children drew very accurate bottle illustrations, although they varied from some which were extremely accurate (Ethan 3U1m8, Alfie 3R6m8) to less detailed illustrations (Lily 3R2f7). Some of these children were able to articulate details about formula milk feeding, such as “it’s in a powder and you add hot water” (Amy, 6R2f10) or “you have to measure it” (Alfie, 3R6m8). Year 1 children did not produce such detailed illustrations, although their feeding bottle illustrations were still instantly recognisable. Evie did not draw vey detailed bottles but illustrated a number of bottles inside a fridge. She explained that “mum keeps them in the fridge”, which suggested a greater level of knowledge than was immediately apparent in her illustration.

Exploring the level of detail and accuracy in children’s feeding bottle drawings offers insights into the familiarity that they have with formula milk feeding and the impression that this has on them. Many of the details in their art appear to be the result of seeing and examining bottles, rather than casual observation from a distance. The concept of measuring appears to be particularly significant, which will be discussed later.

6 The baby milk business; recognising brand names

Given the number of children who referred to formula milk feeding, it might have been anticipated that some would list particular brands, especially considering the clearly defined brand images of the main formula milk manufacturers. However, only Ethan (3U1m8) named a particular product. He noted that the milk he illustrated was the popular formula milk brand, “Cow and Gate Complete”. He had seen this product at home and was able to spontaneously recall the name.

7 “Special baby milk”; an expedient turn of phrase

A number of children referred to “baby milk” when discussing their artwork with me. This category developed from specific phrases that children used to refer to milk fed to babies. As such the category relates to “baby milk” or “special baby milk” rather than just “milk”. The category focus is on the terminology rather than the children’s understanding of the content of milk (which is discussed in 8.3.8).

“Baby milk” seemed to provide a sufficient level of description of formula milk for many children. They appeared to understand that the milk in the feeding bottle was not ‘normal’ milk, although they did not offer any further explanation of the type of milk. There was no attempt from most children to consider beyond this. The term “baby milk” seemed to imply a sense of normality and appeared to obviate any further discussion around the statement. The phrase seemed to be part of a common formula milk feeding lexicon which included phrases such as “giving a bottle”. Even some of the older children (Freya, 6U4f11), who were clearly able to deal with quite complex concepts, used the term “baby milk” at face value, without being able to demonstrate any understanding of what this actually constituted.

8 “From the fridge”; knowing what formula milk is made from

Understanding children’s knowledge about the origin or content of formula milk was difficult because it was not immediately apparent in their artwork, and did not naturally emerge in the ‘tell’ session. In some cases it was appropriate to ask children a little more about the milk they had drawn, but it was difficult to present this to children in a manner which was clear. This area of discussion was not raised with all the children because it was not always appropriate, either because they appeared uncertain about feeding details in general, or they wished to discuss other aspects of their work, or because they ended the ‘tell’ session before it had reached that point.

Most of the children’s detailed and accurate knowledge around formula milk seemed to have been gleaned from their observations of formula feeding. This category comprises codes generated from a number of descriptions of the origin of non-breast milks. Children described milk as having come from “from the fridge”, from “a box”, or “from a tin”. Some offered even more detail with “milk that you buy” and “it’s in a powder and you add hot water”. It was extremely difficult to engage them in any discussion about the possible origin of “baby milk”. This issue was discussed with some of the Year 6 teaching staff.

They commented that children receive teaching around food groups and the content of foods. However, in relation to formula milk many of the children did not appear to have considered its origin or content.

Only Chloe (3R1f8) and Katie (3U12f8) suggested the origin of the milk. Chloe (3R1f8) indicated that there was coconut milk in her illustration of a feeding bottle, although it is unclear why she suggested this unusual type of milk. Possibly this demonstrates that Chloe (3R1f8) realised that "baby milk" was not the same as cows' milk. She was presumably familiar with coconut milk and this seemed to her to be an appropriate milk for a baby. By contrast, Katie (3U12f8) said that the milk was "fresh from their cow"[84]. She was very specific about this point, which indicated that she had not seen formula milk being made from powder. Possibly she also perceived milk "fresh from their cow" as a wholesome and healthy option. Although neither of the girls' suggestions were appropriate for a newborn baby, they demonstrated a deeper appreciation of the possible content and origin of non-breast milk. It was perhaps surprising that more children did not assume that formula milk was either whole or dried cow's milk, as that is the usual source of normal commercially produced milk in the UK.

This category raises some important questions about children's understanding of formula milk. It also suggests that there may be a lack of awareness regarding the differences between formula milk and breast milk, an area of discussion which will be expanded in Chapter 10.

4 Eating solid foods

This research gave children the opportunity not only to illustrate breastfeeding or formula milk feeding but also to show their awareness of solid foods. Children's understanding of solid foods in relation to infant feeding has not been explored in previous research. Indeed, because the children in this study were asked to complete a story about a newborn baby it was not anticipated that solid foods would feature so commonly in their artwork. The 'Eating solid foods' group of categories emerged from the many pictures which included solid foods, or described children's ideas about solid foods and their preparation. This group includes seven categories as follows;

- Being aware of solid foods
- Just solid foods
- Bowls and spoons; showing solid foods
- "Baby food"; identifying the unidentifiable
- "It's HiPP"; commercial baby foods
- "Carrot and marshmallows"; what babies eat
- "Mashed up"; recognising that baby food is adapted

1 Being aware of solid foods

The category ‘solids’ developed from codes which emerged from pictures containing foods other than just breast milk or formula milk. The category comprises many codes, ranging from “baby food” and “baby mush” to references to very specific foods such as “banana”, “swede” and “marshmallows”. It also includes codes where no explicit examples of food are pictured but where there is solid food equipment, such as spoons, bowls or jars. No child used the term ‘solid’ in their art, text or verbal contributions, possibly because they had not been exposed to it, but also perhaps because it appeared to be a direct contradiction of their perception of soft, mashed baby foods. This term has been used here because it is a conventional term for non-milk baby foods.

Many children, 24 of the 56 participants, drew pictures of solid foods, with a slightly higher proportion of boys illustrating or referring to solid foods than girls. The majority of illustrations were drawn by children in Year 3. It is notable that every child in 3R illustrated some kind of solid food, whilst only just over half of children in 3U did so. The reason for this difference is unknown, as there did not appear to be a marked difference in the two classes or in the interactions between the children during the exercise. In other year groups the pattern is very different.

By contrast, only three children in Year 1 referred to solid foods. It might have been expected that solid feeding would have made an impression on Year 1 children. Solid feeding is very visual and, frequently, very messy, which may well have attracted the interest of Year 1 children when observing it in the home or public areas. In addition, it would perhaps have been unsurprising if Year 1 children had not appreciated the feeding significance of the baby being newborn, and had therefore bypassed milk foods in favour of solids.

In Year 6 only four children referred to solid foods, all of them from class 6U. In two of these pictures solid food feeding was central to the piece, whilst the others formed part of a series of feeding scenes. This may have been because this age group found it easier to identify the significance of the baby being newborn.

These variations between pupils in the three age groups may possibly be a result of differing stages of child development. Children in Year 1 tended to provide relatively simple illustrations, whilst Year 3 children appeared to want to demonstrate the breadth of their knowledge. By Year 6 the children appeared keen to show their knowledge, but focussed far more on realism and accuracy, and perhaps were better able to understand that the exercise involved feeding a newborn baby rather than an older baby.

A large proportion of children illustrated solid foods. This was noteworthy as they had all had been told that the baby was newborn, and each group had agreed with themselves, and me, a definition of a newborn baby which was appropriate to their stage of development. The aim of the storytelling exercise, and the introduction to the exercise from the researcher, was aimed specifically at providing context for the children. It is uncertain whether the research was therefore less successful than anticipated in this respect, or if the children felt that solid foods were genuinely suitable for a newborn baby.

2 Just solid foods

Some children did not include breastfeeding or formula milk feeding in their illustrations or refer to them in their 'tell' session. The category therefore emerged when children whose work was found in the solid food categories were not included in the categories for breastfeeding or formula milk feeding.

Eight children illustrated babies being exclusively fed solid foods. Amongst the children who only illustrated solid foods there appeared to be no particular pattern although six of these children were boys. This group of responses raises particular questions because of the absence of breastfeeding or formula milk feeding in their pictures. It is impossible to know whether the focus on solid foods occurred because these children had misinterpreted the age of the baby, or whether they believed that solid food alone was appropriate for a newborn. It is perhaps noteworthy that none of these children offered any recollection of having seen a baby being fed. It is possible that they were therefore unaware of breastfeeding or formula milk feeding, although it seems likely that Harvey (6U6m11) and Cameron (6U12m11) had received infant feeding education along with the rest of their classmates earlier in the academic year (see 7.2.3).

3 Bowls and spoons; showing solid foods

Bowls and spoons appeared to be equated to solid feeding in the same way that bottles represented formula milk feeding. Recognisable bowls and spoons were common. This category consists of codes 'bowl', 'spoon' and 'bowl and spoon'. It represents the ease with which children could illustrate solid food feeding if they so wished. It also demonstrates that children appeared to be aware that baby food has particular properties which separate it from 'normal' food which require it to be served with a bowl and spoon rather than on a plate.

4 "Baby food"; identifying the unidentifiable

This category emerged from comments made by children about food for babies which was not specifically identified. It is formed from codes including "baby food", "food" or "baby mush". The category is similar in many ways to "Baby milk". It describes foods which children described using a generic term. It is significant because in some cases it appears the term is used because the children do not have sufficient knowledge of the content of baby foods to enable them to be more specific.

Of the 24 children who illustrated solid foods, 14 contributed to this category. These children were distributed quite equally between the year groups. It is noticeable though that all four of the children who referred to solid foods in Year 6 wrote or talked about "baby food" or "baby mush" instead of naming specific foods. Six children illustrated both "baby food" and specific "mashed up" foods.

The packaging of “baby food” and “baby mush” perhaps offers some clues regarding children’s use of such a generic term. In five of the illustrations the food is presented in a jar or tin. This is particularly noticeable in artwork where there are named foods. Chloe (3R1f8) and Ella (3R3f8) both drew a number of foods, which are seen in their natural form. They both illustrated a container, labelled “baby” and annotated “baby food” or “baby mush”. Megan (3U11f8), Imogen (3U13f8), and Tyler (6U2m11) also provide examples of this. Many of these foods appear to be commercial products rather than home produced pureed meals. This may explain why the children do not describe their content in any detail, as clearly they have not observed the process of the food being produced from identifiable items.

5 “It’s HiPP”; commercial baby foods

This category includes a specific reference to a baby food manufacturer and examples where baby food appeared to be ‘commercial’ or was presented in a ‘jar’ or ‘tin’.

Although several children appeared to allude to commercial baby foods only Alfie (3R6m8) named a specific commercial product “HiPP”. He also produced a very accurate representation of the packaging and company logo. He was aware of the product because “his baby sister had it”. As discussed in the previous category a number of children illustrated baby food in jars or tins. Apart from Tyler (6U2m11) all of these children were in Year 3.

6 “Carrot and marshmallows”; what babies eat

The children illustrated and talked about a wide range of solid foods. This category emerged from codes which list the specific foods that children mentioned, excluding breast milk, formula milk and any references to other milk such as cow’s milk and coconut milk. This list of codes is extensive and will be explored individually rather than listed here. This category also includes codes such as ‘recognising healthy choices for babies’ and ‘identifying foods for babies’,

A number of children illustrated or named particular foods. Grace (1R3f6) identified mashed banana as a baby food, and Olivia (1U6f5) drew potato (or food like potato). All the remaining children who named particular foods were in Year 3, with none naming particular foods in Year 6.

The foods which children illustrated or referred to are derived from several food groups, but largely consisted of fruits and vegetables. Bananas were identified as suitable baby foods by six children in three different classes. In addition potato was a common choice. Possibly these two foods were commonly mentioned because they reflected the foods, or the appearance of foods which children had seen babies being fed. Both are also easily softened or mashed, which may have made them appear to be appropriate choices. Carrot and swede were illustrated by several children. Again these foods are easily

mashed, and children may have observed the colour of pureed baby foods, which have a tendency to appear orange, although this is often regardless of whether they contain carrots. Luke (3U9m8) and Imogen (3U13f8) both suggested peas. Luke (3U9m8) drew whole garden peas and Imogen (3U13f8) suggested that they would be mashed up. Chloe (3R1f8) listed a large number of foods, and included mashed apple in her list.

Various soft protein based foods were drawn. Yoghurt was named by Chloe (3R1f8), Lily (3R2f7) and Luke (3U9m8). This would seem to be an obvious choice due to its consistency and common use in children's diets. Again Chloe (3R1f8) offered suggestions which were not made by other children, such as eggs and fish.

Most of the suggestions made by children were of foods which are, or are perceived to be, healthy. Three 'unhealthy' food options were illustrated. Chloe (3R1f8) drew seven different foods which were largely suitable for babies but added "marshmallows" to her list. Marshmallows were also suggested by Ella (3R3f8) and Amelia (3R4f8), with whom she was sharing a table. It is not known whose idea this was, but perhaps one of the girls had seen a baby being fed a marshmallow or something similar in appearance, or perhaps they just deduced that the texture would be appropriate for babies. Ella and Amelia (3R4f8) also suggested "melted chocolate", which may have been wishful thinking on their part or one of them may have seen babies being fed chocolate desserts.

Cake was pictured by Luke (3U9m8) and Evie (3U). However, Luke (3U9m8) was unsure about whether that would be suitable for babies. Evie possibly drew the cake as a celebratory 'birthday' cake for the "new baby" in her picture, and she commented that the cake was not for the baby because "that would be really bad".

Ryan (6R5m11) was the only child to suggest any form of non-milk drink. He referred to "juice" in his illustration of a feeding bottle, although he was clearly not sure about this and said it was "drink…juice or milk stuff maybe". It is worth noting that the baby in his picture is labelled with a note saying "a few days old".

7 "Mashed up"; recognising that baby food is adapted

Half of the 24 children who illustrated solid foods referred to foods being softened. A number of different codes combined to create this category, which referred to specific foods that had been "mashed up", "mashed", "pureed", "mushy", "mushed up" or "melted".

The children whose work was included in this category were unevenly spread across the participating classes. In Year 1, only Thomas (1R2m6) referred to "mashed banana". All the other contributors to the category were from Year 3. In class 3R, every child referred to solid food, and seven out of nine children commented on food being "mashed up" or an equivalent term. In 3U around half the children referred to softened food. In neither Year 6 class did any child refer to mashing food. It is difficult to explain why these phrases were so prevalent amongst Year 3 children but not those in Year 1 or Year 6

children. In general Year 1 and Year 6 children were less specific about food types, and their descriptions of solid foods fell instead into a different category “Baby food”. Two other categories emerged which may assist in answering this question. “Baby food” reflects those foods which children did not try to identify, but, like “baby milk” appeared to accept at ‘face value’. “It’s HiPP” describes those solids foods which are clearly commercial baby food products in terms of labelling or packaging. Both of these categories suggest food which is inherently soft.

Only five children referred to specific foods and did not suggest that they were softened in any way. Olivia (1U6f5) suggested food “like potato”, and appeared to have drawn fairly square pieces of potato. Of course, it is possible she was referring to foods which had a consistency similar to mashed potato, which is one of the few common mashed adult foods that she may have come into contact with. Callum (3U10m8) did not discuss a softened food, but he did present the carrot in a bowl with a spoon, so it would seem safe to assume that he also recognised that the food must be soft. Lily (3R2f7) spoke about swede, which again is frequently mashed. Yoghurt was mentioned by Lily (3R2f7) and Luke (3U9m8), and is clearly a food which is inherently soft and does not need any further processing. Evie (3U) spoke about cake, but commented that the baby should not eat it because “that would be really bad”, hence it would not need to be mashed or softened for the baby.

Finally, it is worth noting George (3R8m8) and Benjamin’s (3R9m7) contributions to this category. They sat close together and both produced pictures which showed bowls of mashed food. They helpfully drew pictures of the original food on the top of the mash, which clarified the contents. Benjamin (3R9m7) seemed very clear that the bowl contained carrots and potato, and drew these accurately, but George (3R8m8) seemed rather less certain and may have been using some of Benjamin’s (3R9m7) ideas in his own picture.

5 Choices

‘Choices’ in infant feeding was a characteristic shared by several categories which were linked together to form this group. This is a very diverse group which describes how children perceive the relationships between different feeding methods. The mapping exercise which produced appendix 12b was particularly helpful in identifying the links between feeding methods in this group of categories. This group also includes categories which represent children’s uncertainty about infant feeding methods. The group consists of seven categories;

- “Two ways”; being aware of breastfeeding and formula milk feeding
- “It’s optional”; making choices about infant feeding
- “The other way”; preferences and alternatives in infant feeding
- “Milk and baby mush”; being aware of milk and solid foods
- Seeing all the options

- Omission; not stating an infant feeding method
- “Not sure”; expressing uncertainty about infant feeding

1 “Two ways”; being aware of breastfeeding and formula milk feeding

“Two ways” was the term used to describe the breast and formula milk feeding choice by Adam (6U1m11). Inclusion in the “two ways” category indicated that children had demonstrated awareness of both breastfeeding and other forms of infant feeding. Alternatively, codes were taken from the children’s verbal contributions where children referred to both breastfeeding and formula milk feeding methods (Amy, 6R2f10 and Daisy, 6R3f10).

In some cases (Alexander, 6R1m10 and Matthew, 6R4m10) children’s references to breastfeeding and formula milk feeding were spread between two separate pieces of artwork, but were still viewed as the child demonstrating awareness of both feeding methods. Artwork and verbal contributions which demonstrated awareness of only breastfeeding or formula milk feeding, but did not combine them, were not included in the category. The codes taken from initial close analysis of the data included, “two ways of giving baby milk”, “two methods of feeding”, “both ways”, ‘aware of breastfeeding and formula milk feeding’, ‘knows about breastfeeding and formula milk feeding’, ‘demonstrating knowledge of breastfeeding and formula milk feeding’. These codes were collapsed into the category entitled ‘two ways’.

All of the children whose artwork and discussions related to this category were in Year 6. In school R, the year 6 children all initially drew pictures focussing on formula milk feeding using baby bottles. Having completed their artwork two boys, Alexander (6R1m10) and Matthew (6R4m10), individually discussed their artwork with me. During the ‘tell’ sessions both indicated that they were aware of breastfeeding (see 8.2.1). Both went on to illustrate breastfeeding on a separate sheet of paper from their formula milk feeding pictures. Alexander (6R1m10) and Matthew (6R4m10) were sitting on the same table and their work is similar and suggests an element of collaboration. They did not articulate why they had not initially illustrated breastfeeding. However, their body language and demeanour suggested that they were a little uncertain and perhaps embarrassed by the idea of breastfeeding. The observational notes include a comment from the classroom assistant who said that she thought they were “trying to decide if they were allowed to talk about breasts”. This was possibly exacerbated by my presence as a “visitor” in the class. Comparing the two pieces of work from each child is also interesting because the breastfeeding pictures are noticeably less detailed, with no colouring in or labelling, when compared to those of formula milk feeding. In addition they illustrated breastfeeding as entirely anatomical. Indeed, Alexander (6R1m10) and Matthew (6R4m10) were the only children participating in the study who did not identify the breast as an integral part of the mother.

The two girls in class 6R did not choose to illustrate breastfeeding and drew detailed

pictures of formula milk feeding. However, both girls were aware of breastfeeding and when discussing their artwork with me they both demonstrated a clear recollection of observing a mother breastfeeding in the classroom several years earlier. Amy (6R2f10), in particular, voiced quite a negative reaction to this experience, which is discussed in 8.7.5. It is possible that this influenced her decision to draw a baby being formula milk fed. Although both girls in the class remembered the event, the boys did not appear to share any memory of it, although the class teacher was very sure that they had been present. It is interesting that all of the children in this class who demonstrated awareness of breastfeeding all chose, at least initially, to show the hungry baby being formula milk fed.

At School U the Year 6 children had a very different approach to illustrating breastfeeding and "other" feeding. Several children combined the methods, and in all cases they did so using the same piece of paper. Adam (6U1m11) clearly depicted breastfeeding and formula milk feeding, and indicated that choice of feeding method was "optional". Freya (6U4f11) divided her page into two separate illustrations of a breastfeeding mother and baby, and a formula milk feeding mother and baby. Tyler (6U2m11) showed both methods, noting that "another way to feed a baby is breastfeeding from its mother". During their 'tell' sessions Adam (6U1m11), Freya (6U4f11)and Tyler (6U2m11) were able to explain their illustrations and could articulate why they had drawn two different images.

It is interesting that several children chose to illustrate 'two ways' of infant feeding despite the instructions following the story telling scenario. All the children were asked to show how the baby in the story was fed on a single occasion. It would be reasonable to suppose that they might therefore have just illustrated one method of feeding the baby rather than giving options. This may be as a result of developmental changes which enable children of around ten or eleven to realise a more complex and dynamic understanding of the world around them. It could also be the result of growing encouragement in schools for children to consider a range of solutions to problems, and "free think" around issues (see 4.2.5). It is perhaps worth noting that the children who produced these complex images did not create work which was similar in design, layout or text to the children around them. Each piece was unique and illustrated the different feeding methods in an entirely individual manner.

Two children's contributions have been excluded from this category although at first glance they appeared to be a good fit. Phoebe (6U11f10) depicted both breastfeeding and other feeding methods, but it is clear from her picture that she believed that these methods were not concurrent but sequential over the course of the baby's first year. As such she was not implying, as the other children were, that various feeding methods were available to mothers at any one time. Isabella (3U14f8) illustrated breastfeeding and a baby bottle, although it transpired at the 'tell' session that she had been depicting expressed breast milk stored in a baby bottle.

2 "It's optional"; making choices about infant feeding

This category summed up comments made by children, or observations of their artwork, which identify their ideas of options in infant feeding. Only Adam (6U1m11) in U6 articulated the issue, but this was sufficient to highlight the concept when looking at other children's work. Adam (6U1m11) stated that "you can do either", and his artwork showed breastfeeding and formula milk feeding and included an arrow labelled "optional" pointing between the two feeding methods. Although other children did not directly discuss this idea the notion of different options is implicit in their illustrations of two different feeding methods. None of the children who were aware of different feeding methods articulated the merits of either, although there was a strong tendency to default to formula milk feeding, with breastfeeding described as "the other way".

3 "The other way"; preferences and alternatives in infant feeding

This category shared some of the same characteristics as "Two ways" and "It's optional". It demonstrated that some children not only recognised that babies could be breastfed or formula milk fed, but provided more detail about the perceived nature of the relationship between the two methods. The codes which built this category were, "the other way", "the other way of doing it", "other milk", "another way to feed a baby is breastfeeding", "it can have milk from its mum too". Unlike the "two ways" category, this category relates specifically to instances where the child has described breastfeeding in terms of it being an alternative to formula milk feeding.

Three children produced work which contributed to this category. Matthew (6R4m10) and Alexander (6R1m10) both initially drew pictures of feeding bottles. It is perhaps therefore not surprising that Alexander (6R1m10) described breastfeeding as "other milk" and Matthew (6R4m10) commented that breastfeeding is "the other way of doing it". It is impossible to determine whether these boys really intended to present formula milk feeding as a 'first choice', or whether they initially felt more confident in suggesting formula milk feeding rather than breastfeeding

Tyler (6U2m11) drew a formula milk feeding scene and a breastfeeding mother and baby. The artwork included a caption which says "another way to feed a baby is breastfeeding". This presents breastfeeding in terms of its relationship to formula milk feeding. However, his initial caption, which he erased, said "before the baby goes on to drinking from a bottle it does breastfeeding from its mum". This clearly presents exactly the opposite interpretation and raises questions about why he changed his annotation and what he intended the meaning to be.

4 "Milk and baby mush"; being aware of milk feeding and solid foods

A number of children combined milk and solid food in their art. In almost all cases they illustrated formula milk feeding with solid foods. The category was constructed from contributions which included codes relating to both milk feeding and solid foods.

There was a noticeable pattern in terms of children's age. Only one Year1 child combined milk with solid food. Olivia (U16f5) produced a picture showing a bottle of milk next to two jars of food and a plate of more solid items. By contrast 12 of the 24 Year 3 children illustrated formula milk with solid foods. In class R3 this was frequently in diagrammatic form, whilst in class U3 the different foods were generally integral to a domestic scene. Two children in Year 6 combined milk and solid food in their art, and in fact both also included formula milk feeding, breastfeeding and solids. Tyler (6U2m11) achieved this by producing two pictures on his sheet of paper. In one picture he clearly illustrated a labelled "baby bottle" and "baby food" in jars. On the opposite side of the paper he showed a breastfeeding mother and baby. Although Tyler's (6U2m11) reference to breast, formula milk and solid food is an exception to the observed pattern, in many ways it exemplifies the link that children seem to make between formula milk feeding and solid food, and the apparent lack of a connection between breastfeeding and solid foods. Tyler (6U2m11) demonstrated that he was aware of all the different feeding methods, so his decision to combine solid foods with formula milk feeding but not with breastfeeding is especially notable. Phoebe (U611f10) developed this even further and demonstrated a sequential progression from breastfeeding, to formula milk feeding, to solids over the course of baby's first year.

In only one illustration, by Isabella (3U14f8), was a combination of breastfeeding and a suggestion of solid foods. Here the baby's father is shown holding a plate, but Isabella (3U14f8) did not elaborate on the plate, which may have held either baby food or food being taken to the breastfeeding mother. Because this is completely open to speculation it is not included in the category.

5 Seeing all the options

As discussed above only Tyler (6U2m11) and Phoebe (6U11f10) combined formula milk feeding, breastfeeding and solids in their artwork. Tyler (6U2m11) did so by presenting formula milk and solids in one area of the page, and breastfeeding in another. Phoebe (6U11f10) demonstrated a progressive change in eating habits during a baby's first year, suggesting that none of these feeding methods occurred concurrently.

6 Omission; not stating an infant feeding method

Just as some children opted to portray multiple feeding methods other children chose not to illustrate any particular feeding method. This category consisted of codes based around 'no feeding method shown', 'no feeding type identified'.

Oscar (1U1m6), William and Sophie (1U10f6) all drew pictures which did not show any identifiable feeding method. Some aspects of these drawings are quite complex. Oscar (1U1m6) appeared to remember that the baby had been crying and included this in his drawing. William's artwork was intricate, with the mother and baby entwined, which involved artistic skill and perspective beyond that which might be expected for a child of

his age. As such it is perhaps surprising that they did not include a feeding method, which was the clearly stated aim of the art exercise. It is possible that this omission was accidental, or demonstrated their lack of knowledge about infant feeding. Alternatively, it may have reflected an artistic inability to depict the details of the scene. This, or other unknown factors, could have caused them not to illustrate a feeding method.

7 “Not sure”; expressing uncertainty about infant feeding

“Not sure” reflects the responses of children who expressed doubt or uncertainty about their knowledge of one or more aspects of infant feeding. It is characterised by codes such as “don’t know”, “yes, no, well, yes”, ‘not sure’, ‘uncertainty’. Although this might be considered to lack meaning the category does in fact identify areas where children were, or felt, unsure and where perhaps experience or education had not provided clarification. This category relates only to uncertainty regarding aspects of infant feeding practice, and cases where children sounded uncertain and then did not go on to amend their answer with a more concrete response. It does not include responses where they were unsure about whether they had observed infant feeding, which is discussed in “Watching and Learning”.

The degree of hesitation, and “mmmm” noises indicating hesitation, during the ‘tell’ sessions was also unexpected. Some children, such as Olivia (1U6f5), were ‘chatty’ during some parts of the conversation but less certain in others. Many of the children who expressed uncertainty about infant feeding were in Year 1, with a decreasing proportion in Years 3 and Year 6. The main areas of doubt seemed to focus around the kinds of solid foods that babies might eat and the origin of formula milk. These are both explored in other parts of this chapter. It was difficult to say whether children were genuinely uncertain or might, on occasion, have been evasive for other reasons. It is striking that children frequently found ways of talking about breastfeeding which were slightly obtuse, and it is possible that some children perhaps wanted to say that they had seen breastfeeding but were unable to phrase it in a way which they felt comfortable with. Instead they used phrases such as “both ways” (Alexander, 6R1m10), or simply “like that” (Lucy, 3U4f8).

It became apparent that children who recalled an experience of seeing a baby being fed were less likely to express uncertainty about infant feeding. Indeed out of 17 children who contributed ‘not sure’ codes only Olivia (1U6f5) and Freya (6U4f11) had a recollection of seeing infant feeding, and in both cases these were rather vague.

6 Looking after babies

Many of the pictures contained characters other than the baby. This perhaps suggests valuable information about who the children may have seen involved in baby care and infant feeding, or who they felt should participate in these activities. It also includes categories relating to how babies are cared for, children’s awareness of babies’ needs

and their knowledge of baby ‘equipment’. This group consists of eight categories;

- Mum
- Dad
- Siblings and family
- Midwives
- “Having a cuddle”; drawing babies in context
- Ages and stages; understanding that babies change
- “Babies eat a lot”; demonstrating knowledge about babies
- “Nappies and dummies”; knowing about baby paraphenalia

1 Mum

The original picture boards illustrated only a mother and baby, and the research exercise instruction asked the children to show “how might mum feed the baby?”. For this reason it was assumed that any illustrations of adults in the artwork were of the mum, unless the child stated otherwise. This category relates to codes which include ‘mum and baby’, ‘mum’s arms’, ‘face’ and ‘breast’. It also includes ‘baby alone’, or by definition, those children who did not draw any people.

Of the 56 children, 12 did not include a mother in any way (ie not even her hands or breast). Six of these examples did not include either a baby, a mother or any other people (see above). These six children all drew pictures of formula milk feeding and/or solids feeding. The mother was not completely omitted in any breastfeeding pictures, although on occasions only a breast was illustrated. Some of the children’s representations of mum were very detailed, including those which were named or labelled, sometimes very personally, with text such as “me and my mum!” (Poppy 6U8f11). Others which were far less clear, and perhaps only contained a body part (Henry 6U13m11).

2 Dad

This category was generated from references to “dad” in the children’s art or ‘tell’ sessions. Three children, Evie (3U7f8), Isabella (3U14f8) and Millie (3U15f8), drew domestic scenes which included a man, who was assumed to be the father. In each scene the father appears in a ‘secondary’ or ‘supporting’ role to the mother, which is apparent mainly in terms of his relative proximity to the baby. Whether or not this was entirely deliberate in all cases is open to question, but perhaps worthy of examination because the idea recurs in each drawing.

Evie (3U7f8) showed a father to one side of the picture whilst the mother is central and standing next to a baby in a cot. It may or may not be relevant to note that the father is much smaller in size than the mother. Although the baby does not appear to be actively fed in the picture Evie (3U7f8) shows a number of bottles of formula milk. Isabella

(3U14f8) and Millie (3U15f8) both pictured a seated mother feeding a baby, with a father standing close by. In Millie's (3U15f8) picture the baby is being formula milk fed, and the father is holding a bowl labelled "baby food". Isabella (3U14f8), who sat close to Millie (3U15f8), drew a breastfeeding mother. In her picture the father stands behind the mother and is holding a plate. Isabella (3U14f8) did not comment on this so it is unknown whether this contains baby food, or food for the mother or other characters. Isabella (3U14f8) makes a brief reference to a bottle, pictured to one side, which appeared, from her explanation, to contain expressed breast milk. Although it is impossible to draw any conclusion from this it is interesting that the only breastfeeding picture to include a father is also the only one to include expressed breast milk.

The father in Isabella's (3U14f8) picture is labelled with a note saying "mascara", which may have been a deliberate choice, but may also be the result of a drawing error, as a smudge is visable on the character's face.

An additional observation regarding this category is that all of the pictures which include a father also include other family members.

3 Siblings and family

Evie (3U7f8), Isabella (3U14f8) and Millie (3U15f8) all illustrated other family members as well as a baby, mother and father. The codes relating to this are 'sibling', 'siblings' and 'extended family'.

Evie included what appear to be a brother and sister in her picture. Like dad they are located to the far side of the picture, and the siblings are shown with a speech bubble saying "can we see the new baby". Isabella (3U14f8) shows a very complicated scene. One sibling, a brother, is sitting opposite the breastfeeding mum asking if he can "hold the baby". He is smiling, as is the father. Behind the father are two more characters, described as "his sisters". It is ambiguous whether these are therefore the baby's sisters, the brother's sisters, or in fact the father's sisters. It is difficult to interpret their names. The two figures are the same size as the father, but this may not be suggestive of them being adults. Isabella (3U14f8) comments that they "want to stop the baby crying". Indeed unlike the father and brother they are not smiling and, with very wide open mouths, they may in fact be shouting. One of the figures has speech bubbles which say "hir" "totle". It is tempting, but only supposition, to suggest that she is saying "her bottle" or "here bottle". Isabella (3U14f8) has also drawn a cat in the foreground, which has a speech bubble with an unreadable word. This picture leaves many unanswered, and tantalising, questions regarding Isabella's (3U14f8) perception of the infant feeding role of the father, siblings and, in particular, the extended family. Isabella (3U14f8) was not especially forthcoming about her picture, and left the room to go to the lavatory before it was possible to ask her about some of the aspects of her artwork.

Millie's (3U15f8) picture is very similar to Isabella's (3U14f8) in terms of composition. She included one additional figure, which appears to be a girl. The girl is looking at the mother

and father feeding the baby. Millie (3U15f8) describes baby food as “yucky”, and the character in her picture is saying “yuck”, so it seems possible that the person she has drawn is herself.

Whilst it is not suggested that the cats and dogs were directly involved in caring for the baby they did form part of some scenes and may have been regarded, by the children, to be involved as important family members. As such they are included in this section. Isabella (3U14f8) and Millie (3U15f8) added animals to their feeding scenes, which places the scene firmly in the home and enhances the sense of domesticity.

In addition, Katie (3U12f8) refers to the baby drinking milk from “their cow”, although she does not picture it or explain her comment further.

4 Midwives

Midwives were the only characters who were pictured in addition to family members and pets. Two midwives are included in the drawings. Hannah (3U8f8) drew a person, dressed in blue, who she initially described as “a nurse” and then added “one like you” (the researcher), which led to the conclusion that she meant a midwife. The midwife, who is holding a feeding bottle, and the baby are the only characters in the picture. The class teacher recalled that Hannah’s (3U8f8) younger sibling had been in hospital for some time after birth. Events in the hospital may have made a particularly strong impression on Hannah (3U8f8) which perhaps prompted her to draw this scene.

Adam (6U1m11) drew a midwife in a completely different context. The midwife in his picture is peering over the breastfeeding mother’s shoulder asking “are you happy with your baby”. It is unclear why he added a midwife to the scene. Possibly the scene came from memories of his own, or perhaps he was prompted by the discussion about midwifery at the start of the session and my presence in the classroom (see 9.1.5). It does indicate that Adam (6U1m11) identified midwives with young babies, which is helpful in terms of checking his understanding of the instructions for the research exercise. It perhaps suggests that Adam (6U1m11) regarded midwives as being involved in infant feeding. In addition he possibly interpreted midwives as being in a caring or “checking” role with regards to mothers and babies.

5 “He’s having a cuddle”; drawing babies in context

During the analysis a number of codes emerged which described the spatial relationships between the baby, other people and equipment. This was difficult to explore due to the technical problems which children, especially younger ones, often experience in orientating people and objects. It was frequently impossible to assess whether the positioning of the baby was chosen by or imposed on the child by technical composition problems. This category includes instances where the baby’s position was clearly defined, such as ‘in highchair’, “in its chair”, ‘in cot’, ‘mum holding baby’, ‘baby on mum’s

knee'. However, it does not attempt to interpret instances where the baby's position is ambiguous. As such it does not take account of the many occasions in which the mother and baby were pictured side by side. Because it was difficult to express different posistions on the category chart this category occupies three columns (appendix 9a); "Having a cuddle", 'Floating' and 'Cots and chairs'

This category may be usefully described both in terms of the ages of the participants and the form of infant feeding they depicted. It was immediately obvious that the Year 1 children were less likely to draw a mother and baby together in a pose. The artistic sophistication required to achieve this is perhaps greater than most five or six year olds are capable of achieving (see 5.1.2). As a result many children, such as Oscar (1U1m6), Joshua (1U2m5) and Olivia (1U6f5) drew two figures side by side. There were some notable exceptions to this, such as Jessica (1U9f6), who drew the mother and baby side by side, but linked them as if intending them to be joined. William (1U8m6) drew a complex picture which succeeded in presenting the mother and baby in a sitting pose, and Ruby (1R4f5) who not only drew the pair together but arranged them in a feeding pose as well. In Year 1 the only children who pictured a cot or baby chair was Harry (1U3m5), who, rather unusually, illustrated a mum actively breastfeeding her baby whilst it lay in a cot. This may have been his attempt to resolve the inherent problem of knowing that the baby must be held to be breastfed, but being unable to manage such complex composition. Emily (1U7f6) provides another example of the artistic problem by trying to depict breastfeeding but placing the baby and mother side by side. She does, however, provide a sofa in her picture, which again is possibly how she solves the issue. William was the only child who explicitly commented on the positioning of the baby, identifying that the baby was "having a cuddle".

By Year 3 it is possible to be more confident that children have represented their ideas and not been too hampered by artistic problems. Some children, such as Amelia (3R4f8), still present conundrums to the viewer, because it is uncertain whether she intended the baby to be on the floor or was unsure how to picture him elsewhere. Technical issues were still present, but did not appear as difficult to resolve. Ella (3R3f8) presented a 'floating' formula milk fed baby, but the two characters are intrinsically linked. The children who illustrated breastfeeding in Year 3 all placed the mother and baby together, although there were variations in the accuracy of the breastfeeding pose. Isabella (3U14f8) was the only child in Year 3 who pictured a formula milk feeding mother holding the baby. In Year 3 a few children also placed the baby in a chair for formula milk feeding and solid food feeding. It was sometimes difficult to ascertain the exact type of support but these appeared to range from highchairs to baby seats or cribs.

The Year 6 children who included a mother in their picture always placed the baby either attached to her or in a highchair. There were several instances, mostly from class 6R, where the mother was not present, and in those cases it is impossible to say where the baby is in relation to its mother. All of the breastfeeding mothers are pictured holding their baby, except in Alexander (6R1m10) and Matthew's (6R4m10) artwork, where only the mother's breast is present. All of the babies being fed solid foods are contained in a chair, and it is noticeable that the boys draw high chairs most frequently whilst the girls

picture cribs and seats.

The most obvious distinction in this category is in the ways that children organise pictures of breastfeeding, formula milk feeding and babies being fed solids. With a few exceptions (discussed above) almost all the breastfed babies are being held by their mothers. Babies who are being formula milk fed are far less likely to be pictured in their mother's arms. In fact, only Millie (3U15f8) and Freya (6U4f11) succeeded in picturing a formula milk fed baby in its mother's arms, although Ruby (1R4f5), Jessica (1U9f6) and Ryan (6R5m11) attempted to illustrate this. The difference between holding breastfed babies and formula milk fed babies is perhaps exemplified by Adam (6U1m11), Tyler (6U2m11) and Phoebe (6U11f10), who all drew a dual picture, with a breastfed baby being held by its mother and a formula milk fed baby not being held. Amongst the Year 1 and Year 3 children the most obvious distinction is that, with the exception of William (1U), all of the children who drew mothers holding babies were girls. None of the solids fed babies are pictured in their mother's arms. This is perhaps not surprising if the pictures are based on the children's observations of babies being fed. However, as with many of the points made regarding solid foods, it is difficult to reconcile this with the children's understanding of very young babies.

6 Ages and stages; understanding that babies change

One of the main aims of the picture boards and class discussion was to provide children with information about the baby, in particular its age, to try to enable them to focus on a newborn baby. It became clear that some children had an appreciation of the different stages that babies pass through. This category includes all references to 'age of baby' or observations such as 'young baby'.

Many of the children appeared to have illustrated a young baby. There were a few exceptions to this. Lewis (3U1m8) and Callum (3U10m8) drew babies who appear to be small children and are standing. Katie (3U12f8) annotated her picture with a note next to the baby saying "18 months". All of these babies were being fed solid foods. The babies who were being breastfed or formula milk fed appeared to be young babies.

Only Tyler (6U2m11) and Phoebe (6U11f10) indicated that babies might change and develop. Tyler (6U2m11) initially wrote that "before the baby goes on to drinking from a bottle it does breastfeeding from its mum", and although he subsequently partially erased this text he appears to have acknowledged that babies move through stages. Phoebe (6U11f10) drew a complicated sequence of pictures showing feeding methods in the first year of life. She appears to have been demonstrating the concept that babies grow and develop, and that their feeding needs therefore change over time.

7 "Babies eat a lot"; demonstrating knowledge about babies

Demonstrating detailed knowledge about baby care appeared difficult to achieve in the

artwork, but several children made comments around the subject when discussing their artwork. Codes such as ‘babies have needs’, ‘babies have feelings’, ‘knowing what babies need’ and ‘knowing what babies need to thrive’, ‘ showing knowledge of babies’, “babies eat a lot of food”, “babies only eat milk”, “babies like milk”, “milk is really good for babies” were amongst the codes included in this category.

Despite her relative youth Grace (1R3f6) was one of only a few children to make a definite statement about babies needs, saying that “babies only eat milk”. Emily (1U7f6) also identified that “babies like milk”. Lily (3R2f7) drew both milk and solid foods and noted that “babies eat a lot”, whilst Katie (3U12f8), Charlotte and Evie (3U7f8) all commented on the suitability of particular foods. Katie (3U12f8), when referring to a bottle of cow’s milk said “milk is really good for babies”. Charlotte made a similar comment, but relating to breastfeeding, when she said that the milk was “really good for babies, it makes them grow”. By contrast, Evie (3U7f8) was keen to stress that the cake in her picture was “not for the baby to eat” because “that would be really bad”. Phoebe (6U11f10) also discussed foods. She described breastfeeding, formula milk and mashed baby foods as suitable for babies, and said that babies eat “normal stuff” at 1 year. This suggests that she perhaps regarded milk and baby food as different or unusual.

Boys appeared to express their baby knowledge in different areas. In Year 3 several described toys that babies might like and explained that “babies like music” (Dylan 3U3m8). James (3R5m7) stated that “babies spend all their time in their cot”.

8 “Nappies and dummies”; knowing about baby paraphernalia

The children illustrated a range of baby toys and equipment. This category draws together a number of codes related to items such as “cot”, ‘crib’, “chair”, “dummies”, “nappies”, ‘potties’, “toys and trains”, “music”, “LEGO”, ‘baby equipment’, ‘highchair’, etc.. Items of baby equipment which were not included were feeding bottles and bowls/spoons, because they are discussed separately elsewhere.

Particular groups of children appeared to focus on baby equipment in different ways. The most common area of interest was in cots and baby chairs. Harry (1U3m5) was the only child in Year 1 to draw baby equipment in the form of a baby cot. Four of five children in 3U, and three of the seven children in 3R, who drew baby equipment drew only high chairs or baby seat/cribs. In Year 6 only four children included baby equipment. These mostly related to highchairs (Tyler 6U2m11, Harvey 6U6m11, Cameron, 6U12m11), whilst Erin’s (6U5f11) picture involved a labelled baby blanket for a breastfed baby. In some cases it appears that placing the baby in a cot or chair was perhaps an artistic mechanism which resolved the inherent problem of showing a baby being held (see ‘Holding the baby’). However, most children who drew cots and chairs have pictured formula milk or solid food feeding, and ‘containing’ the baby appears to be an integral part of this process.

In total four children drew pictures of equipment not directly related to infant feeding. In

3U Luke (3U9m8) drew a picture which included music notes and stated that “babies like music”. In 3R Alfie (3R6m8) and Samuel (3R7m7), who sat together, each presented a picture with a collage effect, which included a cot, a “dummy”, a potty, “poo”, and a nappy, in addition to feeding equipment. Both also drew feeding bottles and solid foods in their pictures. Alfie (3R6m8) clearly had a younger sibling about whom he spoke during his ‘tell session, which may explain his knowledge of baby equipment. It is unclear whether Samuel (3R7m7) also had some experience of babies in the home or was influenced by Alfie’s (3R6m8) ideas. George (3R8m8) and Benjamin (3R9m7), who shared a table with Alfie (3R6m8) and Samuel (3R7m7), both drew large feeding bowls, which filled most of their page. Both feeding bowls are decorated with pictures of birds and a toy train. Benjamin’s (3R9m7) picture links with Alfie’s (3R6m8) and Samuel’s (3R7m7) in that it includes a cot, food bowl or possibly potty, and toys (LEGO™ and a Superman model). In some respects George’s (3R8m8) is less complex, but does include musical notes and, possibly, a piano keyboard. This element was particularly striking for several reasons. It perhaps requires a significant level of sophistication to decide to include music in a scene and then visually represent it in accurate musical symbols. In addition, this idea did not seem to have been picked up by the other boys despite a large amount of idea sharing. Indeed the only other child (Dylan 3U3m8) who presented music in his picture did so in a similar way, and although he was of the same age he was in a different school.

7 Watching and Learning

Children’s awareness of infant feeding at various ages and in different schools was extremely varied. Their knowledge and understanding seemed to have been acquired from several identifiable sources, such as home, school and the media. Several children had recollections which could not be placed, which are described as ‘out and about’. This group comprises five categories;

- Recalling infant feeding experiences
- “My baby sister had that”; learning about infant feeding at home
- Out and about; seeing infant feeding elsewhere
- “On the TV”; seeing infant feeding in the media
- “Right there in the classroom”; school based learning

1 Recalling infant feeding experiences

Children’s recollections of seeing babies being fed were a valuable aspect of the data which could not be reliably gleaned from the children’s artwork. Obtaining this information during the ‘tell’ sessions also proved problematic. The aim of the sessions was to offer children the opportunity to talk about their picture rather than to interview them. However, few children directly related their artwork to past experiences. In some cases the children appeared willing to talk about their artwork, and in these cases it was possible to ask

whether they had seen babies being fed as a natural part of the conversation. Phrasing the question in a way which was clear proved to be difficult. It was also important not to put children 'on the spot' or allow them to feel that they had 'failed' in any way. In cases where it seemed very unlikely that the child could answer the question easily, or where the discussion was very stilted, it was sometimes preferable not to press the child. In some instances the child "closed" the 'tell session' themselves before the question was asked, and their wishes were obviously respected. As a result it was not possible to collect a complete set of data around this issue. This category includes the codes 'feeding memory', 'recollection of seeing baby breastfed', 'memory of seeing babies fed', 'not sure about seeing babies fed', 'has seen babies fed', 'cannot recall details of seeing babies fed' and 'vague memory'. In addition to children's responses to a direct question the category also includes children who spontaneously indicated a clear memory of seeing a baby fed such as 'spontaneous memory of infant feeding' and 'recalls feeding without prompting'.

Fifteen of the children had a recollection of having seen a baby being fed. Amongst the younger children it was very difficult to place the question into the discussion, and only four Year 1 children were asked. Several of their responses were positive, but they were unable to elucidate the experience further. Only Emily (1U7f6) gave a clear account of having seen "mummy" feed a baby "on the sofa", which was the scenario reflected in her artwork.

A larger proportion of children were asked about their recollections in Year 3. In 3U, it was especially difficult to conduct the 'tell' sessions with children due to various distractions. The observation notes record various incidents, such as a large bee in the classroom, several interruptions from office staff and excitement due to an imminent important sporting event. The girls appeared to be more able to focus on the activity and they clearly found these interruptions less distracting than the boys did. This may account for the disparity in data collected from 'tell' session, with more girls than boys providing recollections of infant feeding. There was considerable hesitancy amongst some children when discussing their work.

It proved easier to conduct 'tell' sessions with Year 6 children, both due to their maturity and high levels of assistance from the teaching staff in the classrooms. Nearly all the children volunteered, or could be asked about, their memories of seeing babies fed. All the children in 6R recalled this. In 6U only two children, Freya (6U4f11) and Poppy (6U8f11), said that they had seen a baby being fed, although neither elaborated further. Four additional children thought they had seen infant feeding, although placed that in the context of having learned about the subject in school. Several were uncertain about whether they had observed infant feeding. Interestingly, a larger proportion of older children than younger ones stated that they were not sure if they had seen a baby being fed. It is perhaps surprising that the older children appeared more doubtful than the younger ones in this respect. Possibly this is because I was more reluctant to ask younger or more timid children questions if I felt that they might feel awkward about giving a negative response. Alternatively it may be that it was difficult for children to distinguish between personal experience and information learned in school, and were

therefore confused by the question. This is likely to have become more of an issue as the children moved through their school career.

2 "My baby sister had that"; learning about infant feeding at home

This category describes, as much as possible considering the above constraints, children's recollections of observing a baby being fed in a domestic or "everyday" setting. It comprises codes such as "we had that in the cupboard at home", "at home mum feeds her", "my baby sister had that".

Several children had witnessed infant feeding in the home. Often these experiences were spontaneously described, with little prompting from the researcher. They did not appear to recall individual, single experiences but were more inclined to discuss common processes, like making up a formula milk feed, or talk about particular feeding products. These children were from several different school classes, spread across the age range. The experiences that they recounted were varied.

Emily (1U7f6) was the only child who made a clear statement about seeing breastfeeding in the home. Despite being one of the younger children involved in the research she gave a very clear account of seeing "Mummy" breastfeeding "on the sofa". The assumption is that Emily (1U7f6) was describing the scene she drew in which "the baby's having milk from the mummy's boobie on the sofa". Not only did she describe this during the 'tell session' but also annotated her drawing with a long sentence at the top of the page which described the picture. The domestic setting of Emily's (1U7f6) artwork is enhanced by the sofa, which adds to the unique nature of the picture. Although the mother is not actively feeding the baby in the picture, this may well be due to technical artistic problems caused by Emily's (1U7f6) relative youth. Using a combination of artwork and text Emily (1U7f6) manages to convey a sense of having learned about breastfeeding at home.

Hannah (3U8f8) illustrated a scene in which a baby was going to be formula milk fed by a midwife. At her 'tell session' Hannah (3U8f8) commented that "at home mum feeds her (the baby)". This was a little ambiguous, but gave sufficient information to suggest that Hannah (3U8f8) had seen infant feeding in the home. It is possible that she was referring to breastfeeding, but of course she may also have meant other forms of feeding.

Ethan (3U1m8) drew a deceptively simple illustration of a feeding bottle. On closer inspection it is possible to see the detail which he incorporated into the picture. He has marked fluid measurements in 5ml intervals along the side of the bottle, and although he has actually placed them in reverse order this does not detract from the overall effect. The colour of the bottle and milk are also slighty unusual, but on investigation in baby equipment shops a range of very similar tinted bottles were found, which are almost identical to the one in Ethan's (3U1m8) picture. When discussing his work Ethan stated that the bottle contained "Cow and Gate", a well known brand of formula milk, and added

“we had that in our cupboard at home”. This suggests that Ethan (3U1m8) had, at some point in the past, seen formula milk feeding at home, which had made sufficient impact on him that he remembered a large amount of detail. It may, or may not, be useful to speculate on why Ethan (3U1m8) focussed on drawing a bottle and did not include any people or other objects in his artwork.

Amy (6R2f10) also gave a clear account of seeing formula milk feeding. She had seen her older sister making bottles of formula milk and was able to explain that “it’s in a powder and you add hot water”. Again, whilst it would be unwise to draw any conclusions from the composition of the picture it is noticeable that, as with Ethan’s (3U1m8) picture, the bottle forms the major part of the picture. The baby and the bottle are disproportionate to an extent which is not seen in the other pictures. This is far more noticeable here than with other illustrations of a baby and a bottle, where the baby’s head is generally in proportion.

Alfie (3R6m8) demonstrated that he had seen solid baby foods at home. He drew a jar of HiPP commercial baby food and explained that “my baby sister had that”. His drawing, when compared to HiPP products in shops was extremely accurate. Bearing this in mind, there is some incongruity in his lack of knowledge about the content of the jar. This has links with the category relating to “Mashed up” (see 8.4.7)

Only five out of 56 children gave a clear indication that they had seen infant feeding in the home. This differed from the information recorded in the observation notes from discussions with teachers, who identified that many more children than this had one or more younger siblings. It also contrasted noticeably with the number of children who presented pictures containing high levels of information about various aspects of infant feeding, which in many cases appear to be based on careful observation.

3 Out and about; seeing infant feeding in other locations

This category emerged from codes which identified places other than home or school where children had seen infant feeding. It includes ‘in hospital’ and various references to ‘not sure when or where’ and ‘seen feeding but no further information’.

Only Hannah (3U8f8) implies that she had seen a baby fed somewhere other than home or school, in this case in a hospital. Her drawing of a midwife, a baby in a cot and a very large “office style” illustrates her impression of how the baby was fed in hospital, which appeared to differ to how the baby was fed at home.

Lucy (3U) indicated that she had seen breastfeeding, but did not specify where it had been encountered. Her picture of a breastfeeding mother offers no clues either. Although her picture is less graphic than some others, it does succeed in presenting a very accurate portrayal of discrete breastfeeding.

Ella (3R3f8) and Millie (3U15f8) had both observed a baby being fed with “milk” but did

not offer any further details about when or where this may have been. Ella (3R3f8) also indicated that she had seen a baby eating marshmallows, although gives no further details of the experience (see 8.4.6).

No children named any other specific locations, such as a café, play area or someone else's home, where they might have witnessed infant feeding.

4 "On the TV"; seeing infant feeding in the media

Only Matthew (6R4m10) mentioned that he had, perhaps, seen infant feeding on the television or in the media. No children mentioned seeing breastfeeding or formula milk feeding in books, pamphlets or on posters.

5 "Right there in the classroom"; school based learning

This category explored children's recollections around infant feeding education in school. It includes codes such as "right in the classroom", "we did about it", "we learnt about it this year", "right when we were first at school". This category is comprised of contributions from a small number of children, but some of their comments and observations in this area of the research were very enlightening. As might be expected the children in the two schools reported different teaching on the subject. Without robust guidelines regarding teaching of the subject it is perhaps inevitable that children's experiences will not be uniform between different schools. All of the children who commented about school experiences of infant feeding were in Year 6. The educational input that the two year 6 classes had received had clearly been very different.

In School R the two participating girls both appeared to have a clear memory of a school based infant feeding experience. They recalled a woman visiting the class and breastfeeding her baby in the classroom when they were much younger. It was difficult to ascertain whether this was a planned teaching event, or a chance occurrence. The concept of introducing children to breastfeeding in this way has been gaining popularity during recent years, so it is entirely possible that this was a planned exercise. The teaching assistant who was present during the research exercise had worked in the school for many years, and could recall a short period when this had been a Year R or Year 1 teaching activity.

The two girls, and especially Amy (6R2f10) had very strong opinions about seeing a woman breastfeeding in the classroom. Even though the research was conducted at least 4 or 5 years after the event Amy (6R2f10) was clearly still concerned about it. Every statement that she made re-enforced this, and phrases such as "she fed her baby, you know, with her milk, right in the classroom" were infused with a tone that suggested that she had been affronted by the experience. Daisy (6R3f10) also remembered the session, but appeared to be more relaxed about it, although she was slightly hesitant when describing that "mmmm she was just there, ummmm just with the baby, you know,

feeding it". The experience was clearly memorable for both girls, although whether this was a positive attribute is debatable.

The boys in the class did not recount the same experience as the girls. The teaching assistant was a valuable resource because she was able to confirm that all of the boys had been present at the school since the age of 4 years, and therefore should have all had the same experience as the two girls. It is possible that the activity was limited to girls only, which was unlikely, according to the classroom assistant. Alternatively the boys may have forgotten the exact details of the event or preferred not to share it with the researcher. However, both Alexander (6R1m10) and Matthew (6R4m10) recalled seeing babies fed "both ways", presumably with both breast and bottle, although they did not offer any further information about where or when.

The children in 1R or 3R did not report having a similar teaching experience, which was consistent with the recollection or the teaching assistant, who did not remember it being repeated in recent academic years. It would be very useful to know who had organised the activity, and how it was presented to the children, and indeed why it subsequently ceased, but it was not possible to follow this up given the time which had elapsed.

In class 6U children reported very different infant feeding education experiences. Three children referred to teaching that they had received earlier in the school year. The three children, two boys and one girl, all drew very different illustrations. Tyler (6U2m11) indicated in his 'tell' session that he was not sure if he had seen infant feeding but that "we did about it this year". He drew two separate pictures. To the centre left of his page he showed a baby being fed formula milk, with a shelf of milk and solid foods in the background. To the right of the page he drew a mother breastfeeding a baby. Tyler's (6U2m11) accompanying text was changed twice, and this perhaps gives an insight into his thought process during the exercise. Having initially written that "before the baby goes on to drinking from a bottle it does breastfeeding from its mum", Tyler (6U2m11) erased this and eventually wrote "another way to feed a baby is by breastfeeding from its mum". It is difficult to interpret the influences that might have generated this change of wording, but they are perhaps particularly noteworthy in view of the recent infant feeding education received by the class.

Harrison (6U10m11) drew a very clear, annotated illustration showing a mother breastfeeding a baby. Not only did Harrison (6U10m11) produce a very precise and detailed piece of art, he also included some interesting phrases in his annotation, being one of only seven children to clearly write the word "breast", and also noting that "the baby is sucking milk". His recollection of seeing babies being fed appeared to come from teaching in school, which he explained by saying "we did about it". Amongst the children who recalled learning about infant feeding Harrison (6U10m11) was the only child who drew exclusive breastfeeding rather than combining different feeding methods.

Phoebe's (6U11f10) picture was unusual in that it demonstrated a baby's progression through different feeding methods in the first year. She indicated that babies initially breastfeed, and then change to formula milk feeding, before moving to mashed foods

and finally to adult foods. The idea that babies move from breastfeeding to formula milk feeding as they mature was also suggested initially by Tyler (6U2m11). Phoebe (6U11f10) said that she had seen a baby being fed, and when she was asked further details said “mmm, well, we did it at the start of this year, all that stuff”. It is unclear whether the experience she initially referred to was in fact from the teaching session earlier in the year.

The children did not pass any particular comment about the teaching they had received except to acknowledge that it had occurred. None of the children in 6U gave the impression that they had seen ‘real life’ infant feeding in the classroom, and this was not mentioned by the class teacher. The rest of the group, who had also (apart for a couple of exceptions) been present for the teaching, did not mention it at all. The class teacher was enthusiastic about health and nutrition, which was probably partly why she agreed to support the research. The teaching had occurred about 9 months prior to the research exercise as part of a programme which included sex education, and alcohol/drugs/smoking information. It was unfortunately not possible to view the resources that she had used during the teaching[85].

8 Words and pictures

A number of codes related to the qualitative nature of the pictures, text or words used by the participating children. It became clear that some information was present in the children’s use of pictures and language, and that significance and meanings might be extracted through careful analysis. Whilst a number of categories emerged during this process it was essential to recognise that the data always had to support the assertions made. This was an area in which there was a particularly high risk that overly imaginative analysis might result in findings which were unfounded. This group consisted of nine categories;

- Drawing mum
- Picturing babies
- Adding words to pictures
- “That’s my name”; personalising picture characters
- “Happy now”; drawing smiles
- “I did tears”; picturing crying babies
- “Yuck”; making a statement
- Similar; sharing ideas
- Presenting ideas in a unique way

1 Drawing mum

Most of the thirty eight children who drew ‘mum’ in their artwork illustrated her very conventionally from ‘head to toe’ or from the waist upwards. However, during the data analysis it became apparent that a number of representations of mum appeared without

a head or facial features. This category includes codes ‘only parts of mum illustrated’, ‘no facial features’ and ‘no head’.

Seven children drew only part of the mother in their picture. Max (6U7m11) and Ryan (6R5m11) both illustrated the mother’s hands holding a feeding bottle. These two pictures are very complicated in composition. Ryan (6R5m11) in particular succeeded in drawing a picture quite unlike those produced by the other children in his class. The other 6 children all illustrated breastfeeding. Alexander (6R1m10), Matthew (6R4m10) and Henry (6U13m11) represented breastfeeding by showing just the mother’s breast and the baby’s face. Poppy (6U8f11) and Liam (6U3m10) drew very detailed pictures of a breastfeeding mother but showed her only from the neck downwards. The headless mothers were particularly striking, because the artwork was clear and competent, and the omission of the heads therefore appeared to be deliberate.

It is uncertain why these children did not picture the whole mother in their pictures. It is perhaps noteworthy that a high proportion of the children contributing to this category were illustrating breastfeeding. This ‘depersonalisation’ of the breastfeeding mother is contrary to the intimacy that is usually implied in breastfeeding.

2 Picturing babies

Although the story that the children were shown related to a crying baby not all children included a baby in their art. This category includes codes such as ‘baby’, ‘baby present’ and ‘no baby’. Most children included a baby in their artwork. This ranged from quite rudimentary representations (1R2m6) to very detailed illustrations (Katie 3U12f8). Six children, from the 56 participants, omitted a baby altogether, and these children were all boys. Charlie (1U4m5) did not participate in the activity at all and produced no artwork. Five other boys drew complex or detailed illustrations but did not include a baby. Alfie (3R6m8), Samuel (3R7m7), George (3R8m8) and Benjamin (3R9m7) and Ethan (3U1m8) all produced art which focussed on objects and did not include any people. The observation notes show that these boys all sat close to one another, on two tables, one in front of another. It is possible that this pattern may be partly due to children sharing ideas in 3R. It may also be the case that some of these children were not confident in their ability to draw people. However, the boys in 3R, in particular, produced intricate pictures which included quite complex subjects, such as bowl decoration.

3 Adding words to pictures

A high proportion of children annotated their drawings; 37 of the 56 participating children added some text to their artwork. This was in the form of a title, a baby’s name, a label on a jar of baby food or a longer length of explanatory text. This category consists of codes such as ‘text’, ‘title’, ‘labelling’, ‘labels’ and ‘baby named’.

Some children used one form of text in their artwork, but others combined two forms,

such as titles and labels, or speech bubbles and labels. As might be expected the use of text was far more common amongst the Year 3 and Year 6 children, whose literacy levels were generally higher than those of children in Year 1. Apart from this observation there were no discernable patterns in the use of text between different classes, ages or genders.

The majority of children who added text did so in the form of labelling. This was prevalent amongst the Year 3 and Year 6 children in both schools. There appeared to be no obvious differences, in terms of artwork content and style, between those children who added labels and those who did not. The only notable difference is perhaps in Alexander (6R1m10) and Matthew's (6R4m10) artwork. Both boys initially drew pictures of a baby and feeding bottle, in which various features were labelled such as "baiby", "baby bottle", "6 hairs", "warm milk". When each boy subsequently illustrated breastfeeding they did not label any people or objects in their pictures. They had an equal amount of time and resources for both pictures, so this raises questions about their different approaches to the two illustrations.

Nine children provided titles or explanatory text for their artwork. Two of the Year 1 children, Harry (1U3m5) and Emily (1U7f6), annotated their work with a long and complex sentence, which provided more explanatory text than many of the older children. Only one other child in Year 1 (Daniel, 1U5m6) added clear text, which was in the form of a simple name. Oscar (1U1m6) added some letters to his artwork, but these are not legible and he did not elaborate on what he had written. In addition to being the only Year 1 children to add lengthy text to their work, Harry and Emily (1U7f6) were also the only children in Year 1 to illustrate breastfeeding. It is possible that the connection is purely an interesting coincidence. Alternatively Harry (1U3m5) and Emily (1U7f6) may have felt the need to annotate their work because of the technical issues involved in illustrating breastfeeding. It is also possible that other factors may have influenced this outcome, and these possibilities will be considered in the Discussion chapter.

Several children added speech bubbles to indicate characters who were speaking. Evie (3U7f8), Isabella (3U14f8) and Millie (3U15f8) all used this technique to denote siblings speaking. Adam (6U1m11) illustrated a midwife speaking to a mother using a speech bubble, asking "are you happy with your baby". No child drew the mother, father or baby with speech bubbles. It is notable that many of the 'extras' are pictured speaking whilst none of the central characters are, but the small numbers of children involved make it difficult to comment on this in any depth. Further consideration of this observation may be appropriate in terms of research methodology, because in other 'draw and write' research speech bubbles are frequently used as an element in the research design.

4 "That's my name"; personalising picture characters

Five children named the baby and/or mother in their picture with a specific name, which often seemed to be their own or the name of a baby in their own family. All names in the artwork have been obscured to ensure anonymity. Daniel (1U5m6), Mia (3U6f8), Katie

(3U12f8), Amy (6R2f10) and Ryan (6R5m11), all 'personalised' characters in their artwork. Of these only Mia (3U6f8) illustrated a breastfeeding mother, and she was also the only child to specifically name the mother with her own name. It is worth noting here that Poppy (6U8f11) may also have identified closely with the breastfeeding scene that she illustrated. Although she did not name the mother or baby she entitled her artwork "Me and my mum". Whether she was speaking from the perspective of the baby, or whether she was identifying herself as the baby is uncertain. Equally, Emily (1U7f6) wrote "I drinks", and referred to the baby as "I" in the text at the top of her picture. Again it is uncertain if she was drawing the picture from the baby's perspective or was in some way inserting herself into the scene.

Exploring the use of text by the children was enlightening both in terms of exploring their awareness of infant feeding and gaining an appreciation of the scope of the 'draw and write' research technique.

5 "Happy now"; drawing smiles

When the children's artwork was analysed a striking number of codes emerged which related to 'smiling', 'gaining comfort from food', 'changing emotions' and 'mixed emotions'. This category includes all pictures where at least one character was smiling. In some cases it was difficult to judge what was, and what was not, a smile. In most cases it was felt that any form of upturned mouth indicated a smile. In the case of adults a semi-circular mouth shape appeared to be a smile even if the upper mouth was flat, whilst with babies this was less clear because often the mouth was open or feeding. As a result it must be remembered that this category relies on some value judgements.

At least thirty four of the pictures included at least one smiling figure, and frequently all of the characters were smiling. This means that this category is one of the most densely populated. The children who drew smiling figures are spread throughout the participating school classes, and there appears to be no particular pattern to this distribution. Many of those who are not included in this category are omitted simply because the faces are too small to be seen clearly, or because no faces have been included in the picture.

It is difficult to assess whether children have added smiles to their figures because they feel that the character was happy, or whether it is simply an affectation of many children's artistic style. Possibly the few exceptions offer additional information. Megan (3U11f8) drew a baby who is clearly wailing. Oscar (1U1m6) shows a smiling mother and a baby who appears to be crying and has its mouth open. However, Callum (3U10m8) and Imogen (3U13f8) pictured babies who are perhaps not crying but have their mouths open to be fed. Luke (3U9m8) and Freya (6U4f11) showed mothers and babies who do not appear to be smiling, but the mouths are unusual in style and so the lack of smile may simply be a factor of their artistic style. Two pictures contain facial expressions which might be interpreted as meaningful because of the contrast between different characters. A broadly smiling midwife appears in Hannah's (3U8f8) picture, whilst the baby in a nearby cot appears to have a completely flat mouth. In Isabella's (3U14f8)

drawing the baby, mother, father and baby brother are all smiling, whilst the sisters (siblings or aunts) have open mouths and appear to be talking or shouting. This is supported by the description that Isabella (3U14f8) gave of the scene when she discussed her artwork with me.

In many cases it is impossible to determine whether children may have drawn smiles as a normal feature of their artistic style or because they were genuinely wishing to portray characters who were happy. However, it appears that, where desired, some children deliberately drew some figures who were smiling and some who were not. These perhaps offer the greatest insight into the emotions that the children wished the characters to display.

6 “I did tears”; picturing crying babies

The introductory picture boards set the scene for the data collection exercise. The final picture was of a crying baby. This clearly had an impact on some of the children, who went on to draw or describe babies who were crying or distressed. Oscar (1U1m6) and Sophie (1U10f6) pictured babies who were still crying. In neither picture was any form of infant feeding shown, so whether they were deliberately picturing the baby before being fed, or simply did not know how to illustrate feeding is unknown. William (1U8m6) explained that the baby in his picture had stopped crying and was not hungry anymore, although he did not elaborate on whether the baby had been fed. Lucy (3U) and Max (6U7m11) drew babies who had been crying but explained that they had stopped because they had been fed. The baby in Megan’s (3U11f8) picture is still crying but is about to be fed. In Isabella’s (3U14f8) scene there is no sign that the baby is crying but she explains that some of the family members want to “stop the baby crying”.

It is reassuring that a number of children were able to utilise the information presented in the picture boards and continue the story themselves. It also appears that some of these participants demonstrated that the process of feeding the baby changed it from a crying baby to one which was no longer crying.

7 “Yuck”; making a statement

Very few value judgements were expressed by the children. These were considered to be statements which were based on the child’s own reaction or feelings to a particular situation.

Amy (6R2f10) made several statements regarding her experience of observing breastfeeding in the classroom, including “yes it was a bit strange, seeing some baby and someone else’s things. It doesn’t feel normal someone doing that right in front of you does it?” , and “I don’t know, it’s just not nice when you don’t know someone, not normal”.

Isabella (3U14f8) added a speech bubble to the sibling in her picture saying "yuck", and echoed this sentiment herself during the 'tell' session when referring to baby food. No other children stated this in a direct way, but throughout the observations and discussions it was possible to detect, from their tone and facial expressions, a sense that the children felt that solid baby foods were different and not entirely pleasant.

8 Similar; sharing ideas

It gradually became apparent that many of the children were sharing ideas and producing work with similar characteristics. Because a strenuous effort was made to analyse each child's contribution individually in the first instance, these similarities only became clear during the constant comparison stage of the analysis. In addition, field notes made during the research activity in each classroom offered some insights into the conversations which children were having. However, my observations did not always reflect the similarities, or differences, seen between children's work. Codes 'similar' and 'similar to others' were included in this category.

Several observations were noted in the patterns of similarity in the children's work. The children whose work was similar appeared to be mostly in Year 3, although, as will be discussed, some children in other years produced work which was nearly included in this category but removed for various reasons. The work which was strikingly similar seemed to occur between pairs of children. As might be expected, all of the children whose work was similar sat next to one another. In School R the children were not working in their usual classroom and were allowed to choose where they wished to sit. In School U the children all sat in their usual class places. It is therefore likely that all the children sat with their friends or with children whom they were used to working with. It was noticeable that children who produced similar work often had sequential identifying categories, such as 3R**6**m8 and 3R**7**m8. This means that they chose to approach me for 'tell' sessions in succession, gives the distinct impression that they may have completed their work at around the same time.

It is, of course, impossible to 'prove' how much children influenced each other's work, and it must be remembered that this particular category is therefore relatively interpretive. In some cases almost all of the illustration was very similar. The link appears to be even stronger when unusual aspects appear in the pictures. For instance this can be seen clearly in Samuel (3R7m7) and Benjamin's (3R9m7) work, where the whole composition and a number of details, such as the decoration on the bowls, appear to be very similar to one another and very different to all the other work. Sometimes the connection appeared more tenuous, but other factors led them to be connected. For example, Lucy (3U4f8), Charlotte (3U5f8) and Mia (3U6f8) drew pictures which were dissimilar in some respects, but the positioning of the mother and baby, both in relation to each other and on the page, are extremely similar, and it is only the details which vary. Indeed, Lucy's (3U4f8) picture supports her recollection of seeing breastfeeding, because her illustration reflects 'real' breastfeeding (in terms of pose, baby's positioning and lack of maternal nakedness). However, Charlotte (3U5f8) and Mia's (3U6f8) do not

indicate a recollection of seeing breastfeeding, and their pictures may be perceived as being slightly less ‘realistic’ than Lucy’s (3U4f8). Likewise, Katie (3U12f8) and Imogen (3U13f8) drew similar pictures, where details such as the babygrow, the mother’s clothing and the facial features shared many common aspects. There were some disparities in style and complexity which brought their similarity into question. During the ‘tell’ sessions it became clear that Katie (3U12f8) was recognised by Imogen (3U13f8) to be a very competent artist[86]. This gave the impression that Imogen (3U13f8) had, to some extent, possibly been following Katie’s (3U12f8) artistic lead.

Where a pair of children worked together the work which they produced was similar, but had some notable differences, which often seemed to be a result of personal experience. For instance, Alfie (3R6m8) and Samuel (3R7m7) produced very similar collages of baby equipment, but Alfie (3R6m8) included a jar of HiPP food, which was a product which he had seen used at home. The most striking difference was between Isabella (3U14f8) and Millie (3U15f8), who drew pictures which were very similar to each other in composition, but quite unique from all the other children involved in the research. The mother and baby in each are in profile, in an almost identical pose, and both contain additional characters including pets. However, whilst Isabella (3U14f8) shows a breastfeeding mother in her art, Millie (3U15f8) has shown a formula milk fed baby. Of course it is impossible to say whether one child contributed more to this composition than the other, or whether it was collaborative, but the difference in feeding method amidst so many other similarities is striking.

It was more common for children to produce similar pictures of formula milk feeding or solids feeding, than of breastfeeding. Only Matthew (6R4m10) and Alexander (6R1m10) drew similar breastfeeding pictures, and these are not particularly detailed.

There were some instances where there was a temptation to view work as similar, but where this idea was discounted following further investigation. Erin (6U5f11) and Molly (6U9f11) drew pictures which appeared very similar at first, but where it proved difficult to identify those similarities. The most notable example of similarity was in 3R where three girls (Chloe 3R1f8, Ella 3R3f8, Amelia 3R4f8) were heard, according to the observation notes, to discuss “a baby having marshmallows, I saw it”. They all subsequently included marshmallows in their pictures, which was noticeable because marshmallows are not usually used as baby food. Whilst this similarity was significant, and the observational notes show that it was a shared idea, there are also overwhelming differences in most other aspects of the children’s work.

Analysing the verbal contributions of children who had produced similar pictures offered a different perspective. In all cases verbal contributions were quite dissimilar, despite being based around pictures which shared a number of common features. Curiously, it became clear that children often chose to talk about the aspects of their artwork which were unique to their own picture. George (3R8m8) and Benjamin (3R9m7) drew remarkably similar pictures, but when discussing his artwork George (3R8m8) started by saying that “babies like music”, which reflected the musical notes which he had drawn, but which Benjamin (3R9m7) had not. He was less clear about the food he had drawn,

and indeed his illustration of this aspect was less clear than Benjamin's (3R9m7). Benjamin (3R9m7) spoke about the food in some detail, and then mentioned the Superman and other toys, and a bottle, which were elements that George (3R8m8) had not included. Katie (3U12f8) and Imogen (3U13f8) also appeared to specifically discuss parts of their work which the other did not discuss. Katie (3U12f8) spoke about the bottle of milk, which only she had drawn. Imogen (3U13f8) concentrated far more on the food being mashed, which she had also highlighted in her picture, and explained at some length that it was mashed because "babies don't have teeth". Possibly this observation is insignificant, but it may perhaps indicate that the children had shared a basic design but added aspects which were particularly meaningful to them, and which they therefore were keen to speak about.

9 Presenting ideas in a 'unique' way

Identifying contributions which were 'unique' was also problematic. It could be argued that, by definition, the art which was not 'similar' was 'unique'. However, the pictures which were identified as 'unique' all had significant elements which made them entirely different from those produced by other children in the research. This was a very subjective aspect of the analysis, but both the researcher and independent reviewer reached agreement regarding the pictures which were included in this category.

Some contributions were clearly different from others, and closer examination of a selection of 'unique' work exemplifies the differences. Charlie's (1U4m5) contribution was included due to his unique lack of participation. Emily's (1U7f6) picture was immediately unusual because of her portrayal of breastfeeding and a sofa, and the depth and clarity of her written description. William's (1U8m6) art was different from that of his peers due to its compositional complexity and maturity. Ethan (3U1m8) offered a very simple but striking picture, whilst by contrast Evie (3U7f8) showed a complicated picture, which included stored bottles of milk in a fridge, a cake and a domestic scene quite unlike those produced by other children in her year. Hannah (3U8f8) drew a hospital scene, which included a midwife rather than a mother, which was visually striking. Phoebe (6U11f10) perhaps presents the most unique contribution, in the form of a 'timeline' of baby feeding methods during the first year.

In some cases children provided a unique insight in their verbal conributions which was not reflected in their artwork. Amy (6R2f10) offered a very personal insight into her experience of observing breastfeeding. Amelia (3R4f8) added a table to her artwork, which was not unique in itself, but her assertion that "you need a table to eat dinner" was most unusual.

It is difficult to ascertain why some children were inspired to draw pictures or offer comments which were so different from those of their peers. However, their contributions frequently appeared to be very personal and in a number of cases seemed to reflect their life experience. As a result these 'unique' pieces of work perhaps offer particularly valuable insights.

9 Conclusion

The primary school children who participated in this research appeared to have a wide ranging awareness and diverse perceptions of infant feeding. Their awareness of the subject related not only to breastfeeding and formula milk feeding, but also included solid foods. In addition, the method used in this research enabled lack of awareness of infant feeding amongst some children to be identified. A number of categories relating to more nebulous aspects of infant feeding and baby care emerged from the data, many of which have not been recognised by previous research.

The diverse and complex assortment of categories which were identified each provided insights into children's perceptions of infant feeding. However, it was difficult, when examining categories in isolation, to identify how they related to one another. As the categories were generated from the data it became clear that children's perceptions were subject to a range of influences, and that there were many links between categories. In Chapter 10 these links will be identified, enabling a more holistic discussion of the findings and relating this to other research.

Limitations of the research and reflections on the 'draw, write and tell' method

"However beautiful the strategy you should occasionally look at the results"

(Winston Churchill, 1874-1965)

1 Introduction

This research enabled the generation of many individual pieces of art, which are rich in data and are accompanied by thought-provoking written and verbal comments. These are all meaningful in their own right, and any limitations present in the research are the result of the research design, conduct and analysis rather than the quality of the contributions made by the children. Whilst some limitations have been noted already with reference to particular aspects of the research, there are some more general issues which are discussed below. Because an important element of this research was the development of 'draw, write and tell' a reflection on the use of this method was essential, and points relating to it are considered in a separate sub-chapter (see 9.2).

1 Representativeness

During the planning stage a review of existing literature led to the decision to undertake the research in schools from two areas which contrasted both in terms of geography and affluence. In reality it proved extremely difficult to recruit schools to the study, and as such it was not possible to choose 'ideal' schools. The problem of engaging schools in research has been noted by Mackie (1998) and by Russell et al. (2004), and appears to be an ongoing problem, perhaps one especially experienced by researchers who wish to research a subject which is frequently perceived as sensitive. It appears that this problem is less frequently cited by researchers working in other fields such as diet (Caraher et al., 2004) or smoking (Woods, 2005). Although gaining school co-operation proved difficult, careful planning ensured that the participating schools were in contrasting geographical areas with populations who were likely to have different levels of affluence. However, very little was known about the actual composition of the school populations, except for the information gained from the Ofsted reports, and no data were gathered relating to individual families. In addition it is acknowledged that there were many other differences between the schools, in terms of their size, teaching arrangements and the specialism of staff (see 7.2). As such, whilst it was possible to explore the differences in the responses of children between age groups and schools it is acknowledged that a number of unknown factors could have influenced children's responses.

As anticipated during the planning stage of the research, the data collected from individual children varied considerably in quantity and acuity. The peripheral nature of

infant feeding to most children, and the brevity of the ‘draw, write and tell’ activity, justified the inclusion of a relatively large number of participants. Even so, the data collected should not be viewed as representative of particular sections of the whole population, but are instead a reflection of the ideas of groups of children, with occasional reference to individuals. Whilst some of the findings may relate to wider populations it must be remembered that some observations may have been identified from only a few children, or even from single individuals[87].

The research included children from Years 1, 3 and 6. This was a wider age range than were involved in the two previous studies of primary school children’s infant feeding awareness by Mackie (1995), and by Russell et al. (2004). Russell et al (2004) acknowledged that a single age group was not illustrative of the whole primary school age range and my data confirms this to be the case. However, this research did not include children from all of the primary school age groups, due to limitations on time, particularly within the schools themselves. It is impossible to know what the general infant feeding awareness of children might be during the intervening years. It is also important to remember that within school year groups there will be children who may be many months different in age, and whose maturity and ability may be unrelated to their age (Smith et al., 2003).

The research focussed on school populations which were identified as being “average” in terms of gender, ethnicity and special educational needs. It should therefore not be assumed that the findings will be applicable to populations where there is a preponderance of children from specific ethnic groups or with particular needs.

Finally, a number of parents did not return the permission form, and some declined permission. It was therefore not possible to explore the awareness of these children, who may have had different perspectives to offer in relation to the research subject (Esbensen et al.,1996).

2 Artistic development and drawing styles

There are some well documented difficulties in using children’s art in research, largely relating to the problem of separating meaningful elements in drawings from those generated by the artistic development of the child (Thomas, 1995). As discussed earlier (see 6.4.8) I took considerable care not to ‘over interpret’ children’s work. However, it may be that this resulted in important observations being omitted. For example, the data from this research contained many pictures of babies who appear to ‘float’ in the middle of the page. Our understanding of children’s artistic development suggests that this is due to a tendency amongst younger children to ‘unpack’ the components of a scene and present them in a horizontal line (Anning and Ring, 2004). This is a better explanation than suggesting that children think that babies really can float or fly, although there is perhaps a risk that they may believe this and this is then overlooked. Equally, whilst many children pictured the mother and baby side by side this was not seen as noteworthy because it would appear to usually be a reflection of drawing ability. Children

tend to draw the people or objects which they know to be in a scene, rather than drawing the scene as it would look (Willats, 1977).

In addition to this issue it was observed that the level of detail in the artwork frequently increased with age, but it was difficult to interpret how much of this was dependant on children's increased knowledge of the details, or on their increased competence in drawing them. It was also impossible to know, on the basis of one picture, what the drawing habits of individual children or groups were, so that background detail was usually omitted from the analysis. For example Mia (3U6f8) included a sun and rainbow in her art, which may have been interpreted as meaning that the baby was being fed outside. However, suns and rainbows are common features in children's art at this age (Coates & Coates, 2006), and although some commentators suggest that they may have symbolic meaning it is also possible that they are just fascinating phenomena that appeal to children (Malchiodi, 1998). Of course, it is difficult to quantify the subtle difference between ignoring the inference that the mother and baby are outside, because of the sun and rainbow, whilst accepting that the scene in a different picture is inside due to the presence of furniture (Emily, 1U7f6). This issue has not been addressed in-depth by researchers to date, although it is identified as a problem of 'draw and write' studies (Backett-Milburn & McKie, 1999). Indeed, many have avoided using data from artwork, possibly partly because of this issue (see 5.3.4).

3 Knowing but not showing

Where children chose to draw a particular feeding method it was difficult to identify whether the children's choice of illustration reflected their whole awareness of the subject. Russell et al. (2004) noted that even when 6 year olds in their study were known to have observed breastfeeding[88] they frequently drew bottle feeding. Because of the design of the study it is not known the extent to which this occurred in this study, although it is clear that some children, in particular Year 6, were aware of breastfeeding and did not choose to illustrate it. Not all children articulated whether they had seen infant feeding, or what method they had observed, so it is not known whether this may have affected illustrations of other feeding methods, or the extent to which children did not draw what they knew. However, I would suggest that this is only a problem if one is trying to quantify children's knowledge. In this context the picture content demonstrated the feeding methods and ideas which the children felt able and willing to illustrate, which is perhaps a more significant aspect than an assessment of their knowledge.

Research has demonstrated that 'priming' may occur, particularly in research areas about which adults have anxieties (Box & Landman, 1994). Infant feeding is a very emotive issue for some people, and it is possible that some parents, or teachers, may have intentionally or unintentionally influenced children's responses to the research. It is impossible to know whether the children were 'primed' prior to the research exercise. The research exercise itself attempted to avoid 'priming' this proved difficult to achieve, and the areas where this was a concern are discussed further in 9.1.5. and 9.1.6.

In a similar manner, it has also been suggested that children may produce data which they believe will be acceptable to adult researchers (Box & Landman, 1994; Gabhainn & Kelleher, 2002). Children exist in a school environment where they are asked questions by a teacher, who they perceive to be knowledgeable, and their role is to provide the 'right' answer (Backett-Milburn & McKie, 1998). It is difficult to translate this to a situation where the child is the 'expert' and there is no 'right' answer. Whilst this phenomenon was not overt in this research, it was clear that some children (see 8.7.5) appeared to have felt uncertain about whether it was acceptable to talk about or draw breasts.

4 Memory

Whilst some children could recall seeing a baby being fed, it could not be assumed that children would always remember this kind of event, or that it would influence their ideas about infant feeding. The vagueness of many children's responses resonated with current thinking about children's memory, especially in relation to common events (4.2.4). Many children may have witnessed infant feeding frequently throughout their lives, but it may not have registered in their minds. Fivush (1998) notes that specific recollections of recurring events are very difficult for children to identify, unless something very unusual happened on a particular occasion to make the event memorable. Older children are even more inclined towards this because they are acquiring an adult ability to filter out facts which the brain perceives as unnecessary (Smith et al., 2003). If children are not engaged in performing a task themselves but are passive onlookers, as is particularly the case with breastfeeding, their memory retention is significantly reduced (Grieg et al., 2007).

5 Choosing which characters to include in the picture

The children were introduced to the imaginary mother and baby on the picture boards. As a result some children may have automatically included a mother in their picture instead of other characters. However, in some cases alternative adults, or no adults, were chosen instead of a mother so the method did not seem to preclude alternatives to the mother in all cases. In addition there was no restriction to adding additional characters, such as a father, although neither was there any implied encouragement to do so. However, some children may have felt constrained by the research instructions. In addition, where the child did not name the adult in their picture it was assumed, based on the research instructions, that the child had drawn the mother. In most cases this assumption was supported by the illustration itself, for example where the mother was breastfeeding or was named by the child. However, in some cases this assumption may have been incorrect. On balance it was felt that it was appropriate to assume that unnamed female adults were likely to be the mother.

In addition, my presence in the room, and the children's understanding of my rôle as a midwife, may have prompted illustrations of midwives which may not otherwise have been created.

6 One baby, one feed, one choice

In a similar manner to the issue above it is also possible that the story scenario may have affected children's responses considerably. The research tool was, on reflection, quite unintentionally restrictive in this respect, and this may have curtailed children's ideas. The children were asked to demonstrate "how the baby might be fed". The younger children may have acted on this instruction in a far more literal manner…one baby…one feed….therefore one feeding method. In addition, for young children keeping track of more than one idea or possible answer to a problem is difficult (Smith et al., 2003). They react by solving the immediate problem in the way which first occurred to them based on their knowledge or experience (Fivush, 1998). By Year 6 children have developed sufficiently to manage complex ideas and consider multiple solutions to a problem (Eccles, 1999). In addition, I would suggest, based on personal experiences, that as children progress through their education they are frequently encouraged to approach tasks from different angles and 'go the extra mile'. The older children may not have felt as constrained by the research method, and were perhaps keen to demonstrate everything that they knew regardless of how this fitted in with the instructions. It may have been more appropriate to have asked children to draw a picture, or pictures, showing how the baby might be fed. However, it is questionable whether this may have been confusing for the children, especially in the younger age groups.

7 The influence of popular images

It has been suggested that children are significantly influenced by the images which they see around them (Thomas & Silk, 1990; Gabhainn & Kelleher, 2002), and that it is these which may therefore be reflected in their art. This may be an issue for researchers who wish to explore the thoughts and feelings specific to individual children. However, this research aimed to identify children's awareness of infant feeding, and worked from the premise that their views would be likely to reflect the social environment from which they came. As such, it was anticipated, and hoped, that the children's pictures *would* reflect their experiences and/or the dominant ideas and images of infant feeding in society. This view has been shared by other researchers investigating public health issues (Pridmore & Bendelow, 1995).

8 Conclusions

Whilst some limitations were associated with the 'draw, write and tell' method it would have been difficult to have resolved these within the confines of this research. Indeed, some of these are perhaps inherent in research which involves children or uses 'creative methods'. However, several problems identified with previous research were addressed here (Backett-Milburn and McKie, 1999), which assisted in minimising the limitations. Recognising the possible limitations outlined above and the effect which they may have had on the data, and on analysis, was essential to the following discussion of the

findings.

2 The right tool for the job – reflections on ‘draw, write and tell’

One of the central considerations when planning this study was to undertake research in a manner which honoured children’s rights and needs as research participants. It was essential that the research was ethical and minimised risk of harm, but also that it valued the children’s time and offered them an enjoyable, stimulating and thought provoking experience. The research method also needed to provide children of a range of ages, abilities and backgrounds with an opportunity to participate fully. Clearly providing data useable for analysis was essential to the process. Having completed the research it is possible to reflect on how the research method performed in practice, and identify its strengths and limitations.

1 Using ‘draw, write and tell’ with primary school children

In practice, ‘draw, write and tell’ appeared to be an appropriate method of research to use with primary school children, based on the recommendations in the literature (Pridmore & Bendelow, 1995, Backett-Milburn & McKie, 1999). In common with researchers who have used ‘draw and write’ with primary school children (Brading & Horstman, 1999, Russell et al., 2004), I observed that children not only agreed to participate, but appeared to be enthusiastic and keen to take part. This demonstrated clearly the benefits of the method in terms of enabling children to make a choice about participating without having to verbalise a refusal. It was of concern that the children’s time was used productively, and this was problematic in some respects because the exercise was not directly educational in relation to infant feeding. However, the activity involved a number of useful creative skills, and although there was a limited amount of learning around the subject area, the classroom teachers noted that it encouraged further discussion in the classroom after the event[89]. The wealth of usable data provided by the children demonstrated that the method enabled a wide range of participants to take part effectively. The use of drawing and telling appeared to encourage inclusion amongst children in all the classes, and it was noted by teaching staff that no children appeared confused by the activity. Indeed, only Charlie (1U4m5) did not participate, and according to teaching staff this was unlikely to have been because he did not have the understanding or ability to do so.

89. Expressing ideas using ‘draw, write and tell’ – ages and stages

It was uncertain prior to the fieldwork whether children would be able to use the ‘draw, write and tell’ activity to effectively illustrate their ideas. Whilst there was some ambiguity at times in the children’s art, this was often resolved by their written or verbal contributions. Even in Year 1 all children, except Charlie (1U4m5) produced data which contributed to the research, although lack of clarity suggested that it might have been difficult to draw conclusions had all the research been

conducted with this age group. Russell et al. (2004) also found that communication issues were a significant problem when undertaking research with six year olds. By Year 3 most children in the study drew and described their ideas clearly. They appeared able to easily understand the concept of research, and were more adept at providing text and verbally interpreting their artwork.

There had been some initial concerns that Year 6 children might have felt inhibited and ill at ease if asked to participate in a drawing activity (Eccles, 1999). However, this anxiety proved to be unfounded. It was explained to the Year 6 groups that the picture boards were simple because of the range of ages of children who were taking part, and they appeared to understand this. Indeed, the Year 6 groups contributed to the research very enthusiastically, and when observing the class it was possible to see that many clearly enjoyed the drawing element. These children provided a wealth of detailed data. Although formal 'stand alone' interviewing or focus groups might also have been effective with this age group it seems unlikely that these would have generated the wealth of 'incidental' details that emerged from the Year 6 artwork, and which provided depth and interest to the data. Bearing these points in mind it would be interesting to observe whether 'draw, write and tell' would be effective with young people in Year 7 and beyond. Much of the existing 'draw and write' research relating to health includes children up to the ages of 10 or 11 (see appendix 5), and there is little use of the method beyond this age. The use of visual methods has been expanding not only in research with children but with other age groups (Gauntlett, 2007). It is possible that 'draw and write', which has only been used very rarely with adults (Gauntlett, 2007) or 'draw, write and tell', should not be discounted as a possible research method for use with young people or even adults.

2 Using 'draw, write and tell' to explore a sensitive subject

It was acknowledged at the outset that the subject of infant feeding might be perceived by both adults and children as 'sensitive' because of its connection with breasts and, I would argue, also because of some individual's insecurities about their own infant feeding decisions. Care was taken to communicate clearly with the schools regarding ways to reduce the risk of causing harm to individual children or families[90]. In addition the research was designed to enable the children to illustrate their own ideas rather than introducing them to new ones. There was no indication during the research that children found the infant feeding 'draw, write and tell' activity particularly stressful or unsettling. However, it was clear that a very small number of children were anxious about aspects of breastfeeding. These children were selective in their illustrations of infant feeding, so that their drawings did not always reflect their awareness (see 8.5.1). This demonstrated, however, that this method was effective in enabling children to contribute within their own limits. In some ways this provides a response to concerns that 'draw and write' may lull children into a sense of security (Malchiodi, 1998) and cause them to reveal more information than they wish to. It appears that for some children at least this is not the case.

It had been anticipated that children might struggle to depict breastfeeding because of inhibition or embarrassment, but in a number of cases this did not prove to be the a problem, and some children drew very clear breastfeeding pictures. It was clear that 'draw, write and tell' presented benefits in relation to this 'sensitive' subject, because children appeared more comfortable with drawing and writing, rather than talking about, breastfeeding. This observation links to those of researchers studying other 'sensitive' subjects (Bendelow et al 1996). I would suggest that in creating a drawing children are able to present their ideas indirectly, whilst verbalising, particularly using 'sensitive' words, is very direct and requires a 'leap of faith', requiring children to be confident in both themselves and in the reception that they will receive from adults. In this research drawing appeared to be a very effective means of expressing ideas which children found either embarrassing or difficult to describe verbally.

3 Breadth or depth

There is little comment in the literature about the efficacy of 'draw and write' with different sample sizes (see 6.4.4) or subject areas. However, as the literature in appendix 5 demonstrates, there has been wide variations in both, which have perhaps been partly responsible for the differences in analysis techniques between different 'draw and write' studies. The 'draw, write and tell' method was developed here with the aim of collecting a broad overview of primary school children's awareness of infant feeding. It was recognised that this subject was likely to be quite peripheral to most children's lives, so that it was more appropriate to explore their awareness and perceptions rather than aim to identify their feelings or knowledge about the infant feeding[91]. Many research projects which have utilised 'draw and write' have related to subjects which have personally affected the child, such as preferences during medical treatment (Bradding & Horstman, 1999). In these studies large quantities of rich data may be collected through in-depth research with a small number of children because they may have detailed feelings, ideas or knowledge regarding those subjects. In this case it was anticipated that a large number of children might have only a passing interest or understanding of infant feeding, so that in-depth research with each child might result in only small amounts of data. As such it was decided to collect data from a large number of children in the hope that picking up a broad range of peripheral awareness would present a picture of the infant feeding perceptions of children, and perhaps also those of adult society. Indeed, this perhaps offers a response to the observation of Backett-Milburn and McKie (1999) that 'draw and write' frequently simply reflects the dominant discourses in society. In this research it was children's interpretations of the dominant discourses around infant feeding which were sought.

The data collected reflected, as anticipated, that many children had a vague understanding or limited experience of infant feeding, which demonstrated the advantages of recruiting a relatively large number of participants. Whist the child-led 'tell' aspect of the research was often brief and resulted in some areas of uncertainty in interpretation of the data, the combined data from large groups of children enabled a number of key areas of discussion to be identified.

4 Analysis of ‘draw, write and tell’ data

The analysis of ‘draw, write and tell’ data proved to be problematic, and it is clear why this aspect has been an issue for other researchers. This perhaps represents an unsolvable dichotomy between the recognition that it may be advantageous to enable children to participate in research using artistic ‘creative methods’, and the acknowledgement that research organised by, and disseminated to, adults is most often in written form. The ‘translation’ between these modes of expression is therefore often the responsibility of the researcher. Gaining children’s own interpretation presents a means of minimising this issue, but, as I found in this research, there is often still a need for the researcher to bridge the gap. Whilst this is challenging in terms of validity and authenticity, this is perhaps mitigated to some extent by clearly identified methodology, well structured research methods and transparency in analysis, and an acknowledgement of the limitations of the research.

5 Infant feeding research with children in schools

An aspect of this study which is discussed briefly in other research (Mackay, 1995; Dykes, 2003; Russell et al., 2004), and which also was significant here, was the experience of undertaking research in schools. Liaising with schools regarding research is generally recognised as a difficult and time consuming aspect in any study. I observed that limits on staff time and energy, the demands of the National Curriculum and a keen interest in protecting children can make schools a difficult environment in which to work, especially for those who are not education professionals. I would suggest that whilst health care settings have pressures similar to those listed above they also have a long standing ‘research culture’. This seems to be less the case in schools (Biesta, 2007), where evidence based practice currently has less prominence than it has in health care. Where research in schools occurs it is frequently performed by those from other disciplines, such as health care, or by teachers undertaking research for further qualifications within their own place of work (see 4.4.2) (Hargreaves, 2000). As a result, whilst gaining LREC approval may be a hurdle for health researchers, the barriers which are present at school level are less identifiable or negotiable. Indeed one health researcher noted that she would “never again” work in the school system (Mavis Kirkham personal communication cited in Cruikshank and Regis, 2005, p36), because of the frustrations encountered. For researchers working in schools there are also other difficulties, such as timetables, space restrictions, child behavioural issues and the problem of gaining parental permission via a letter rather than ‘face to face’.

Whilst I also experienced a number of challenges in gaining access to schools, frequently as a result of ‘school-office gate-keeping’, these frustrations did not continue once schools willing to accommodate the research had been identified. This willingness often appeared to be as a result of the personal interest of the Head Teacher, coupled with good co-operation between the Head Teacher and their staff. Instead I found that the major challenges in this research occurred when trying to undertake research in the classroom. Children’s behaviour and attention to the task varied greatly between the

schools, and different classroom environments, and random events such as a noisy bee in the classroom caused a large amount of disruption. The noise and activity in the classroom made the 'tell' element of the research particularly difficult. Being familiar with primary age children and classroom settings was helpful, and enabled me to manage these difficulties (see 6.3.3) However, the differences between this environment and many health research environments was notable, and this may present a challenge for those working in schools who come from other disciplines.

6 Conclusion

Exploring children's awareness of infant feeding using 'draw, write and tell' proved to be effective on many levels. It reflected current thinking relating to research ethics, participation and child-centred research. In researching a subject which was potentially sensitive it succeeded in generating data without suddenly exposing children to new and unfamiliar ideas, a factor which may have been significant in gaining access to schools. 'Draw, write and tell' was suitable for a subject which was likely to be of variable, and often limited, interest or significance to children - I observed that it was capable of registering children's basic ideas about infant feeding, as well as identifying issues around which there were more opinions or emotions. The method was effective for use with children of a wide range of ages and abilities because it enabled contributions using different media and at various levels of understanding.

Discussion

1 Introduction

The data provided by children during the 'draw, write and tell' activity were rich in content and meaning, and also very varied, offering numerous interpretations of infant feeding. Analysis of the data revealed an array of categories. These initially appeared diverse and chaotic. It was apparent that the categories were deeply interwoven. In order to discuss the findings in a meaningful way it was essential to be able to identify where categories were linked or influenced by one another. Re-organising the categories, using mapping (as discussed in 6.4.12) (appendices 12a-12c) identified new connections between diverse categories. Charting the data (as discussed in 6.4.13) (appendices 9a-9g) offered the opportunity to transect the categories, looking at the links between categories in the contributions of individual children or groups of children. From this it was possible to identify a number of previously unseen connections and interactions.

In the process of analysis seven key areas of discussion emerged which exemplify children's awareness and perceptions of infant feeding, often drawing together a number of categories. Some of these discussion areas support the findings of other research, whilst others identify concepts which do not seem to have previously been recognised in research around this subject with primary school children. This chapter will identify all of these discussion areas, drawing together the evidence contained in relevant categories and identifying the strengths and limitations of these arguments.

2 Mutability; variation and change in infant feeding awareness[92]

One of the clearest points to emerge from the data was that children in Year 1 do not all demonstrate the same perceptions of infant feeding, possibly because they have had different experiences in the home during early childhood. Whilst their individual ideas about infant feeding may change and expand during their primary school education, it appears that they still do not always seem to share the same ideas as their peers when they finish primary school. Over time, their experience and learning relating to infant feeding appears to alter their perceptions, but not in a uniform manner. Indeed, the three age groups studied in this research all demonstrated different patterns in their infant feeding awareness. There are also clear variations between gender, and trends which differentiate the individual schools. In addition, it is possible to see examples of children whose ideas do not necessarily fit within the norm for their particular group, suggesting that not all children were influenced by the same experiences or dominant social discourses. Charting the categories for all the participants (appendix 9b) revealed how these broad patterns in children's infant feeding awareness change and 'morph'[93]

between different groups. Mutability describes the shifting, complicated patterns seen in children's awareness of infant feeding.

1 Trends and exceptions – variety in awareness of infant feeding

90. Ages and stages

The Year 1 and Year 3 children in this study appeared to spontaneously illustrate either breastfeeding or formula milk feeding in their artwork. Whilst it was not always possible to ascertain where their awareness had been gained it seemed likely that it was generally based on their experiences of seeing babies being fed, or the ideas of their close social group and friends. This reflects the diversity in attitudes amongst the wider population to infant feeding. Many women in the UK come from a social background where there is no culture of breastfeeding, and where they may have had no experience and perhaps little awareness of the practice (Scott & Mostyn, 2003; Lavender et al., 2006). By contrast, amongst other social groups it is the social norm to intend to breastfeed (Kelly & Watt, 2005).

The Year 6 children's responses were also significant in that they perhaps mirror more adult ideas and concerns about infant feeding. The increased level of awareness of breastfeeding suggested that children had gathered additional information through observation or education. The increased number of illustrations of breastfeeding may, however, be partly related to improved drawing ability, enabling children to portray more complex or multiple feeding scenes. However, it seems reasonable to suggest that this is also the result of exposure to new ideas on the subject. However, as with young people and the adult population, increased awareness of breastfeeding may not always result in increased acceptance of the practice. Research has shown repeatedly that for many women knowing about breastfeeding and its benefits does not appear to overcome the social barriers involved (Purtell, 1994; Earle, 2000; Sittington et al., 2007).

91. Gender

It is important to note that, whilst children were recruited from particular age groups, this was not necessarily indicative of their maturity or experience. Indeed, this is most clearly seen in differences between girls and boys, an aspect also identified by Mackay (1995) and Giles et al. (2007) in their study of young people's attitudes to breastfeeding. In my research the responses of some of the girls have more in common with children in the years in advance of them than with their own age group. The reverse is true amongst some of the boys, who focus on toys and equipments, and aspects such as 'potties' and 'poo'. This demonstrates well recognised differences in maturity between girls and boys (Smith et al., 2003), a point also identified by Russell et al. (2004). It suggests that there may be significant challenges in interesting boys in infant feeding education (see 10.7.1.1). However, it is worth noting that in 6U, where infant feeding education had been received

earlier in the academic year, some of the boys produced illustrations which were almost equivalent to those of the girls in terms of the feeding methods identified, the focus on people and caring, and the use of language and imagery.

92. Social environment

Observations made by Mackay (1995) relating to differences in feeding attitudes between rural and urban children suggested that comparing schools in different areas might be advantageous. In addition there is a wealth of literature focussing on the low breastfeeding rates amongst women from disadvantaged communities. Therefore an attempt was made to recruit participants from schools in areas of contrasting affluence (see 6.4.4). The aim was to see whether there were broad differences in awareness between the two schools rather than to focus on the background and feeding knowledge of individual children.

Surprisingly, the general impression gained from the two schools was that the children in the less affluent urban school demonstrated far more awareness of breastfeeding than those in the more affluent rural school. Charting revealed that children in School U referred to breastfeeding more often (see appendix 9b), and from a younger age, and appeared to have a more detailed knowledge of the practice. None of the children in school R illustrated breastfeeding prior to Year 6, and those who did so in Year 6 tended to display a rather 'anxious' approach to the subject (see 8.2.1). In addition the children in school U appeared more 'comfortable' with the concept of breastfeeding, based on their use of imagery and language.

It is difficult to be certain whether this observation has any real significance, or suggest definite causes of this difference. Whilst the evidence points to higher rates of breastfeeding in more affluent households, the data gave no indication that this was likely to be the case in this research. The observation by staff in school R, recorded in the observation notes, that most mothers of children at the school worked outside the home, and many children had attended day nurseries from a young age, may be significant. It is also possible that variations in school ethos and teaching approach resulted in different learning opportunities, a factor which was clearly apparent amongst Year 6 children. Without further research around this issue it is impossible to reach any satisfactory conclusion and this finding remains an enigma.

Somewhat serendipitously, the significant differences in infant feeding education (see 7.2.3) between these two schools presented a more concrete, and potentially important insight, into the merits of teaching infant feeding at primary school level (see 10.7). In many ways the variations in infant feeding education in the two schools eventually overshadowed the exploration of the effects of differences in affluence on the children's infant feeding awareness .

2 Mutability of children's awareness of infant feeding

Charting the categories showed an apparent 'morphing' in children's awareness between

the ages of five (Year 1) and eleven (Year 6). Most noticeably there was a wider awareness of breastfeeding amongst older children, and an increased propensity to illustrate more than one feeding method compared with the younger children. Previous research undertaken with primary school children (Mackay, 1995; Russell et al., 2004) around this subject has not involved more than one year group. As such the differences in the infant feeding perceptions of a range of age groups have not been observed, and their awareness has perhaps not been documented as a 'fluid' and changing phenomenon. A notable point about children's changing awareness was that it did not emerge in a sequential manner, but appeared to branch out in different directions at different ages. This appeared to reflect a developing selectivity in ideas – so that some ideas were adopted but became less significant later on[94]. The research also identified some children who appeared less aware of different feeding methods or concepts, suggesting that not all children were receptive to new ideas, or had perhaps not been engaged in the subject in a way that was appropriate for them.

3 Conclusion

I would suggest that the primary school age range represents a key period in which children are able to absorb infant feeding information from a range of sources, and show, possibly by Year 6 in particular, an inclination to acknowledge feeding methods which may have been previously unfamiliar to them. Teaching new concepts in health promotion to primary school children has proved successful in the fields of obesity (Sahota et al., 2001) and drug use (Lloyd et al., 2000). Teaching about infant feeding in primary schools would therefore appear to be an effective means of introducing health promoting infant feeding ideas to large numbers of children, at a time when they are likely to be receptive, before their opinions on the subject become too rigid. This view was shared by Mackay (1998) and Russell (2004) in their research with primary school children, and has also been the opinion of other commentators such as Cruikshank and Regis (2005). Indeed, I would tentatively suggest this research hints at the possibility that education may enable some children to adopt ideas which are different, and healthier, than those shown by other children of their gender or social group. Whilst teaching at this time may be effective because children's ideas on the subject are very mutable, it is also essential to understand that inappropriate teaching may also engender negative opinions in children, suggesting that it is important to develop evidence based practice in this field.

3 Formula milk - a powerful force in infant feeding

"To approach the stranger is to invite the unexpected, release a new force, let the Genie out of the bottle. It is to start a new train of events that is beyond your control"

(T.S. Eliot, 1888-1965)

Charting the categories (appendix 9b) illustrated the prevalence of formula milk feeding in children's awareness of infant feeding. This observation reflected the immediate impressions gained during data collection. Just over half the children referred to formula milk feeding, which was more than referred to any other method of infant feeding. Perhaps even more notably, formula milk feeding had a constant presence throughout the data, which largely transcended children's age, gender or school. This contrasted with children's illustrations of breastfeeding and solid foods, references to which varied according to children's ages (see appendix 5b). Although familiarity with formula milk feeding has been observed by other researchers amongst both primary school children (Russell et al., 2004) and young people (Gostling, 2003), the method used in this research enables the frequent nature of their spontaneous references to it to be revealed with particular clarity. In addition, children's knowledge of formula milk feeding was frequently very detailed. Previous research (Mackay, 1995; Russell et al., 2004) with this age group has not identified these subtle observations, and for the first time this demonstrates the degree to which young children are familiar with formula milk feeding.

1 The bottle as a symbol of babies and infant feeding

It is actually not strictly true to say that formula milk feeding was frequently illustrated in the data – it would be more accurate to say that feeding bottles were most commonly illustrated. In most cases children added, verbally or in text, that the bottle contained milk, although there are examples where 'milk' appears in cartons and conversely one where it is implied that expressed breast milk is in a bottle. Some children focussed their drawing around a feeding bottle to the exclusion of anything else, and on occasions even omitted to include a baby. It might be suggested, on analysis of pictures included in the "Giving a bottle" category that feeding bottles were synonymous with infant feeding for many children. Henderson et al. (1999) went a step further than this in their review of infant feeding imagery in the media, and identified the image of the feeding bottle as not only symbolic of infant feeding but "representative of babyhood itself" (p. 1197). Although no research was found around the issue, I have noted that many 'new baby congratulations' cards, novelty baby gifts and feeding room signs[95] in the UK include feeding bottle images. It is perhaps therefore not surprising that children emulate this, and use feeding bottles as a symbol of infant feeding, perhaps with little understanding of the significance of bottles or formula milk feeding. It could be argued that omnipresent bottle images are, at least in part, responsible for the perception of formula milk feeding as "normalised and representing the obvious choice" (Henderson et al., p1999, 1196). This is supported by the view from image-based researchers in other fields that we live in a world where knowledge is visually constructed (Rose, 2003). The power of repeated, and subtle, images in advertising has been demonstrated to be consistently effective in raising the profile of products (Avery et al., 2000), and it is not inconceivable that the constant visibility of feeding bottles may create the same effect. However, whilst it has proved possible to exercise some control over the advertising of specific formula milk

feeds (HM Government, 1995), it is impossible to imagine that this could be achieved with generic images of feeding bottles. Indeed, as demonstrated in appendix 14, there is a general incredulity that the issue might be important, even amongst people and organisations who appear to be very aware of the power of marketing.

2 Formula milk feeding as 'part of the scenery'

Whilst some children focussed their illustration on feeding bottles, others presented them as an aspect of a wider selection of infant foods and baby equipment. In these pictures feeding bottles appear as 'part of the scenery', whilst breastfeeding was usually illustrated as a focus. Children who drew breastfeeding pictures appeared more inclined to write a length of explanatory text than those who drew formula milk feeding. This may be because they felt breastfeeding was less obvious, although it could also suggest the significance that they placed on the activity. This has links with Henderson et al. (1999), whose study found that formula milk feeding often appeared in television drama as a "background scene", rather than a crucial part of the plot. By contrast, they noted that breastfeeding, when it appeared, always constituted "the storyline" (p 1196). In a surprising manner the data collected from children in this research therefore links with the findings of Henderson et al (1999), suggesting that perhaps breastfeeding is perceived as a more remarked on activity than formula milk feeding.

3 A common language – talking about formula milk feeding

Formula milk feeding also provides a number of conundrums relating to language. Again there is a lack of common terminology, although there are a wealth of common euphemisms, relating to the practice. As discussed earlier (see 2.2.2), there is no agreement about how to describe formula milk. Whilst there appears to be a lack of research in this area I observe that the terms employed by health professionals, such as formula milk, artificial milk, breast-milk substitute, are not universally, or even commonly, used amongst the general population. This possibly explains why no children in this research used the terms, even when their knowledge of formula milk preparation and feeding was very detailed. Instead, children tended to refer to "baby milk" or "having a bottle" (see 8.3.3 and 8.3.7). These phrases were used consistently and almost universally by children of all ages from both schools and represent a form of euphemism known as "veiling" (Abrantes, 2005, p.103), in which ideas people prefer to avoid are described in vague terms. Whilst it is impossible to say where children learn these terms it would not seem unreasonable to suggest that they pick them up through hearing them in common parlance. The use of the phrase "having a bottle" is of interest both because of its illogicality[96], and because it provides further evidence of the importance of the bottle image (as discussed in 10.3.1). Ironically, it appears that formula milk feeding has acquired common euphemisms in a way that breastfeeding has not. In some ways it would seem unnecessary for formula milk feeding to have gained euphemisms because it is not linked to potentially embarrassing or sexual words in the way that breastfeeding is. However, I would speculate that perhaps it might indicate a degree of discomfort with

the concept of an artificial product, or some difficulty in comprehending or accepting such an overtly manufactured food being fed to very young children.

4 Measuring and mixing

Children's perceptions of measuring and preparing formula milk were evident in the research. A number of children included volume measurements on their illustrations of bottles[97] and it was clear from their descriptions that they attached some significance to these. This trend appeared to be more prevalent amongst those children who recalled observing formula milk feeding (appendix 9c). Indeed, to observe bottle markings perhaps requires closer contact with bottles than merely observing them from a distance. Such early familiarity with the concept of measuring milk intake may perhaps make the idea of breastfeeding difficult to comprehend (Forster & McLachlan, 2008). This possibly has some resonance in the mistrust of body efficacy felt by some parents in relation to breastfeeding (Dykes, 2002, Dykes & Williams, 1999; Dykes, 2004).

5 The baby milk business

Charting the data (appendix 9c) revealed a lack of references to specific brands of formula milk. Bearing in mind the number of references to formula milk and the detail given relating to other aspects of formula milk feeding this was quite unexpected. I would suggest that this may be partly indicative of the peripheral nature of infant feeding for children. Of more interest is the possibility that the limits placed on formula milk advertising have reduced the visibility and impact of individual brands on children. It is perhaps worth speculating that this has the potential for long term impact. Research relating to marketing and brand identity of other goods has suggested that recognition of a particular brand increases the acceptability and likelihood of future purchase of a product (While et al., 1996; Achenreiner & Roedder John, 2003). Other research has noted that children appear to form relationships with brands early in childhood which may develop into lifelong appeal (Ji, 2002). Whilst this represents pure speculation it would be advantageous if this lack of brand awareness at primary school level had long term public health benefits relating to infant feeding.

6 Conclusion

Children in this research had a generally high level of awareness of bottle feeding, although their perception of formula milk as a specific product was more limited, particularly amongst younger children in the study. Children in this study appeared to use feeding bottles to signify infant feeding. This is perhaps because feeding bottles are recognisable and easy images to draw symbolically. Despite controls on formula milk advertising, popular images of feeding bottles are widespread and are perhaps unconsciously absorbed by children. Many children appear to have perceived formula milk feeding as commonplace and normal, and a striking number had considerable

familiarity with the intricacies of formula milk feeding. It is remarkable that a relatively recent substitute for breast milk, inferior in design to the original, has gained such prominence and acceptance. This study demonstrates the widespread presence of formula milk feeding in society, symbolised by feeding bottles and seen through the eyes of children. It presents evidence to show that formula milk and feeding bottles have become a pervasive presence in our perception of infant feeding and babies. As a result it appears that our culture has very much "let the Genie out the bottle" (T.S.Eliot, 1949), and may have significant problems in trying to control the formula milk feeding phenomenon which has emerged.

4 Breastfeeding – 'taken for granted' or 'problematic'

> "Breastfeeding (is located) firmly in the problematic area of life"
>
> (Smale, 2001, p240)

Charting the categories generated by the data illustrated the diversity of children's breastfeeding awareness (appendix 9d), and enabled a closer examination of links with other categories. Amongst those children who mentioned breastfeeding there were some who appeared to regard it as 'the norm' and others for whom it presented some difficulties.

1 Breastfeeding as a 'taken for granted' activity

Some previous research has suggested that for primary school children breastfeeding is "not a taken for granted activity" (Russell et al., 2004, p.70). However, my research identified that for a small group of children breastfeeding appears to be regarded as normal and familiar. Some of the breastfeeding pictures drawn by the children were very naturalistic, or were clearly domestic scenes which they had observed. In addition, some of the children wrote or spoke in a knowledgeable and familiar manner about breastfeeding. This was particularly apparent amongst the younger children who illustrated breastfeeding. However, amongst some children who drew breastfeeding there was a distinct impression that the concept was not entirely comfortable or natural, which was particularly identified in the observation notes relating to class 6R.

2 The problem of breasts in breastfeeding

The concept that breastfeeding may be 'rude' was noted by Mackay (1995) amongst Year 6 children, although not by Russell et al (2004) with 6 year old children. This research identified a similar situation – whilst amongst the younger children in the research there was no overt suggestion that breastfeeding might be considered to be 'rude', some of the Year 6 pupils appeared to find the aspect of breasts and nakedness

quite difficult and confusing. Both the teaching assistant and myself noticed this and it was noted in the observations made during the fieldwork. The reasons why discussing breasts, and therefore breastfeeding, might be viewed as problematic were not clearly articulated by the majority of children, indeed only Amy (6R2f10) clearly expressed her anxieties about this. However, children's visual and verbal references (see 10.4.2.1 and 10.4.4) to breastfeeding offer clues which suggest that the relationship between breastfeeding and breasts, and widespread cultural mixed messages about breasts, may be at the root of the problem. This interpretation is supported by a wealth of literature relating to the sexualisation of breasts in Western culture and its affect on attitudes towards breastfeeding (Squire, 2003). Whilst young children, of six years and under, whose perceptions of breasts relate to their own experiences and are generally non-sexual (Brilleslijper-Kater & Baartman, 2000), may have a very straightforward view of breastfeeding, this appears to change as children mature and are influenced by their social environment and media. It would seem reasonable to suggest that children, particularly those on the verge of puberty, may be confused between the popular notion of breasts as sexual, and the concept of breasts for infant feeding.

The focus on breasts was particularly apparent amongst some of the boys in 6R. There appeared to be an element of 'challenge' and a sense of 'daring' from the boys in presenting pictures of breasts, which the teacher independently noted and commented on. Their drawings were very anatomical, so that only the breast and the baby's face were shown, and they entirely lacked context or reference to the mother/baby relationship shown in other children's art. This may have some links with research that identified that limited contact with breastfeeding, and exposure to images of breasts in popular media, appears to fuel objectification (Ward et al., 2006).

The girls in 6R also appeared to be sensitive to the subject of breasts. Comments such as "it was a bit strange, seeing some baby and someone else's things", indicated that perhaps breasts might be the issue that complicates breastfeeding for some children. Particular sensitivity and embarrassment in females, compared with males, to the sight of breasts, was noted by Greene et al. (2003) in their study of young people's attitudes to breastfeeding. Mackay (1995) found that distaste of seeing breastfeeding also appears to be more pronounced amongst young women than young men. The background to this observation may be explained by research from the US, which noted that levels of erotophobia were higher amongst young adult women than their male counterparts, and that this phobia also appears to be associated with distaste of breastfeeding (Johnston-Robledo et al., 2007). Again this suggests that great care should be taken when choosing visual images for promoting breastfeeding with children, young people and adults.

93. Drawing nakedness

In light of the observations above, it was noticeable that some illustrations of breastfeeding involved a considerable degree of nakedness. Several children produced artwork which demonstrated very accurate breastfeeding poses, whilst others demonstrated a general understanding of the principles of breastfeeding but perhaps a

lack of practical knowledge. It was quite surprising to find that children volunteered these images, actually presenting greater breastfeeding detail than expected, with some showing aspects such as a flow of milk. This was particularly noticeable in illustrations from School U, which could be considered to be dramatically different to those from School R in this respect.

Possibly this interpretation of breastfeeding reflects that children are aware of breastfeeding, but unfamiliar with the practicalities, so that the degree of nakedness is greater in their imagination than it needs to be in reality. It is also possible that their illustrations were based on visual material they had seen relating to breastfeeding. Research has already demonstrated that public health education containing pictures of breastfeeding may demonstrate an unusual degree of nakedness, which for some adult women appears to be counterproductive in promoting breastfeeding (Stewart-Knox et al, 2003).

3 Problems with breastfeeding

An aspect of breastfeeding which is repeated frequently in the literature (see 2.3.1.7) relates to women's concerns about the problems of breastfeeding, in terms of practicalities such as pain or inconvenience. Young people also appear to have similar concerns (see 3.1.3). By contrast none of the children in my research made any mention of these aspects of infant feeding. This is of added interest because Russell et al. (2004) noted that six year olds in their study, when asked by the researchers, identified practical considerations such as the perceived problems of infant feeding outside the home and night time feeding. This does raise a number of questions regarding when and where people learn about the problems associated with breastfeeding.

4 Lost for words – the vocabulary of infant feeding

Previous infant feeding research with primary school children has identified children's lack of breastfeeding vocabulary as a significant issue (Russell et al., 2004). As a result, one of the key reasons for using 'draw, write and tell' was to enable children to present their ideas in a range of media, so that difficulties with imagery or terminology might be mitigated as far as possible. It was also intended to minimise the possibility of imposing adult terms on the children, so that they felt free to use those which they found familiar and acceptable.

A number of written and verbal references are made to breastfeeding throughout the data. Children more commonly used "breastfeeding" or "breast" as text or labelling, and only one used the word "breast" verbally. A number of children were inventive in their use of alternative words or phrases to describe breastfeeding (see 8.2.3). In some instances children who recalled seeing breastfeeding, particularly outside of the school environment, appeared to be more direct and accurate in their use of breastfeeding language than their respective peer groups. Possibly this reflects familiarity with

breastfeeding language at home or in a social context. Previous research has identified that children from breastfeeding families are more confident regarding the practice (Greene et al., 2003; Giles et al., 2007) and I would suggest that this may extend to use of language.

Identifying age related differences in breastfeeding terminology was difficult because of the minimal number of younger children who chose to illustrate breastfeeding. The term “boobie” was used by one of the six year olds (Emily 1U7f6). Russell et al (2004) also recorded the use of this expression by six year olds. Whilst one other child (Freya, 6U4f1) initially wrote this on her picture she then changed this to “brest”, perhaps suggesting a preference for a more adult term, or indicating that she felt this would be more appropriate in the context of the research exercise. Whilst it was possible to see greater accuracy in terminology amongst the older age groups this was not consistent, and it seems likely that other factors were significant.

By far the clearest differences in vocabulary were between children who had received recent breastfeeding education in school and those who had not. A number of children in 6U annotated their drawings with “breastfeeding” or “breast”, which were not terms used by children in any other groups[98]. By contrast, the children in 6R did not have a similar use of language, with none using accurate terminology, but instead used some contorted explanations (see 8.2.3). Unlike formula milk feeding (see 10.3.3), children do not appear to have used euphemisms for referring to breastfeeding. This observation was also made by Russell et al (2004), who identified that amongst six year olds in their study “there was no common, taken for granted” (p74) language of breastfeeding. It is perhaps worth considering that a factor in this may be the discomfort amongst a proportion of the adult population with using the words ‘breasts’ and ‘breastfeeding’, so that “the unspoken nature of breastfeeding is indicated by euphemism” (Smale, 2001, p239). It would be reasonable to expect that children might also prefer not to use these terms, and have a preference for other words or phrases. I would suggest that whilst various adult euphemisms, such as ‘nursing’[99], have been popular and widely understood in the past, the decline of breastfeeding has led these to fall into disuse and not to be replaced, so that breastfeeding is perhaps now indicated by *inconsistent* euphemism, which is more difficult for children to grasp. Lack of acceptable ‘correct’ terminology, and an absence of commonly understood ‘comfortable’ expressions possibly make it difficult for both adults and children to enter comfortably into dialogue relating to breastfeeding.

This situation clearly presents a problem for both researchers and educators in this field. This study had the advantage of enabling children to use their own chosen terms or descriptions, and was perhaps therefore relatively ‘unthreatening’. However, the design of other research, or of teaching materials, might struggle to find a common language with which to communicate around the subject. Whilst using ‘professional’ terms may be seen to be correct in teaching sensitive subjects[100] (Hilton, 2001), it may also create a barrier, as these do not seem to be commonly, or comfortably used by the majority of children. However, it could also be argued that avoiding terms such as breast and breastfeeding re-enforces the problem of acceptance, and further complicates a process which should be viewed as normal and natural.

5 Conclusion

The findings of my research support those of Russell et al. (2004) that breastfeeding is largely not a “taken for granted activity” (p70) amongst primary school children, although some notable exceptions to this were observed. To compound this, and perhaps particularly as a result of this unfamiliarity, it also appeared that, for many children, the association of breasts with breastfeeding is confusing. As such, findings from my research support the view of Smale (2001), that breastfeeding may be perceived as problematic. However, it appeared that in some cases the effects of this are mitigated, either by social influences or through education. I would suggest that promoting the primary function of breasts as breastfeeding, perhaps before children are too heavily influenced by sexual attitudes and popular media, may be important in normalising breastfeeding.

5 ‘Tea or coffee?’; perceptions of equal choices in infant feeding

Whilst it was clear from initial viewings of the children’s artwork that both breastfeeding and formula milk feeding had been illustrated by some children, it was only during coding that children’s perceptions of the relationship between the two became clearer. Indeed, it had not been anticipated that children might perceive breastfeeding and formula milk feeding to be inter-related. It emerged that whilst some children were aware of both breastfeeding and formula milk feeding, they appeared to view this as a ‘tea or coffee’ choice – as different but equal, mutually exclusive options. This observation was brought sharply into focus when the categories were being mapped according to meaning, which highlighted the lack of categories relating to ‘why?’ in infant feeding (see appendix 12c)

1 Equal choices in infant feeding

The “Two ways” category (see 8.5.1) identified the text and comments made by some of the children when referring to both breastfeeding and formula milk feeding. What was notable was that none of the children commented on the existence of two different methods. There appeared to be an acceptance of the existence of two choices of milk feeding. However, it was impossible to ascertain whether children understood the benefits involved with breastfeeding. The only clue here was perhaps that in some cases children showed a collective shift towards breastfeeding awareness as they matured, with an increasing number demonstrating exclusive breastfeeding by Year 6, matched with a decrease in the number showing exclusive formula milk feeding in this year group. This observation might be further illuminated by a longitudinal study. Mackay (1995) however demonstrated that some eleven year olds were aware of the pros and cons of different forms of infant feeding, and research has also identified that children of this age are well informed about healthy and less healthy diets and food choices (Owen et al., 1997; Dixey et al., 2001). Part of the issue here may be in the way in which society views

the apparently parallel choice between “the breast or the bottle” (Palmer, 2009), which does not encourage critical reasoning around the subject and, it could be argued, leaves social influences as the dominant factor in parental infant feeding decisions. Whilst there is some understanding in society of the concept that breast milk is better for babies (Shaker et al., 2004), there is also widespread belief that formula milk feeding is ‘normal’ (Scott & Mostyn, 2003).

The confusion for children may be that, even if children perceive breastfeeding as ‘more natural’, as described by Mackay (1995) and Connolly et al. (1998), it may still be difficult for them to reconcile this with the dominant and demonstrably socially acceptable practice of formula milk feeding (Henderson et al., 1999). This may particularly be the case where it implies that the feeding choices of trusted adults, their family or friends, may be flawed. This clearly presents dilemmas for educators who wish to present infant feeding health education sensitively to children. Smale suggests that educators should;

> Work sensitively in schools….Attacking the chosen feeding methods of parents may be counter-productive.
>
> (Smale, 2001, p243)

This may present a significant challenge for teachers, who must combine teaching a sensitive and potentially unfamiliar subject with consideration for the attitudes of children and families. There is also a fear amongst teaching staff, especially in relation to sensitive subjects, of straying outside of the prescribed areas of teaching, or offering what might be considered an opinion (Renold, 2005). As a result I would speculate that they may take a very ‘neutral’ approach, which may be an explanation for the ‘tea or coffee’ choices presented by children in 6U. This phenomenon has been observed amongst health professionals, who may not discuss infant feeding options with women (Ineichen et al., 2002). Alternatively, health professionals may attempt to present a ‘neutral’, version of the facts around infant feeding, in the belief that parents should make their own choice. Ironically by glossing over the incontrovertible truths about infant feeding they may be denying the opportunity for them to make an informed choice (Palmer, 2009).

2 “The other way”

Perhaps even more alarming for those who would promote breastfeeding is that a small number of children couched formula milk feeding not only in terms of having an equal relationship with breastfeeding, but viewed formula milk as the norm and breastfeeding as an alternative. This was examined in the subcategory “The other way” (see 8.5.3). Here formula milk feeding was identified as the primary choice, with breastfeeding as an alternative option. Whilst only a small number of children expressed this view it is perhaps significant that none inverted the concept, but instead tended to project a neutral view of the two methods. I would suggest that this situation may be indicative of the prevalence of formula milk feeding in society, which are omnipresent and, as discussed in the previous sections, appear to figure significantly in children’s early awareness of

infant feeding (Russell et al, 2004). As such it is perhaps not surprising that many children become aware of breastfeeding after they know about formula milk feeding, and as a result breastfeeding becomes the 'bolt on' addition to their infant feeding awareness.

3 Differentiating between breast milk and formula milk

Whilst several children in the research could clearly explain the process of making up a bottle of formula milk there were clear difficulties in moving beyond that point to consider what formula milk is made from (see 8.3.7 and 8.3.8). There seemed to be a general understanding, with a couple of exceptions, that "baby milk" was somehow different, but little explanation beyond that. This is perhaps unsurprising as many adults might struggle to explain what formula milk is derived from. Ironically, it is equally difficult to describe, explain or even see breast milk. It is possibly the homogenous concept of 'milk' that has helped to enable formula milk to establish such an equivalent position to breast milk.

94. A short note on combining breast milk and formula milk

It is worth noting that, whilst other researchers have found confusion regarding 'combined' feeding amongst young people (Greene et al., 2003), this research did not show explicit evidence of this. Where children were aware of both breastfeeding and formula milk feeding they tended to use phrases such as "either" and "other", which did not directly imply combining the two.

4 Conclusion

The lack of information given by the children regarding the differences between breast milk and formula milk is perhaps one of the most concerning findings of this research in terms of long term public health outcomes. Indeed, many of the children who illustrated both breastfeeding and formula milk feeding, and indicated that they were 'optional' had received infant feeding education in school. One explanation might be that teachers experience some anxiety about appearing to criticise parental infant feeding decisions of parents during health education. However, I would suggest that it is essential that the fundamental differences between breastfeeding and formula milk feeding are identified when delivering health education to every age group.

6 A short hop from formula milk feeding to eating solid foods

Charting the data (see appendix 9b) illustrated that a number of children presented illustrations of both formula milk feeding and solid foods. By contrast, whenever children depicted breastfeeding and solid foods they were portrayed in separate scenes, appearing to be mutually exclusive[101]. Phoebe (6U11f10) provided a contribution

which is notable in exemplifying this discussion area by showing a feeding timeline.

Mapping the data (see appendix 12a) demonstrated a link between solid foods and formula milk feeding which was not present between solid food and breastfeeding. This phenomenon is of interest because it suggests that children may perceive breast milk and formula milk as having subtly different roles in respect to weaning. In light of the apparent public confusion regarding the issue of when and how babies should be introduced to solid foods (see 2.2.3), it would seem to be an observation worthy of further consideration.

1 Breast milk to formula milk to solid foods

Despite guidance (WHO, 2003) regarding duration of exclusive breastfeeding there is still a trend towards short term breastfeeding, with many parents transferring to formula milk feeding at an early stage. Weaning prior to the 6 month recommendation is also the norm in many families (Savage et al., 1998; Anderson et al., 2001). This trend towards short term breastfeeding has been reflected in research with young people, with Greene et al. (2005) demonstrating that many of the young women in their study thought that "breast milk is good to start with but I would expect it to stop soon". The data collected from children in this study suggests that they did not connect breastfeeding with eating solid foods, and perhaps saw formula milk feeding as a stage between them. Phoebe (6U11f10) demonstrated this concept with a series of images showing how a baby might move from breastfeeding, to formula milk feeding, to "mush" and on to 'normal', unmashed foods. This appears to be both the popular view of the transition between foods, and the situation which is most frequently observed in practice (Anderson et al., 2001).

The link between formula milk and solid foods not only appears strong in the children's artwork. Research has demonstrated that formula milk fed babies are offered solid foods earlier than breastfed babies (Noble & Emmett, 2006). Formula milk fed babies have also been seen as more likely to be weaned onto commercial foods, and less likely to consume fruit and vegetables than other babies (Reeves, 2003). Perhaps most notably, formula milk fed babies' milk consumption did not appear to reduce with the introduction of solid foods, whilst breastfed babies have been shown to have reduced their milk intake (Noble & Emmett, 2006).

2 Awareness of solid foods

In addition to observing the close link between formula milk feeding and solid foods in the category charts and mapping, it was also noted that the children had illustrated a wide array of solid foods (8.4.6). The suitability of these were varied, and at times rather alarming – it is to be hoped that some of their suggestions were based on imagination or misinterpretation rather than observation. Children seemed to be aware that babies often eat 'modified' foods, and whilst some perceived this to be mashed up foods (see 8.4.7) a

number referred to generic ‘baby food’ or commercial baby food (see 8.4.4 and 8.4.5) which perhaps suggests that children have observed these items and already perceive them to be an aspect of infant feeding. Except for a couple of examples, there was no apparent recognition of the baby’s age, and it was unclear whether children were intentionally linking solid foods with newborn babies, or had chosen to illustrate older babies[102].

3 Conclusion

Solid foods are not an aspect of children’s awareness of infant feeding which has been explored in previous research. Focus on breast versus formula milk feeding has tended to be the main area of concern, although solid foods may start to enter infant diets relatively quickly, and as such have an impact on milk feeding. Poor public awareness, and limited professional knowledge, of current guidance on weaning highlights the importance of discussing the issue. To a great extent I would suggest that the message regarding appropriate weaning is often entirely lost in the ongoing struggle to promote healthy choices in infant feeding.

7 Handle with care – children and infant feeding education

Charting the categories demonstrated that not only did children recall seeing babies being fed, but their experiences varied according to their age (see appendix 9e). Because children did not always recall seeing feeding, and it was not necessarily appropriate to prompt them, this information is only available for a proportion of the participants (see 8.7.1). Amongst the few children who recalled seeing infant feeding there appears to be a shift from seeing infant feeding solely at home amongst Year 1 children, to include observing feeding outside the home amongst Year 3 children. The Year 6 children additionally recalled the subject being taught in school. The teaching in school element is the most concrete of these because, regardless of children’s memories, or lack of memories, it seems likely that in both schools the whole class received the same teaching[103]. What emerges from this are the qualitative differences in awareness and perceptions of infant feeding amongst children where the subject has been taught in school. This raises questions about children’s responses to this teaching and the appropriateness of the methods used.

1 6U and 6R; a case study of variation in infant feeding education

The Year 6 classes demonstrated very varied reactions to infant feeding. On balance the children demonstrated similar levels of awareness of infant feeding methods, but their perceptions of these were very different and in some cases quite extreme. All of the girls, and the majority of boys, in Year 6 in both schools demonstrated an awareness of breastfeeding.

In 6U there was a general impression that the children in the group were confident in picturing and writing about breastfeeding (see 8.2.4 and 8.8.3), and they were the only group where a child used the word “breastfeeding” verbally. It appeared that these children were able to view breastfeeding as a shared activity between the mother and baby (see 8.6.5) and focussed on the ‘people’ element of the picture.

This situation contrasted sharply with class 6R. The general awareness of breastfeeding appeared similar between the two classes, but perceptions were markedly different. Initially none of the children illustrated breastfeeding, although two of the boys chose to undertake a second drawing, which showed breastfeeding (see 8.2.1). Only the two girls in 6R did not illustrate breastfeeding, and instead drew very similar pictures of feeding bottles. However, they recalled a class observation of breastfeeding five or six years previously (see 7.2.3), and appeared to have clear, and in one case graphic, memories of this event. Even though many years had elapsed, one child, Amy (6R2f10) still retained very negative recollections of the session, and was one of very few children to make any kind of value judgements during the research (see 8.8.7). Her classmate Daisy (6R3f10) was less negative about the experience, but was not very forthcoming, and despite being aware of breastfeeding chose to draw formula milk feeding. None of the boys in the group appeared to remember this experience. The children in this class appeared to have rather uncertain and ambivalent feelings regarding breastfeeding, which may be related to social confusion regarding the function of breasts and the nature of breastfeeding. This class had received no infant feeding education since this early experience, and there appeared to be no plans to teach the subject further prior to them leaving for secondary school later in the year.

95. The learning experience

The most obvious difference between 6U and 6R was the infant feeding education received. The reactions of the children involved raises questions about the issues and benefits of the different methods employed by teaching staff. It is difficult to comment at length on this issue without access to more information about the content of the lessons[104]. The teaching received by 6U during the previous year appeared to have been received in a ‘matter of fact’ manner and they referred little to it. As a group they appeared well informed and mature in their understanding of breastfeeding, and it is open to speculation whether this was at least in part a result of the teaching. The early breastfeeding education session received by 6R about five years earlier was not recalled by some pupils, and was remembered with anxiety by those who did recall the experience. On the whole the group appeared rather less well informed or confident about breastfeeding.

2 Teaching infant feeding in the classroom; sense and sensibility

Whilst the experiences and perceptions of the children in 6U and 6R may well not be representative of others, they are perhaps sufficiently concerning to suggest that care needs to be taken when teaching infant feeding. The findings of this research, combined

with the literature. indicates that several key points should be considered when teaching infant feeding in schools. These issues, namely the timing of infant feeding research, and the appropriateness of teaching resources, are discussed below.

One of the key differences between 6U and 6R was the age at which infant feeding education occurred. This raises the question about 'when' it might be appropriate to teach the subject. The Year 1[105] children's awareness of infant feeding was limited, and in some cases children did not identify any particular feeding method. Bearing in mind that children's ability to learn is strongly dependant on context (Smith et al., 2003) it is perhaps disorientating to be taught infant feeding 'out of the blue'. However, the notion that early exposure to breastfeeding may be beneficial is understandable, based on the premise that women seem more disposed to breastfeed if they come from families where it is the norm (Grassley and Nelms, 2008[106]), and that early breastfeeding observation at school may provide a substitute for this. However, I also observed in my research that several of the youngest children did not seem quite able to suggest a feeding method and were unclear about the subject, which perhaps suggests that formal teaching about infant feeding in the lower primary school may not be effective without adequate follow up later on.

Having noted this, research with young people has demonstrated that they may begin to find breastfeeding embarrassing and distasteful during adolescence, which potentially complicates teaching of the subject (Gregg, 1989; Green et al., 2003). As this research suggests, even some older primary school children in Year 6 may already have begun to find breastfeeding difficult to discuss, although it was noticeable that the children who appeared to find this embarrassing were exclusively in 6R. Children in 6U, who had received recent infant feeding education did not indicate any embarrassment, in fact they appeared knowledgeable and confident regarding the subject.

Boys in particular may believe that it is not relevant to them or may be less mature in their approach (Mackay, 1998). Charting the categories from this research demonstrated that in some cases the boys' data may share more similarities with that of more junior groups than with girls of their own age. This offers an added complication in pitching educational interventions at an appropriate level for all children.

It is clear that identifying a suitable age at which to provide infant feeding education is complicated. I would suggest that part of the problem is the practice of teaching the subject as a single session. Both schools indicated that 'doing' infant feeding was seen as a 'one-off' exercise. Whilst primary school children are perhaps ideally placed for receiving infant feeding education it may be valuable to adopt a multi-faceted approach, using longer timescales, when delivering health education, particularly where it is a change in attitudes and values which are required (Warren et al., 2003). The 'slow but sure' approach to sex education in Dutch schools (Aggleton & Campbell, 2000; Lewis & Knijn, 2002), which builds on children's knowledge on a gradual basis from the first class in primary school, has proved to be most effective in not only increasing knowledge but, more importantly, in promoting effective public health messages.

96. ‘Live’ *breastfeeding*

‘Live’ breastfeeding has been utilised in several examples to explore breastfeeding promotion strategies (Dykes, 2003; Wells, 2003; Russell et al., 2005). In these examples children appeared, on observation, to be interested and enthusiastic about witnessing breastfeeding. Anecdotal reports also suggest that this technique is being used as an education intervention in a number of settings. This appears to be aimed at providing positive experiences of breastfeeding, especially to children who otherwise would not have this experience. Research with women has demonstrated that positive observation of breastfeeding is associated with favourable attitudes, although it also suggested that this was particularly associated with recent exposure to breastfeeding, which would obviously not be the case with school children (Hoddinott et al., 2009). However, the data collected in this research highlights that there may be some issues with this approach, albeit based on a very small number of children. It is possible that the example of discomfort with seeing breastfeeding in the classroom may have been unique to Amy (6R2f10), who appeared to have been quite upset by the experience of observing breastfeeding at school several years earlier. Even so, this still raises concerns because of the vehemence expressed by her regarding this. Whilst it cannot, in any way, be suggested that this teaching method was the cause of negative breastfeeding perceptions, it is definitely sufficient to suggest that some reflection is required on this particular education method. The issues of embarrassment and uncertainty when observing breastfeeding are well documented amongst adults and young people (see 2.3.1.4), and may also affect some children. Indeed, it may be perceived as quite a threatening experience;

> “Seeing breastfeeding away from a friendly context may put children off”
>
> **(Smal**e, 2001, p242)

It is perhaps worth considering that, at present, there is a lack of research which convincingly demonstrates the benefits of this educational intervention or adequately explores any possible drawbacks.

3 Conclusion

Children of primary school age appear to be receptive to the subject of infant feeding, particularly before they begin to move into adolescence. As such primary school infant feeding education would appear to be an effective means of achieving ‘blanket’ health promotion coverage of whole cohorts. However, this research has identified that children’s awareness, and ability to comprehend the subject varies considerably across the school age range, and pitching teaching methods appropriately is essential. Indeed, I would suggest that teaching of the subject needs to be multi-faceted and embedded within other subjects and activities so that it can be delivered gradually over a long period. It also appears that educators should carefully consider the ways in which children may interpret health messages, particularly in regard to bias or neutrality towards different feeding methods. It is essential that the teaching methods used are

evaluated and are evidence based. Whilst the potential for improving health outcomes through infant feeding education in schools may be significant, it is perhaps important to remember that children may have considerable sensitivities with regard to this subject, and care should be taken to respect these.

8 Infant feeding and caring for babies; various observations

The data collected from children suggested not only a varied awareness of infant feeding but also a range of ideas about caring for babies. Analysis across a number of categories revealed several interesting points relating to the role of fathers, and holding and comforting babies.

1 Fathers

Fathers were only explicitly illustrated in the drawings of three children in this research (see 8.6.2). Their presence was notable both in terms of its scarcity (see appendix 9f) and in the role that they played. This may be partly explained by the effects of the research method and bearing in mind the limitations of this research (9.1.5), because the picture boards portrayed a mother and baby, and did not identify a father in the scene. As such it would be unwise to infer too much from this. However, the observation still raises a number of important issues. Research with young people and adults has indicated that there is a perception that breastfeeding may marginalise fathers (Sittlington et al., 2007). The desire to cement the infant/father relationship, which is seen by some as fragile, is used as an argument for formula milk feeding (Earle, 2000).

Whilst the scarcity of fathers in the pictures was noted in the findings it was only when the data were charted that some links emerged between the ‘fathers’ category and other categories. No particular link could be identified across the categories between the three pictures, although they were all illustrated by girls in the same class. It was noted that all of the scenes including a father were clearly domestic scenes, whilst many others were not set in any particular context. Whilst two involved formula milk feeding, one related to breastfeeding. It is noteworthy that this breastfeeding illustration was also the only one in the whole study to include a reference to expressing breast milk, although it is impossible, based on only one child’s work, to conclude anything from this.

It is difficult to draw any conclusions from the lack of fathers in the illustrations, or from their presence with other family members. Previous researchers working with children in this field do not appear to have commented on this aspect of infant feeding, although the absence of comment about fathers in other research may be indicative in itself. Although they do not comment themselves it is worth noting that parental questionnaires in work by Russell et al. (2004), relating to children’s experiences of infant feeding, were all completed by mothers. Whilst the method used in my study may have influenced children’s work to some extent, there is not a sense from the data that children perceived

fathers as having an equal role in infant feeding, even where formula milk feeding was depicted.

2 Positioning the baby

Initially it had been thought that positioning of the baby (appendix 9g) was largely a result of different drawing styles, generally related to the age of the artist. Certainly amongst the younger children there was a tendency for babies to 'float', and it was rare for them to present a mother and baby close together, probably due to natural immaturity in drawing style (see 5.1.2). However, amongst the Year 3 and Year 6 children there was a general, although not exclusive, difference in positioning based on feeding method. Many children who only drew formula milk feeding and/or solids feeding positioned the baby in a cot or chair. This observation may partly reflect differences in children's interpretation of the baby's age, although this is not entirely the case. By contrast, most breastfed babies were pictured 'pinned to' to the mother[107]. It was noted that only a small number of babies are being held or cradled in the mother's arms, although this may be the result of a more advanced drawing style. I was careful to avoid viewing the pictures projectively throughout the analysis. As such, whilst this 'face value' review of baby positioning reveals some trends, it is difficult to interpret their meaning. It would be unwise to draw any firm conclusions from the data relating to these observations, but there is the opportunity here to raise a point in to relation cultural perceptions of baby care.

The general trend towards "parking" babies in cots or chairs rather than maintaining physical contact has been noted by other commentators (Hardyment, 2007). Despite the physiological benefits to newborns and mothers of closeness (Christensson et al., 1992), modern culture encourages separation. As a result the natural primate habit of infants "riding" on their parents (Ross, 2001) has been replaced by pushchairs. It even extends as far as items such as baby bottle support bibs (Hood, 1999), which remove the necessity of holding a baby to feed. These practices may have their origins in the baby care movements of the 19th century, relating to not 'spoiling' babies, and have been identified as a common and unfortunate practices by some (Hardyment, 2007). This development is known to complicate the establishment of breastfeeding, as it reduces the symbiotic nature of the mother/baby relationship and can prevent mother's from recognising baby feeding cues (Christensson et al., 1992).

3 Crying and comforting

It appeared from the data that children identified some emotional responses around infant feeding, and they frequently pictured the baby, mother and other individuals as smiling or crying (see 8.8.5 and 8.8.6). Because the story scenario involved a crying baby it is perhaps not surprising that many of the children presented emotions in their artwork. Many of the facial expressions may have been a result of artistic habit and style, although in some pictures the characters had contrasting expressions, suggesting a conscious choice. In addition, research around children's use of expression and

illustration of emotion shows clear intent (Wesson and Salmon, 2001). There did not seem to be links between smiling or crying and any other category. However, in several pictures children included text, or verbal explanation, demonstrating that the baby had stopped crying as a result of being fed. Whilst it is difficult to draw any conclusion from this it is possible that some children in this study perceived that babies respond to, and receive comfort from, being fed. Russell et al. (2004) have also noted that children were aware that babies use crying to signal that they need to be fed.

9 Conclusion

The use of 'draw, write and tell' enabled the collection of more child-led, in-depth and varied data than previous infant feeding research with primary school children has done. Although the method presented some inherent problems, particularly around analysis of the data, these were outweighed by the benefits. Indeed, the care required to negotiate the analysis of the data perhaps improved the research rigour. The open-ended nature of the research exercise, and the range of communication methods available to the children offered the opportunity to observe the wide range of children's awareness of infant feeding. On analysis, the data collected revealed not only trends and patterns but also illustrated clearly, perhaps for the first time, the extreme differences and individuality in children's contributions.

The overarching conclusions which have emerged from this chapter are that children have a range and depth of awareness of infant feeding methods far greater than has been previously documented. Within this it appears that, in general, children's awareness of 'normality' in infant feeding is considerably skewed away from breastfeeding and towards formula milk feeding and solid foods. For the first time it was also possible to observe that children's illustrations of their infant feeding awareness as they mature may not always develop in a 'straight line'. Instead they may demonstrate different aspects of infant feeding at different ages, as a result of increasing knowledge and social influences, but also due to changes in artistic development and perhaps a growing selectivity in infant feeding ideas.

The central role of formula milk feeding and bottle feeding in the children's art indicated their familiarity with it, not only through observing feeding, but perhaps also through absorbing the multiple references to formula milk feeding available in the media, in shops and throughout our visual culture and language. The impact that this has not only on choice of milk feeding but on attitudes to solid foods, and aspects such as nurturing babies, was evident in the data.

Despite the above comments, breastfeeding also had a strong presence in the data and, contrary to expectation, children were frequently able to illustrate it very clearly. It was clear that there were some aspects of breastfeeding which made it 'problematic' for some children, in terms of language, nakedness and sexual connotations. However, the artwork produced a far more positive impression of children's perceptions of

breastfeeding than previous research has implied, with a high proportion referring to the practice spontaneously and enthusiastically. It is acknowledged that these groups may not be representative of children elsewhere, but the general impression gained from this research was that, even where existing awareness of breastfeeding was lacking in Year 1, children had managed to acquire knowledge of the practice by Year 6.

The mutability of children's infant feeding awareness, and the issues around education emerged as a major discussion area. Whilst the research did not set out to identify the efficacy of different educational interventions, the opportunity to make some observations on this issue was fortuitous and most enlightening. This highlighted both the rationale for commencing education on the subject in primary schools, and also prompted consideration of some of the problems which might be associated with this.

The findings of this research have identified clear opportunities for developments in infant feeding education in primary schools. There are also a number of areas in this field which would benefit from further research so that a clearer picture of children's existing awareness and educational needs can emerge. In addition to this the research has also identified possibilities for the refinement and application of the 'draw, write and tell' method, which are of significance for further research around infant feeding and in other research relating to children's lives.

Conclusions of the research

This research has provided a number of new insights into children's awareness and perceptions of infant feeding. The motivation for this has been to expand current knowledge, and to promote its practical application in relation to developing infant feeding education for this age group. In addition, the study has enabled the development of 'draw, write and tell' as a research method, which may further effective utilisation in child-focussed studies. The new perspectives achieved from these findings have also generated suggestions for potential further research.

1 Original contributions

This thesis has provided two areas of original contribution to knowledge, firstly in relation to primary school children's awareness of infant feeding and secondly in the development of the 'draw, write and tell' method. These will be outlined separately below.

1 Primary school children's awareness of infant feeding

This research provided a unique insight into the infant feeding awareness of children at three intervals across the primary school age range. Previous studies have been restricted to individual year groups (Mackay, 1995, Russell et al., 2004), and as such it has not been possible to appreciate the differences between age groups, or identify the mutability that children demonstrate in their awareness and perceptions of infant feeding as they mature (see 10.2).

This research fundamentally differed from other work in offering children the opportunity to spontaneously demonstrate their own ideas, and did not seek to influence their views or limit their responses. The lack of restrictions on children's contributions enabled their views of the relationships between different infant feeding methods to be explored. It allowed the different levels of awareness that children have of breastfeeding and formula milk feeding to be observed, and enabled an appreciation of how they perceive these two methods in relation to each other. Other research has tended to 'polarise' children's attitudes towards either breastfeeding or formula milk feeding because it has asked them specific questions about these two feeding methods. In addition, this study has revealed children's perceptions of babies' consumption of solid foods. Previous research with children, or indeed with young people, does not appear to have explored the concept of solid foods to any extent.

Using a visual 'draw' method this research has given the opportunity for children to

demonstrate not only the breadth of their awareness of infant feeding methods but also the sophistication of their understanding of them. Russell et al. (2004) used a similar method to good effect, although the scope and focus of their research differed. In my study aspects of the children's artwork, such as volume marks on feeding bottles, and flow of breast milk, demonstrated far more about children's perceptions of infant feeding than other methods have revealed. It also identified that their awareness around infant feeding was often very inconsistent, with high levels of understanding of some aspects compared with a lack of in-depth consideration regarding other issues. Indeed it is in the analysis of these nuances that some of the most important research findings and recommendations for practice have been based.

Whilst Russell et al. (2004) identified breastfeeding terminology as a problem amongst six year olds, this research demonstrated that the same difficulty existed throughout all age groups in terms of verbal references to breastfeeding, suggesting that this may be more significant than lack of experience or language ability amongst the younger children. The lack of children's verbal use of 'breast' and 'breastfeeding' compared to their written references to the words, hinted at a problem which may be related to embarrassment about saying these words 'out loud'. The research identified the use of euphemism, and lack of consensus on terminology, around not only breastfeeding, but also formula milk feeding and solid foods.

Unlike work by Mackay (1995), this research did not identify noticeable differences between the responses of children in contrasting areas. Indeed, the awareness shown appeared comparable in some respects. However, children at school U appeared to illustrate breastfeeding far more frequently, and with a more sophisticated outlook than those in school R. Differences between the schools in terms of size and teaching arrangements made this difficult to identify. However, it is possible that potential differences in awareness caused by variations in affluence between the school populations were masked by their contrasting approaches to infant feeding education (see 10.7.1). This latter element became a far more significant focus of interest in the analysis of the data.

Previous research (Wells, 2003; Dykes, 2004; Russell et al., 2004) has sought to introduce an infant feeding educational intervention into a primary school, and in some cases has attempted to evaluate the effects of this. This study did not include any teaching intervention, indeed, it deliberately avoided doing so, but there was the unexpected opportunity to make some observations regarding the efficacy of existing infant feeding teaching in the schools. This identified wide variations in approach, and revealed markedly different ideas in the populations of children who had received education. Areas of concern were noted regarding both the sensitive handling of the subject (see 10.7), and the type of information imparted (10.5). However, because these observations were only made as a result of the chance differences between infant feeding education in the schools this remains an area in which further research is essential.

2 Recommendations for increasing awareness of good infant feeding practice amongst primary school children

1 Infant feeding education in primary schools

As discussed earlier (see 3.2.4) several researchers and commentators have suggested that infant feeding education in primary schools might be beneficial (Mackay, 1995; Dykes, 2003; Greene et al., 2003; Russell et al., 2004). This recommendation has been based on a recognition that social and emotional barriers to breastfeeding (as discussed in 2.3), may develop during childhood. This can result in fixed and negative infant feeding opinions amongst young people and adults. The belief that primary school children may be more open to discussion of the subject has previously been difficult to substantiate. Indeed, there has been limited evidence (Russell et al., 2004) to demonstrate whether children are interested in, or even aware of, infant feeding. There has been no research to identify if, or to what extent, their infant feeding ideas are already formed. This study has provided some insight regarding these questions, and from this it is possible to make suggestions for increasing children's awareness of good infant feeding practices.

97. *Identifying when to teach infant feeding in primary schools*

Based on my experience of undertaking this research in schools I am of the opinion, as were Russell et al. (2004), that children of primary school age are generally interested in the subject of infant feeding. In addition, it was clear that across the primary school age range ideas on the subject were markedly different, showing clearly defined changes and developments (see 10.2). Children clearly absorbed ideas from a variety of sources; home, school and social lives, and each child seemed to have developed individual perceptions based on this. Their interest in the subject and the mutability of ideas in this age group suggest to me that they would be receptive to infant feeding education. However, the findings also indicated that it would be wise to consider carefully how such education might be implemented.

Previous research in primary schools regarding infant feeding has been limited to either the youngest or oldest children in the age range. By involving children from Years 1, 3 and 6 it was possible to see the changes in infant feeding awareness. The implication of this finding is that teaching a single infant feeding session in primary schools may well be entirely unsatisfactory. Single sessions, as received by the two Year 6[108] classes in the research during their primary school education, cannot be expected to be appropriate for all children of a particular age, whose experiences, maturity and educational ability may vary considerably. In addition, as seen with class 6R, a one off session at a young age, which is not followed up in subsequent years, may be entirely forgotten or may leave unanswered questions and anxieties. Infant feeding education much later in the primary school, as observed in class 6U, is perhaps effective for some children and certainly

appears to have had a positive effect for a number of the children in the group. However, despite the teaching having been relatively recent, it did not seem to have made an impression on several children, whose grasp of infant feeding still appeared to be quite limited. I would suggest that both attitudes and knowledge about infant feeding are most likely to be influenced by inclusion of the subject into many areas of the curriculum throughout the primary school age range.

Teaching infant feeding as a specific classroom session appears to have been the practice in school 6U, and historically the practice in 6R. However, as this research demonstrated, the subject may be surprising or alarming for some children, so perhaps a gradual build up of ideas and knowledge would be less unsettling. Laying a groundwork which firmly identifies lactation and breastfeeding as normal could be achieved by including discussion of it within subjects which already exist in the curriculum at present[109]. In areas of the curriculum entitled Citizenship and Personal, Social and Health Education there are numerous opportunities for inclusion of infant feeding, such as 'Developing a safe, healthy lifestyle', 'Making choices that promote healthy living', 'Life processes and living things', 'Making choices', 'Developing good relationships and respecting differences between people', 'The needs of people and living things' (National Curriculum, 2009). In addition clearly defined curriculum areas of Physical Education, Geography and History offer numerous opportunities for referring to infant feeding and re-enforcing the health promotion message. Furthermore, books, posters and other media which present positive breastfeeding images should perhaps be actively included in school resources, providing a cultural 'background' which promotes breastfeeding as normal. This concept has been identified as;

> "a spiral curriculum, which revisits topics, in increasingly demanding ways, with more specific language as the child matures".
>
> **(Wetton and McWhirter, 1998, p.264)**

However, whilst teaching such as this may be valuable it has already been noted that the 'optional' nature of infant feeding in the curriculum can lead to it being missed (Dykes, 2004). Based on previous research, whether all teachers would feel comfortable to teach this subject is debatable (Greene et al., 2003) and I would question how many would be focussed on identifying opportunities to include it in many parts of the curriculum amidst the pressures of an already full timetable. As such any teaching interventions are perhaps more likely to be delivered as a series of dedicated infant feeding education sessions. I would suggest that this is perhaps the most practical means of ensuring the subject is taught, although formal education of this type should be spread gradually across the age range rather than occurring in a single session.

98. Teaching infant feeding in primary school – *influencing hearts and minds*

Perceptions regarding the normality of breastfeeding, and attitudes towards breasts and their functions, have already been acknowledged as problem areas for young people and adults. There is an underlying suggestion in the literature, although one not very clearly

articulated (Mackay, 1995; Greene et al., 2003), that it would be desirable to present breastfeeding to primary school children in a positive manner before barriers, such as social opinion, embarrassment or practical anxieties, become deeply ingrained. For this reason, identifying breastfeeding as a common sense, natural and normal activity is possibly best achieved when children are young. One aspect of this is to commence discussion regarding breastfeeding and breasts prior to an age when children may begin to associate breasts with sex. It would seem important that children are offered the opportunity to become familiar with the health and emotional benefits of breastfeeding for mothers and babies at a time when they are likely to be receptive to this, and before they start to be aware of social barriers. As such an approach based on straightforwardness and logic would seem preferable. Effective education has been identified as being

> "Intellectually honest…...courteous enough to translate the material into the child's logical form"
>
> (Wetton and McWhirter, 1998, p264)

Appealing to children's sense of logic using examples which even very young children can identify with, for example in relation to the provision of milk for other young mammals, would perhaps be an effective starting point in infant feeding education. It appears that, although remaining mindful of the sensitivities of children and parents, it is important that the essential differences between breastfeeding and formula milk feeding are identified. I would suggest that presenting them as 'a tea or coffee choice' (see 10.5) is perhaps as harmful, if not more so, than no teaching at all. In many ways this could be regarded as a form of legitimised formula milk promotion and should be carefully avoided.

99. Separating infant feeding from sex education

I would suggest, based on the anxieties expressed by some children in this research (see 8.2.1) in relation to discussing breasts, and the literature (Mackay, 1995) noting that breasts may be perceived as 'rude', that it is important to keep infant feeding and sex education separate from one another in the school curriculum. Apart from being related to the human lifecycle, their close association in education serves only to confuse attitudes towards breasts and breastfeeding. A difficulty with infant feeding education in schools has been the view that it is a sensitive subject and should be taught with sex education. Whilst I have drawn analogies between the pattern of sex education delivery in the Netherlands and infant feeding teaching this does not suggest that I would consider the two to be linked. Teaching infant feeding in a manner which relates to health and nutrition, rather than reproduction, may focus teaching towards the health implications of different infant feeding methods. In this research the lack of comments from children regarding the nutritional benefits of breastfeeding was observed. This was particularly noted amongst the children of class 6U, who appeared to be aware of several different infant feeding choices, but gave little indication of a deeper understanding of the differences between them.

100. The opportunity to observe breastfeeding

In common with other researchers I would agree that children should have the opportunity to observe breastfeeding. However, my research suggests that this should be undertaken with some care in classroom settings. The responses of children in this research indicates that the justification for enabling children to observe breastfeeding should be to present it as an 'everyday', normal and discrete practice, rather than a means of learning about the mechanisms of breastfeeding. Other research has shown that people, perhaps especially girls, may find observing breastfeeding uncomfortable, and it would also seem to me that putting it 'on show' in a classroom identifies it as 'out of the ordinary' and different. The cumulative effect of 'being shown' breastfeeding, by an unfamiliar person, in a setting which is out of context, may well cause alarm amongst children. Ironically this may be particularly the case for those who have had no contact with the practice before and might most benefit from this new experience. Having said this, there is a lack of opportunity for children to see breastfeeding, either 'live' or in the media, and it was noticeable in this research that many appeared to illustrate partially undressed mothers and very overt breastfeeding. Whilst this openness is very refreshing it is also not reflective of real breastfeeding practice. It may lead to anxieties if they believe that this is how breastfeeding is really conducted, as research with young people and adults has demonstrated that the concept of exposing breasts is a major barrier to feeding. Children need the opportunity to see normal, discrete, breastfeeding in realistic contexts, preferably including a range of families and social settings to which different children can relate. I would propose that video or website based teaching would not only be an effective way to achieve this, but would also create sufficient distance to avoid anxiety. However, it is essential that any interventions are evidence based, and at present research is lacking, and is urgently needed, around this aspect of infant feeding education.

101. Boys and breastfeeding – valuing caring and nurturing

In this research it was noticeable that the boys appeared to be as interested in infant feeding as the girls. Research with young people and adults has suggested that the desire for fathers to be involved in baby care is a barrier to breastfeeding. Interestingly, there has also been the perception in some research that young men do not feel that learning about infant feeding is of relevance to them (see 2.3.2 and 3.1.3). It is therefore of note that my research found that primary school age boys seemed enthusiastic about the subject. I would suggest that this stage of development presents a significant opportunity for enabling boys to consider infant feeding ideas. It is important to identify and value all other aspects of caring for a partner and of nurturing children, so that boys can identify with important family roles other than infant feeding.

102. A role for midwives and health visitors?

As some teachers show reticence regarding infant feeding education it may suggest that the subject should be taught by others, such as midwives or health visitors. Indeed this was mooted to me at one of the schools where I undertook the research. However, I

would propose that the information and approach required by primary school children and that which is appropriate for new parents is entirely different. From the child's point of view I would anticipate that familiarity with the teacher, and child-focussed teaching, are likely to result in effective learning. This would be more likely to occur if the subject was mostly taught by teachers as part of the normal school curriculum. It is also difficult to imagine a situation where enough health professionals would be available to undertake this role. However, it may be that there is potential for health professionals to collaborate with schools and organisations in the design of teaching programmes. In addition, this may be an area of the curriculum in which school nurses could offer a valuable contribution.

2 Enabling children to regard breastfeeding as normal

103. Tackling the prominence of formula milk

This research identified, for the first time, children's in-depth awareness of formula milk feeding. Whilst the public advertising of formula milk for under 6 month old babies is prohibited in the UK it is clear from the data collected here that these products still have a very public profile (McInnes, 2007), even with children, for whom infant feeding has no immediate relevance. Although individual brand names did not feature particularly in children's discussions of formula milk feeding, it was clear that they were very familiar with the concept of formula milk and the paraphernalia that accompanies it. I would speculate that the omnipresence of formula milk products, equipment and images assists in maintaining a public perception of this as normal. Whilst some researchers have argued that advertising does not impact on women's infant feeding decisions (Lee and Furedi, 2005), I consider that this argument misses the point. The issue here, I believe, is in the normalisation of formula milk feeding and its associated goods, and the widespread acceptance of these products born of familiarity. Perhaps by 'de-commercialising' and 'de-normalising' formula milk feeding and its products the perceptions of future generations will be more inclined to regard breastfeeding as normal.

104. Making breastfeeding an everyday activity

In my research it was noticeable that a small number of children appeared to be familiar with breastfeeding and spontaneously identified this as the way in which a baby is fed. The majority of children, especially in Year 1 and Year 3, gave no indication that they had the same understanding. It is possible that children would be far more aware and accepting of breastfeeding if they observed it as an everyday activity – indeed were this the case it would be immeasurably beneficial in promoting and prolonging breastfeeding amongst women too. A number of papers have identified measures which might assist in increasing breastfeeding rates, and crucially, the acceptability of breastfeeding in public. It has been suggested that improving facilities outside the home for breastfeeding

(Protheroe et al., 2003), recent moves towards providing legal protection for breastfeeding mothers in public areas might make it easier for women to breastfeed in public areas (Swanson et al., 2007). As few children in my research appeared to have observed infant feeding, and particularly not breastfeeding, outside the home or school environments. I would agree that changes such as those suggested by Protheroe et al. (2003) may be beneficial. Whilst only one child in the research had observed infant feeding on television this would appear to be unusual compared with other research amongst children and young people where a far greater proportion had done so (3.1.2.4 and 3.2.2.3). As the prevalence of formula milk feeding in television programmes has been documented (Henderson et al., 1999) it is perhaps positive to note that so few children in this research had observed this. However, it is also possible that an important public health education opportunity is being missed. As such I would argue, in common with Henderson et al. (1999), that changes are required in television programmes and films, and in printed media, so that breastfeeding is presented in a positive and beneficial manner. However, changes such as these could be difficult to achieve voluntarily.

105. Finding *a common language for discussing infant feeding*

This research identified language as a problem area when discussing infant feeding. There appeared to be no common, acceptable language with which children could discuss breastfeeding, and a very familiar language and set of euphemisms with which to describe formula milk feeding (see 8.2.3). Ironically, just as bottle feeding is not an accurate description of giving formula milk feeds, breastfeeding does not describe the process of lactation. It would be more precise, and would ease children's understanding and the problem of terminology, if we focussed on the concept of milk rather than receptacle when discussing infant feeding with them. Whilst I am inclined to believe that words such as 'breastfeeding' are correct and should be a normal part of our vocabulary, the fact remains that the children in this study did not seem comfortable about using the term verbally. It was evident that those who had received more recent infant feeding education wrote about breastfeeding more readily than those who had not. Increasing children's familiarity with infant feeding terminology from the earliest years in the primary school might ease discussion of the subject as they mature. Indeed, more feeding orientated rather than sexual perceptions of breasts early in education might also help. More radically perhaps we should be investigating the possibilities for a shared terminology which children, and possibly some adults too, would find more accessible. It is essential that children are central to identifying acceptable breastfeeding terminology for use in infant feeding education, and as such research would be required to investigate their opinions on the subject.

3 Solid foods; a forgotten element in the infant feeding debate

The prevalence of solid foods in children's illustrations was striking (see 8.4.1), and an aspect of their awareness which has not been previously recognised. Whilst this may simply be because solid foods are a very visual, and comprehendible, aspect of feeding for children it is worth noting that early weaning is commonplace and babies often transfer to solid foods prior to the advised age. It may be that there is simply a lack of

education around this area at every stage in life, compounded by lack of support and resources in the postnatal period. Possibly greater controls should also be placed on the wording of advice to parents given on packaging of solid baby foods regarding the appropriate age for commencing solid foods. It would perhaps be helpful for infant feeding education in schools to make some reference to this subject so that children have a base for future learning.

3 'Draw, write and tell' method; suggestions for future research using this approach

1 Original contribution of the 'draw and write' and 'tell' method

In addition to new insights into children's awareness of infant feeding this research has identified a new method for use in research involving children. 'Draw, write and tell' has been developed from the 'draw and write' method used in previous research. This thesis appears to provide the first extensive review of 'draw and write' method literature in the UK since Backett-Milburn and McKie's work in 1999 (see appendix 5). Fifteen new papers, which have been published since 1999, were identified. These have interpreted the method in a variety of new ways, although, as with the earlier studies reviewed by Backett-Milburn and McKie (1999), not all have utilised the visual data, and few have clearly articulated the analysis of the data. However, some points emerged from the literature which provided guidance on effective use of the method. The review of 'draw and write' studies, combined with the literature relating to children's development and research participation, suggested that children's verbal interpretations of their work are essential. As such 'draw, write and tell' was developed for use in this research. The title 'draw, write and tell' clearly demonstrated that child interpretation was integral to the research method, rather than an 'add on' element.

Whilst this study was not unique in identifying problems associated with analysis of 'draw and write' data, it does offer a new approach to this aspect of the research. The use of a 'commentary' to bring all the data together, meant that the artistic, written and verbal elements were combined, and none became surplus to requirements. In particular this method did not restrict the exploration of the data to either a review of broad themes or a content analysis, but sought to achieve an effective compromise reflecting the content as well as the meaning of the children's work.

The use of storytelling, especially a shared storytelling scenario between researcher and participants, has not previously been used in 'draw and write' based research. This would appear to be a useful method of assisting children to identify the context of the research subject, and is perhaps most helpful where it relates to areas of experience which may be abstract or peripheral to their lives.

‘Draw, write and tell’ also proved to be effective in enabling children from a range of age groups to participate in research and, crucially, generated data which could be easily compared despite differences in ages. Other methods, which are solely written or verbal may be more limited in the age groups for which they are suitable. The children involved in this research ranged from five to eleven years old, but despite a wide age range they appeared to understand the method and find the ‘draw, write and tell’ activity acceptable and enjoyable[110].

2 Using ‘draw, write and tell’ in future research

The ‘draw and write’ method has been used in child-focussed research to explore many different issues in a variety of settings. It has been interpreted in many ways, and its application during the last 30 years has frequently reflected the research practices of the time, with a gradual move towards a generally more child-centred approach. Based on my review of the literature, and experience of conducting research using an adaptation of ‘draw and write’ I have identified several key aspects which researchers may consider.

The apparently subtle, but fundamentally important, adaptation of ‘draw and write’ into ‘draw, write and tell’ firmly identifies child self-interpretation as an essential element in the method. Other studies, even those conducted recently (Franck et al., 2008) have not included children’s own verbal interpretations. Especially when working with younger children, or those with special educational needs, I would argue that this is essential because their ‘write’ data contribution may be limited. In my research vital information was gained during the ‘tell’ part of the data collection, which illuminated the children’s work and added a level of insight which would otherwise have been entirely absent. The problems in interpreting work where the verbal data were limited highlighted the importance of ‘telling’, in the method. In addition I would argue that it is important that the child is given the opportunity to ‘tell’, and is not formally questioned, so that comments arise naturally as a continuation of their artistic thought processes. It is recognised that in a noisy classroom, and with many distractions, some children may need a small amount of encouragement in order to focus and offer verbal interpretation of their work. In addition, I would suggest that the ‘tell’ element of the research is so important that teaching support is essential to ensure that the researcher can focus on individual children at this point in the research.

A review of the existing literature identified that many researchers’ have not used children’s’ drawings in their analysis of the data, or have used them only for illustration of key points (see appendix 5). Whilst analysis has clearly been an issue, it would seem to me to be essential to respect the illustrations produced by children, and to utilise them as a fundamental part of the data. I hope that the development of a ‘commentary’ as used in this research may provide a useful tool for analysing other ‘draw, write and tell’ data.

The issue of analysis raises the question of sample sizes. It is clear that in many previous studies the sample sizes used have been so large as to preclude meaningful, or indeed any, analysis of children’s drawings. I would suggest that whilst researchers may

need to analyse a number of drawings in order to identify common themes, care should be taken to ensure that the data can still be analysed appropriately and respectfully.

4 Suggestions for further research

Several areas of potential future research were identified during the course of this work. Primarily, it appears that there is a need to research appropriate educational interventions relating to infant feeding. Bearing in mind my earlier comments regarding school based teaching of the subject, it would appear that care should be taken to avoid activities, imagery and language which children may find unsettling or out of context. I would propose that a collaborative approach to the development of educational materials in which children take the lead, may help to reduce some of the dissonance between adult's and children's infant feeding sensitivities.

This study revealed a mixed response from school staff to both the concept of research and to the subject of infant feeding. Other researchers have identified anxieties among teaching staff regarding breastfeeding education (Dykes, 2003). It would therefore seem essential that research is undertaken to identify the opinions of male and female teachers relating to infant feeding, their feelings about teaching the subject and their training and support needs.

The literature reveals a surprising lack of research regarding the concurrence between parent/child views of infant feeding, even amongst participants where both parties are adult. Whilst Russell et al. (2004) asked mothers for information regarding their child's infant feeding experiences, the research did not capture the attitudes of those of their extended family. A more concrete understanding of the relationship between children's views and family infant feeding culture may help focus the development of education around this subject. Understanding parental views may also minimise the potential for concern and dissent regarding teaching of this subject in schools.

The 'normality' of formula milk feeding was an inescapable aspect of the children's contributions in this research. Henderson et al. (1999) identified media representations of formula milk feeding, and this has also been studied in relation to children's picture books (Altshuler, 1995). I suggest that a review of images and references to formula milk and feeding bottles in children's everyday lives would be of value. Whilst constant references to formula milk in society may, or may not, affect parental choices, I am inclined to believe that their prevalence presents with an impression of 'normal' infant feeding which does not favour breastfeeding. This has perhaps been overlooked to date in the ongoing debates around formula milk advertising and images. Whilst it may be very difficult to force the 'formula milk genie' back into its bottle, reducing the visibility of formula milk feeding in our culture may be a vital step in minimising its role in infant feeding.

5 Final thoughts

Infant feeding education is perhaps not usually associated with primary school children. Indeed, it is understandable that it may be seen as entirely irrelevant to them. I was not certain, prior to commencing this research, how much interest the participating children would have in the subject, and was concerned that they might struggle to illustrate complex ideas in this sensitive area. However, the majority of the participants were keen and enthusiastic about the research activity, regardless of their awareness of infant feeding, and produced a wealth of varied and thought provoking work. The data, once analysed, demonstrated the range of the children's awareness of infant feeding, but perhaps also served as a 'barometer' of the prevailing infant feeding 'landscape' to which they were exposed. Some children illustrated breastfeeding, either because it was familiar and normal for them, or because they had been influenced by infant feeding education in school. Indeed, for a few it was possible to say that this was a 'taken for granted' activity. However, for the rest this was not the case, and the prevalence of illustrations of formula milk feeding and infant feeding bottles amongst children of all ages was striking. This may reflect the vast number of references to formula milk and feeding bottles in children's everyday environments; in public areas, shops, television, and other forms of popular culture and media. What was perhaps even more disconcerting was that the children in this research did not identify any differences in the health benefits between breastfeeding and formula milk feeding, or recognise differences between the two. For a large proportion of children formula milk feeding was clearly perceived as 'the norm'. I would suggest that there appears to be potential to promote health by increasing awareness, and acceptance, of breastfeeding through public health education in primary schools. As other researchers have identified (Dyson et al., 2006), any initiatives need to be part of a multifaceted approach targeting different aspects of infant feeding. Working in primary schools presents a unique window of opportunity within which to tackle some of the underlying and deep seated barriers which often thwart later attempts to promote breastfeeding.

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Appendices

Appendix 1 ‘Draw, write and tell’ data – please see volume 2

Appendix 2 Young people and infant feeding

Authors	Title	Design and analysis	Age	Sample size	Findings
Allen, C. (2008)	PSHE education on infant feeding: influencing young people's views (British Journal of School Nursing, vol 3, no 7, p331-337)	intervention and focus groups	15/16	one class	Young people receptive to teaching. Issues around lack of positive exposure of breastfeeding. Breasts taboo. Not enough info on risks of formula milk. Teaching in primary schools of importance.
Bailey J., Shepherd, R. (2007)	An intervention to improve adolescent's views on breastfeeding (Health Psychology Update, 2007)	report of an educational intervention	14/15	80	Little information about young people's pre-intervention awareness but interesting as focussed only on young women.
Connolly, C. (1998)	Attitudes of young men and women to breastfeeding (Irish Medical Journal, vol 9, no 33, p88-89)	focus group	15/16?	177	Identified belief that breastfeeding is best due to naturalness, bonding, nourishment.
De-Gale, J. (1995)	Promoting breastfeeding in schools. (Health Visitor, 68,11)	Health promotion activities in schools, including 'live' breast-feeding, followed by question-naire	15/16	116	Young people mainly influenced by parents. Many unfamiliar with breastfeeding. Positive impact noted, although lack of data fom before intervention. Recommend targeting 12/13 year olds.
Giles, M., Connor, C., McClenahan, C., Mallert, J., Stewart-Knox, B., Wright, M. (2007)	Measuring young people's attitudes to breastfeeding using the theory of planned behaviour. (Journal of Public Health, vol 29,no 1, 17-26)	focus group and questionnaire, analysis based on theory of planned behaviour	13/14	48	Almost half had seen breastfeeding, usually family members. Small number on TV. Those who hadn't seen it found it hard to comment. Understand that breastfeeding better for mum and baby, in terms of health and bonding. Only 58% realised breastfeeding is sufficient for needs. Breastfeeding seen as convenient. Problem with public breastfeeding. Lack of knowledge of breastfeeding.

Gostling, L. (2003)	Breastfeeding through the eyes of a teenager (MIDIRS Digest vol 13,no 4)	questionnaires via school intranet	12-15	217	Students were more likely to have seen bottle fed than breastfeeding babies. Most observation of breastfeeding was of a member of the family. 92% felt that breastfeeding was natural, but few found it to be 'modern' or 'convenient'. Some recalled seeing posters about breastfeeding or pop stars breastfeeding in the media. The majority of students felt that breastfeeding should only be undertaken at home.92% felt they had had no teaching in school on the subject, but that it would be beneficial at a younger age.
Greene, J., Stewart-Knox, B., Wright, M. (2003)	Feeding preferences and attitudes to breastfeeding and its promotions among teenagers in Northern Ireland (Journal of Human Lactatation, vol 19, no 1, 57-65)	Question-naires	14-18	419	47% had seen breastfeeding, only 16% breastfeeding mother was unknown to them, 7% seen on TV. Those who had been breastfeeding themselves were more positive about the practice. High levels of embarrassment about public feeding, especially amongst girls. 71% had not received education on subject and a high proportion would like to.
Gregg, J. (1989)	Attitudes of Teenagers in Liverpool to breastfeeding (British Medical Journal, 15 July, 299, p.147-148)	Question-naire with free space for comments	14/15	400	18% had been breastfed themselves. Most had seen a bottle feed, minority had seen breastfeeding. Most positive influence on view of breastfeeding was positive personal observation. Embarrassment was major factor for not wanting to breastfeeding. Public feeding is an issue. Young people positive

					about learning in school.
Lockey, R., Hart, A. (2003)	Addressing inequalities in health: The breast benefits project (British Journal of Midwifery, vol 11, no 5, p281-285)	focus group	13-15		Research to assess young people's attitudes as basis for development of an educational pack.
Mackay, D. (1995)	Attitudes of school young people to breastfeeding (in New Generation Digest, March 1995)	Question-naire	10/11 and 17/18	117 primary, 305 total	61% primary young people seen breastfeeding, 88% had seen AF. More young people observed breastfeeding in affluent rural area. Difference between boys and girls in knowledge or acceptability of breastfeeding. 9% had received IF teaching in school.
Purtell (1994)	Teenage girls' attitudes to breastfeeding. Health Visitor, 67(5), 156-157.	Question-naire			Young women make future infant feeding decisions based on social/ family attitudes rather than facts.
Swanson, V., Power, K., Kaur, B., Carter, H., Shepherd, K (2006)	The impact of knowledge and social influences on adolescents' breast-feeding beliefs and intentions (Public Health Nutrition, vol 9, no 3, p297-305)	questionnaire, analysis used reasoned action framework	11-18	496	Social barriers to breastfeeding moderated the relationship between knowledge and beliefs. Breastfeeding beliefs affected more by parental norms than by peer norms. Knowledge and social influences are most important factors.

Appendix 3 Children and infant feeding

Authors	Title	Age	Sample size	Design	Analysis	Conclusions
Mackay, D. (1995)	Attitudes of school children to breastfeeding (New Generation Digest, March 1995)	10-11	117	Comparison of primary and secondary pupil's attitudes to breastfeeding. Questionnaire approach.	No information regarding data management. Simple percentages applied to 13 questions.	Very few children had received lessons on breastfeeding. 61% had observed breastfeeding, compared to 88% who had seen formula feeding. Some knowledge but also a higher rate of misconceptions than secondary school pupils. 60% wanted their baby to be breastfed, but small numbers who had received education meant that it was not very meaningful to compare breastfeeding 'plans' of this group with those who had had no breastfeeding education.
Russell, B., Richards, H., Jones, A., Hoddinott, P. (2004)	Breakfast, lunch and dinner' Attitudes to infant feeding amongst children in a Scottish primary school. A qualitative focus group (Health Education Journal, vol 63,no 1)	6	23	Focus group of children discussed and drew pictures regarding breastfeeding, volunteer mother breastfed in classroom.	Children's pictures analysed but no details given about the mechanism for this, or the links made between visual data and oral/observation data. Theme analysis used.	Children enthusiastic about subject. Predominance of formula milk/bottles. Many misconceptions about breastfeeding. Lack of common language around breastfeeding. Perception of breastfeeding as private. Clear recollections of infant feeding scenarios in media. Breastfeeding not perceived as a normal activity, but children interested in subject. Researchers acknowledged limitations of work and suggested a more comprehensive study should be undertaken.

Appendix 3 Infant feeding educational interventions with primary school age children

Author	Intervention	Nature of intervention	Conclusions of authors
Dykes, F. (2004)	Infant feeding practice: A report evaluating the breastfeeding practice projects 1999-2002. (London: Department of Health)	Breastfeeding education project review which identified work in primary school undertaken by Kirkham in 2002. This involved a teaching session linked to citizenship	Very difficult to gain access to primary schools as breastfeeding perceived as relating to sex education. Identified that breastfeeding did not have a place, in its own right, in the National Curriculum.
Macleod, K. (1997)	Taught about breastfeeding in school (Primary Health Care, vol 7,no 9)	Information about breastfeeding pack produced for primary schools in Norfolk.	None
Wells, B (2003)	’Babies project’ (Midwifery Matters, Issue 98)	Teaching activity run by midwives for primary age children	Perception that children regard breastfeeding as rude and are concerned about public breastfeeding.

Appendix 5 ‘Draw and write’ literature

Authors	Title	Place	Ages	Study size	Method	Analysis	Key points relat to method
Backett-Milburn, McKie (1999)	A critical appraisal of the draw and write technique (Health Education Research, 14,3)	various	various	various	Review of studies using draw and write from UK and overseas prior to 1999	This was a review not original research.	Identification some of the issu and benefits of and write. Name the dangers of assuming that a children will l and be competen drawing. Howeve provides a mean appreciating children’s soci worlds, and can limit the adult top-down childr research approa It can reduce s of the issues o communication a language. It is however importa allow self interpretation drawings. Highl analysis issues
Backett, Alexander (1991)	Talking to young children about health; methods and findings (Health Education Journal, 50, 34)	home	4-12	52	Drawings prepared by children in advance on the subject of staying healthy. Interview to discuss drawings in the home.	Interviews transcribed. Drawing used as a discussion point and not analysed.	Discussion of drawing helped develop rapport Noted that rese methods need to children’s view the world and ’ of reference’. Interviews and drawings elicit different data.
Bendelow, Williams, Oakley (1996)	It makes you bald: children’s knowledge and beliefs about health and cancer prevention (Health Education, 3)	school	9-10	100	Children asked to write and draw anything that they thought would make them healthy.	Limited discussion regarding analysis. Categories appear to have been based on text and pictures but the mechanism for this is unclear.	Children enjoye doing drawings. Children felt enabled to disc issues raised b research.
Bradding, Horstman	Using the draw and	hospitl/	6-10	99	Comparison of healthy and	Content of pictures	Children appear enjoy the exerc

(1999)	write technique with children (European Journal of Oncology, 3, 3)	school			chronically sick children. Draw and write about hospitals and health professionals .Prompt used regarding people involved in care of children in hospital.	checked with children. Pictures and interviews analysed. Face value information used from pictures. Data coded and categorised.	Detailed informa given, painstak analysis. Felt have been an unstressful meth for the childre involved.
Box and Landman (1994)	Children who have no breakfast (Health Education, 4)	school	5-8	900	Children asked to draw all the things they did before going to school. Individual interview.	No discussion of analysis.	No comment rega method. Noted th some children ma exaggerate consumption.
Byrne (1999)	Health wealth and honesty: perceptions of self esteem in primary age children (Health Education, 99, 3)	school	9-10	32	Children asked to draw someone with low and someone with high self esteem	No details about analysis of data. Results qualitative and quantitativ e	No comment abou method impact o research.
Carahar, Baker, Burns (2004)	Children's views of food and food preparation (British Food Journal, 106, 4)	school	8-10	82	Children asked to draw a meal on a paper plate for an imaginary alien, also to draw a picture of cooking at home and write a story about cooking.	Pictures analysed for content and placed in emerging categories. Text and analysed using NUD*IST words describing art.	Concern from researchers tha children may ha selectively answ based on what th thought researc wanted to hear.
Charlton (1979)	A penny for your thoughts: pupil's concepts of cancer (Journal				unavailable		

	for the Institute of Health Education)						
Charlton (1981)	She'll die won't she Miss? (Cancer Nursing Update)				unavailable		
Eiser, Patterson (1983)	Slugs, snails ad puppy dog tails' Children's ideas about the inside of their bodies (Child, care, health and development, 9)	school	6,8,10, 12	96	Children asked to draw the inside of their bodies and answer questions.	Drawing analysed by content, quantitative.	Children found reluctant to dra their bodies an responded bette discussion.
Franck, Sheikh, Oulton (2008)	What helps when it hurts? Children's views on pain relief (Child care Health and Dev, 34,4)	hospital	4-16	71	Children and young people asked to draw and/or write about things that help their pain. No interviewing or discussion.	Drawings and writing coded and categorised separately. Thematic analysis. No interview data. Detailed explanation of analysis.	Method successfu eliciting data, that chronologi age is not indicative of developmental a
Gabhainn, Kelleher (2002)	The sensitivity of the draw and write technique (Health Education, 102, 2)	school	8-10	557	Draw and write to picture 'things that make me healthy' and 'keep me healthy' conducted in class. Free drawing exercise.	Short description of drawing, which was then coded into predetermined categories. Data not interpreted beyond the text provided by the participants.	Girls drew more pictures and presented pictu falling into mo categories amon one group in th study. Care tak not to 'over interpret artwo
Hadley,	Children's	school	5-11	134	Children	Content	Children's

Stockdale (1999)	representations of the world of drugs (Journal of Community and Applied Social Psychology, 6,4)				asked to draw and write responses to questions about a story relating to losing and finding a bag of drugs.	analysis, qualitative and partially quantitative.	expressions of and uncertainty identified in children's draw
Hendry (1995)	Pilot study of the draw and write method to ascertain the reasons behind the consumption of fruit and vegetables in children aged 7 to 9 years (Department of General Practice and Primary Care, University of Aberdeen)				This is referred to only by Backett-Milburn and McGie. It appears to be unpublished, Aberdeen University have been unable to supply a copy.		
Hill, Laybourne, Borland (1996)	Engaging with primary age children about their emotions and well-being: methodological considerations (Children and Society, 10)	school/ home	5-12	28	Children asked to draw a child and show an emotion, with a writing element used as part of a study of methods involving several methods. Focus groups and interviews.	No clear analysis of how drawing were utilised.	General comment about the usefu of child centre techniques.
Horstman, Aldiss, Richardson, Gibson (2008)	Methodological issues when using the draw and write technique with children	hospital/ home	6-12	17	Children asked to draw a picture showing what was important to them during their treatment for	Pictures and words taken at face value, and meaning checked with children.	Children found technique acceptable. Com about analysis other research method in relat to this.

	aged 6 to 12 years (Qualitative Health Research, 18)				cancer. In depth interview	Children's comments and picture content analysed systematically for content, categorisation and thematic analysis. No further details of analysis given.	
Horstman, Bradding (2002)	Helping children speak up in the health service (European Journal of Oncology Nursing, 6,2)	hospital/ home	6-10	99	Comparison of healthy and chronically sick children. Draw and write about hospitals and health professionals.Prompt used regarding people involved in care of children in hospital.	Content of pictures checked with children. Pictures and interviews analysed. Face value information used from pictures. Data coded and categorised.	Further discuss of method in Horstman et al. 2008.
MacGregor, Currie, Wetton (1998)	Eliciting the views of children about health in schools through the use of the draw and write technique (Health Promotion International, 14,4)	school	8-12	334	Children given 4 drawing spaces with separate instructions for each drawing, and were asked to draw and write about what they did to keep healthy and about healthy schools.	Only written data were analysed, although the broad categories included in the pictures were noted. Data quantitatively analysed. Data sorted by themes.	Proscriptive de and expectation considerable le of writing to accompany drawi Noted need for consistency in approach and is regarding conferring.
Mauthner, Mayall, Turner (1993)	Children and food in the primary school (Institute of	school	5-9	29	Children undertook drawing, food diaries, stories, games,	Main features of picture content identified, i.e.	Discussion focu on subject area little comment about method.

	Education)				discussion and focus groups centred on food.	objects, people listed. NUD*IST used to analyse this content with words from pictures and discussions.	
McWhirter, Collins, Bryant, Wetton, Newton Bishop (2000)	Evaluating 'Safe in the Sun' a curriculum programme for primary schools (Health Education Research, vol 15,2)	school	5-6, 7-8 and 9-10	998	Data collected using 'draw and write' prior to educational intervention aimed at promoting sun safety. Follow up 'draw and write' to assess increased awareness amongst children. 'Draw and write' method structured into 6 'invitations' around specific issues	Data used qualitatively and quantitatively. Only written statements were analysed (with the exception of one small aspect of data). Data divided into 'helpful' and 'unhelpful' sun safe behaviours for quantitative analysis, Children's comments and art examples used for qualitative illustration of points of interest.	Researchers perceived detai given to be gre and misconcepti more easily discovered than found when usin closed question interview. Chil provided with prompts in form 'draw and write invitations, wh maintained focu Method was valu aspect of this research.
Mulvihill, Rivers, Aggleton (2000)	A qualitative study investigating the views of primary age	school	5-11	60	Draw and say' children asked to draw themselves doing a favourite sport	No comment regarding analysis of art, although some broad themes	No comment on method.

	children and parents on physical activity (Health Education Journal, vol 59,2)				activity and then interviewed . Parents interviewed.	appear to have been identified in the artwork. Analysis appears to have focussed on interview analysis. Themes identified.	
Newton Bishop, Collins, Hughes, Altman, Bergman, Breitbart, de Stavola, Elvers, Gylling, Koopman, Marks, Martin, Osterlind, Wetton (1997)	What do children aged 5 to 11 years old know about the sun and skin cancer? The practical difficulties of international collaborative research when analysis of language is involved (Melanoma Research, vol 7, 5)	schools	5-11	3498	Comparison of draw and write amongst children from 6 countries	Analysis of pictures and text. Use of theme analysis. Very large sample.	Comparisons betw countries led to methodological issues based on differences in language and cr comparison.
Oakley, Bendelow, Barnes, Buchanan, Husain (1995)	Health and cancer prevention: knowledge and beliefs of children and young people (BMJ, April 22, 310 (6986))	school	9-10	100	Children were asked to draw pictures relating to things which made people healthy or unhealthy, followed by interviews and group discussion (see Bendelow et al. 1996)	Quantitative analysis on the population characteristics of group. Group discussions transcribed and themes identified. Pictures used for illustrative purposes	The method was a valuable elemen illustrating th quantitative findings and providing conte
Paxton, Finnigan, Haddow, Allot,	Drug education in primary schools:	school	9-10	1428	Draw and write as learning needs	No analysis of individual draw and	No comment rega method.

Leonard (1998)	putting what we know into practice (Health Education Journal, 52,2)				assessment.	write.	
Porcellato, Dugdill, Springett, Sanderson (1999)	Primary school children's perceptions of smoking: Implications for health research (Health Education Research 14, 1)	school	4-8	676	Draw and write, with subset of 50 children having in-depth interview.	Content analysis based on written contributions and interviews.	Researchers saw 'draw and write being appropria for large scale study.
Pocelatto, Dugdill, Springett (2005)	A longitudinal study exploring Liverpool primary schoolchildren's perspectives on smoking. Childhood, 12(4),	school	4-8	676	Same method as Porcellato et al., 1999.	see Porcellato et al., 1999	see Porcellato al., 1999
Pridmore (1996)	Visualising Health (Institute of Education)				Full text unavailable, Pat Pridmore no longer has copy available	See Pridmore and Bendelow (1995)	
Pridmore, Bendelow (1995)	Images of health: exploring beliefs of children using the 'draw and write' technique (Health Education Journal, 54)	school	9-10	100	Children asked to draw and write around several aspects of health, written answers and discussion followed. Researched in UK and Botswana. Only UK data used here.	Pictures, text and discussion analysed by categories. Little detail given regarding analysis. Researchers noted that many pictures were self explanatory	Children appear enjoy participa Some instructio and numbering p printed on draw paper. Comment regarding owner of drawings. Is of confidential consent and educational additional need discussed.

						but some were more abstract and difficult to analyse. Data analysed at face value not protectively.	
Pridmore, Lansdown (1997)	Exploring children's perceptions of health: does drawing really break down the barriers? (Health Education Journal, vol 56,3)	school	9-10	126	Children allocated to draw and write, label and write or write only groups, and asked to provide information about a healthy child and an unhealthy child. Children allocated 20 mins for exercise.	Analysis method appears to include pictures, although only information which is also in text. Data were lost when children did not explain their drawings fully. Categories identified by analysis.	Draw and write provided more information abou how children's were linked together. Label write offered m factual informa Write only meth was quickest. S children prefer to draw and lab rather than dra write. Emotiona content of draw was lost unless children expres it in words. Drawings helped where handwriti was indecipher
Russell, Richards, Jones, Hodinott (2004)	Breakfast, lunch and dinner': Attitudes to infant feeding amongst children in a Scottish primary school. A qualitative focus group study (Health Education Journal, 63,1)	school	6	23	Children asked to draw a picture of a new baby being fed, and these were discussed in focus groups.	Children's pictures analysed but no details given about the mechanism for this, or the links made between visual data and oral/observation data. Theme analysis used.	Unstructured qualitative app enabled childre view to be obta Variation in children's willingness to participate. Researchers not limitations of study in terms size, location age range and suggested furth research was required.
Smith, Callery	Children's accounts of	home	7-11	9	Children asked to draw	Interviews and words	No comment rega the method by t

(2005)	their perioperative information needs (Journal of Clinical Nursing, 14,2)				and/or write about their expectations of hospital. Discussion followed the drawing exercise.	transcribed, no comment about the analysis of the pictures. Theme analysis used.	researchers.
Wetton (1972)	unknown				This is referred to by several researchers, but never referenced. Referred to in Wetton 1999.		
Williams, Wetton, Moon (1989)	A way in: five key areas to health (Health Education Authority)	school	4-8 8-11	9584 13020	Children asked to do ’draw and write’ covering 5 key areas, safety, relationships, eating, drugs, exercise.	Drawings not analysed. Text used quantitatively.	Drawings used o for illustrativ purposes.
Woods, Springett, Porcelato, Dugdill (2005)	Stop it’ It’s bad for you and bad for me: experiences and views on passive smoking among primary school children in Liverpool (Health Education Research, 20,6)	school	4-8	250	Children asked to draw how they would feel in a room of smokers and write what they would say to the smokers. Then individually interviewed on a range of predetermined issues. Longitudinal study 5 years	Interviews analysed. Pictures used to illustrate points raised. No comment about analysis of pictures.	No comment abou method or effic

Appendix 6 Initial letter to schools

BOURNEMOUTH UNIVERSITY HEADED PAPER

Institute of Health and Community Studies,

Bournemouth University,

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Royal London House,
Christchurch Road,
Bournemouth.
Tel: 07803 628958
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Address

Date

Dear

I am writing to you regarding an interesting research study which is currently taking place in Hampshire. This research explores primary school children's views about how babies may be fed. It is being undertaken as a PhD and is funded by Bournemouth University.

Several schools have already taken part in the research. Your school was not approached initially because another school in your locality had already expressed an interest. However, due to unforeseen circumstances it has not been possible to follow this through and I am now urgently in need of assistance from an additional school in the area in order to successfully complete the research. I therefore apologise for contacting you so late in the school year and would be extremely grateful if you might be kind enough to consider discussing this research with me further.

To research this issue I am asking children in Year 3 and Year 6 (and Year 1 in infant schools) to view a simple pictorial story about a hungry baby, and then produce a piece of "draw and write" artwork to complete the story. Ten children in each group are then asked if they would be happy to briefly discuss their artwork with me. The whole exercise, including individual discussions, takes approximately 45 minutes for each year group. As I understand it, children in these age groups would be considering nutrition choices, health and well-being, and this has good links with PSHE work around "Developing a safe, healthy lifestyle". Children's awareness in this subject area has never been explored, and this research may be valuable in developing our understanding of how childhood experience affect future infant feeding behaviour.

I am a practicing midwife and a PhD student. My research is being supervised by Professor Jo Alexander of Bournemouth University, who is also a midwife and a researcher in the field of maternal and infant health, and Dr Jane Hunt who is a lecturer and specialist paediatric nurse. The research has been subject to stringent ethical consideration and has been approved by the Local Research Ethics Committee. The identities of individuals and schools involved will be anonymous.

In addition to the research exercise I have also spent a little time at the beginning of each

session discussing the role of midwives and the concept of research. All the schools involved have found this a useful aspect and it appears to have been interesting for the children. The exercise itself has been well received by children so far and has generated some thought provoking artwork and lively discussion amongst the children.

Thank you for reading this letter. I hope you will not mind if I contact you shortly to ask whether you would like to discuss the research in more detail.

Yours sincerely,

Miss Catherine Angell (BSc, BA, RM)
Professor Jo Alexander (PhD, MTD, RM, SRN)

Appendix 7 Picture boards (1 of 4)

Appendix 7 Picture boards (2 of 4)

[pic]

Appendix 7 Picture boards (3 of 4)

Appendix 7 Picture boards (4 of 4)

[pic]

Appendix 8 Letter to parents/permission form

Dear Parent/Guardian,

……. Primary School is taking part in a research project run by Bournemouth University. This will be looking at children's awareness of infant nutrition. This research will provide valuable insights into the understanding that children have about infant feeding, and may assist in the development of health education around this subject in the future.

I would like to ask whether you will give permission for your child to participate in the activities involved in this research. The work that the children will be doing is designed to be interesting, stimulating and enjoyable. It comes under the part of the National Curriculum taught in schools for this age group "Developing a safe, healthy lifestyle", which includes consideration of diet.

With their usual teacher the class will be looking at a short picture story showing a hungry baby. They will then be asked to use artwork to continue the story. Children whose parents have consented to their participation in the research may then be asked whether they would like to talk individually with me (Catherine Angell) about their artwork. This discussion would last for a maximum of 5 minutes and would take place in a designated quiet area of the same classroom. I will be asking the children to describe what they have drawn and ensure that I have correctly understood their ideas. The children will be complimented on their artwork, which I know will be very thoughtful and interesting. Children will be asked individually for their consent before any discussion. I may also make observational notes of dialogue between these children during the art activity where this is relevant to the topic. With their permission, the art work of the children taking part in the research will be copied and returned to them at the end of the teaching session.

The findings of the research will be presented in a PhD thesis and submitted to appropriate academic journals. The schools, classes and children involved will be anonymous, as will all the artwork, children's discussions and any notes taken during the session.

Should you decide that you do not wish your child to take part in the research your child's education will not be affected in any way. If you consent now you may still withdraw your consent in the future if you choose to, I would just need to have a description of the art work to enable me to identify and withdraw your child from the research.

The research will be conducted by myself, and will contribute towards a PhD. In addition to undertaking research I am also a practicing midwife and have enhanced CRB (Criminal Records Bureau) clearance, as required for people working with children. I have experience of working with children of this age group and also have children aged 7 and 9 who attend a different local school. This research is being supervised by Professor Jo Alexander from Bournemouth University, who is also a midwife and a researcher in the field of maternal and infant health.

I would be most grateful if you could complete the attached form and return it to the school in the envelope provided by Wednesday 13th February 2008). If you would like any further details about this research I would be very happy to discuss it with you (please see telephone number below).

Thank you very much for considering this,

Catherine Angell (BA, BSc, RM Registered Midwife) (Research Student)
tel: 01202 962053 email : cangell@bournemouth.ac.uk
Professor Jo Alexander (PhD, MTD, RM, SRN) (Research Supervisor)
tel: 01202 967360 email : jalexand@bournemouth.ac.uk

HEADED PAPER

Please indicate whether you consent for your child to be involved in the following aspects of this research:

1. **Observation of the artwork activity by the researcher**

   I **do/do not** consent to the researcher observing and taking notes of comments made by my child which are relevant to the artwork activity.

2. **Participation in a brief one-to-one discussion about the artwork with the researcher**

   I **do/do not** consent to my child discussing their artwork with the researcher

3. **Possible inclusion of anonymous artwork, anonymous observational notes and anonymous quotes from one-to-one discussion in a PhD thesis/academic papers .**

   I **do/do not** consent for my child's artwork/quotes to be anonymously included in a PhD thesis/academic papers

Name of child_____ Year group _____

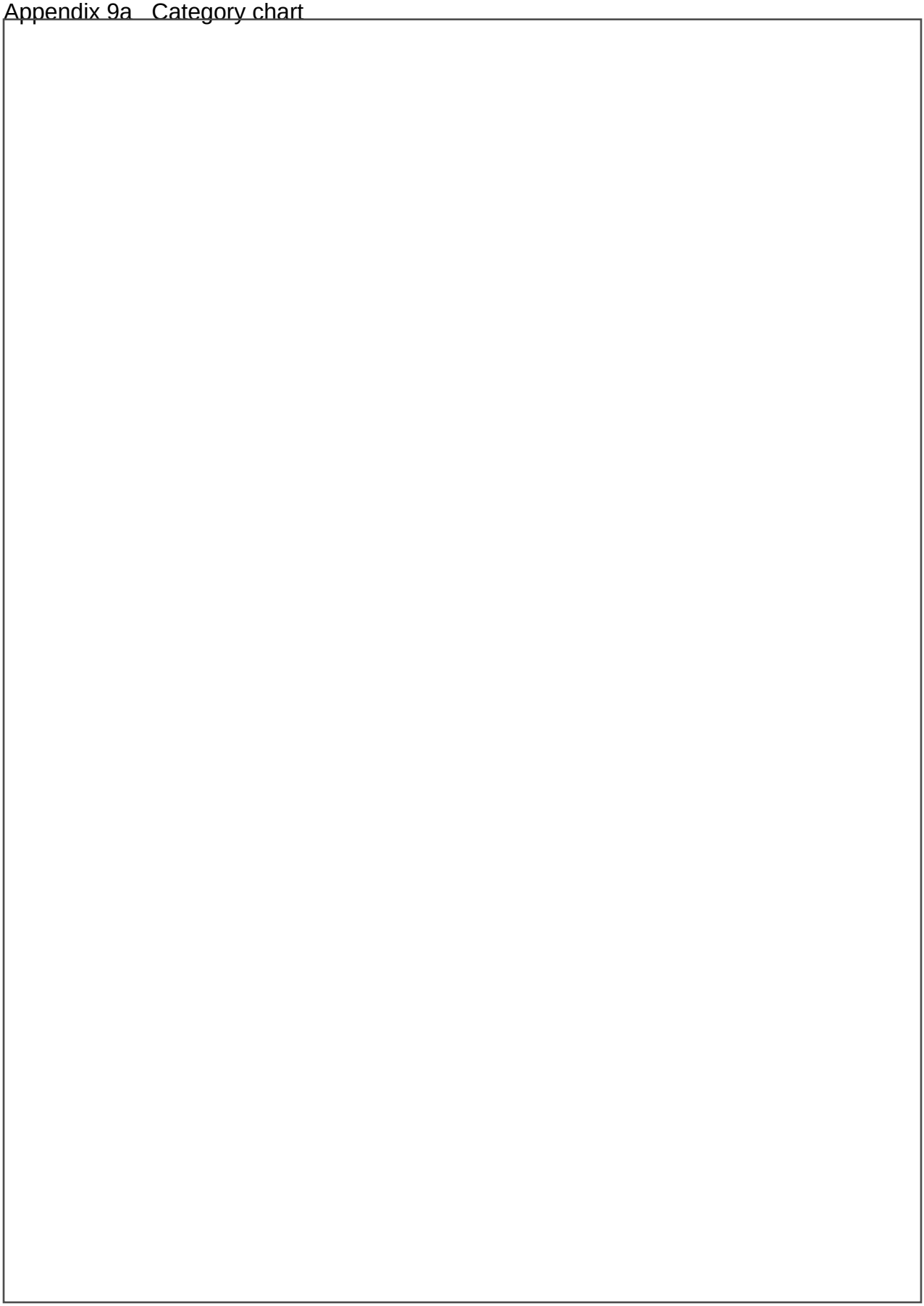
Name of parent/guardian_____ Signature_____

Please return to the school in the enclosed envelope by Wednesday 13th February 2008

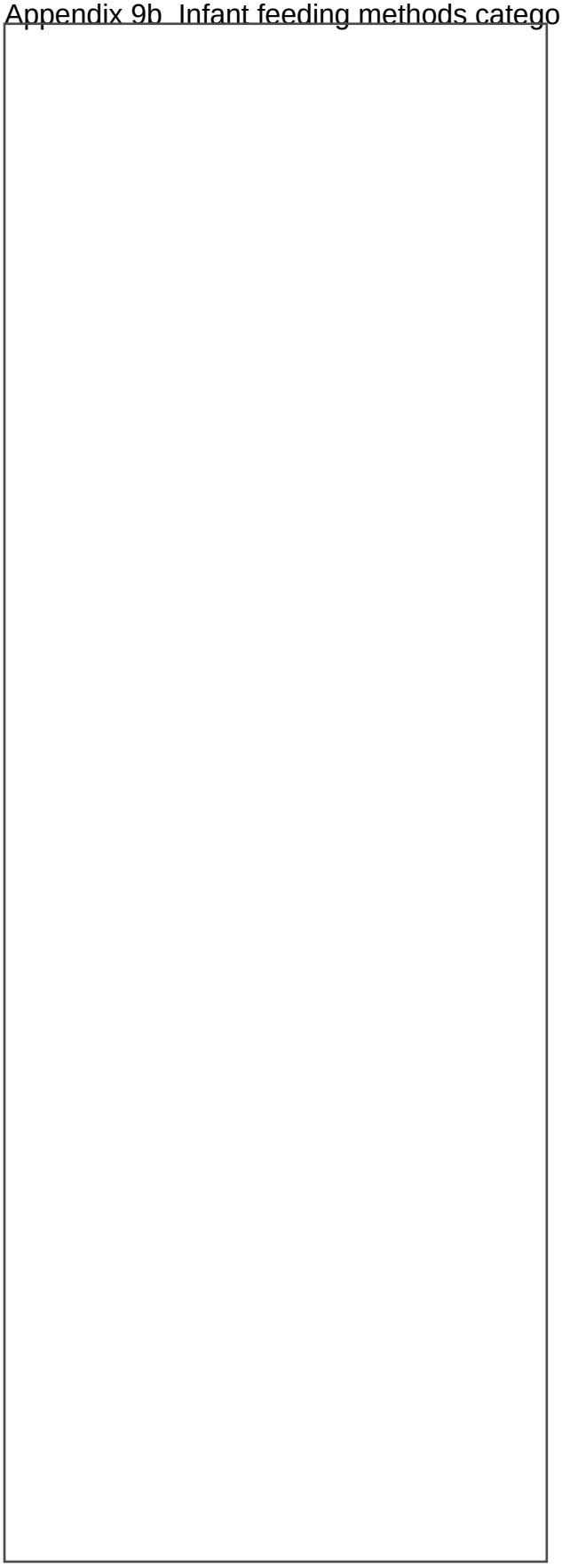
Thank you for taking the time to read this letter.

Catherine Angell (BA, BSc, RM Registered Midwife) (Research Student)
Professor Jo Alexander (PhD, MTD, RM, SRN) (Research Supervisor)

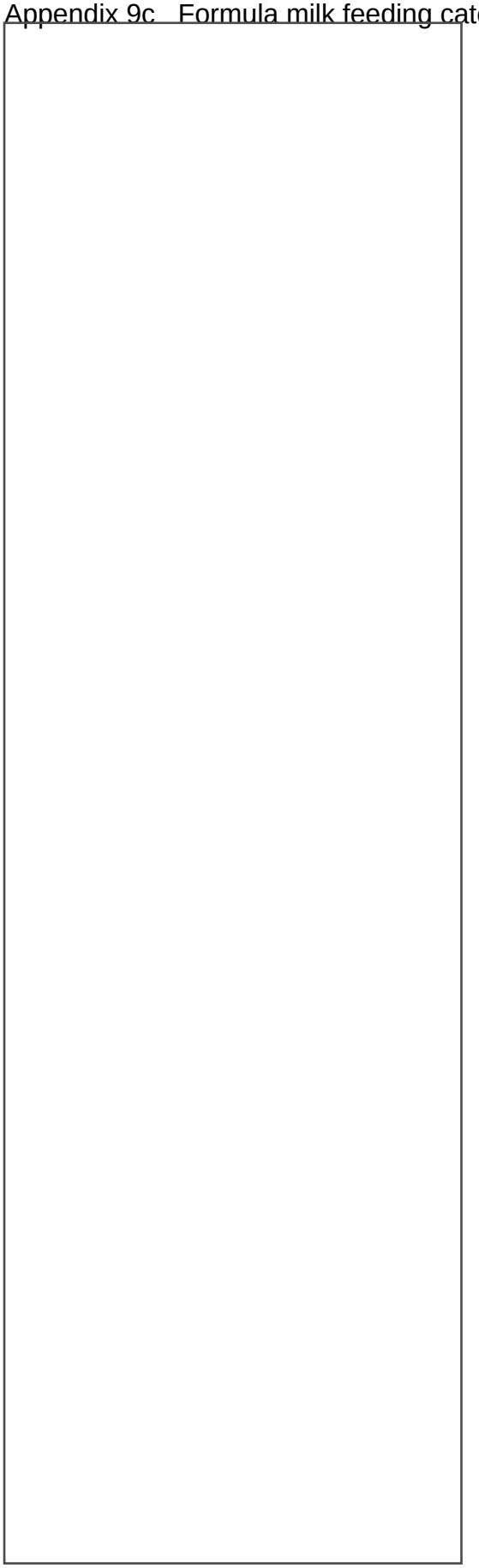
Appendix 9a Category chart



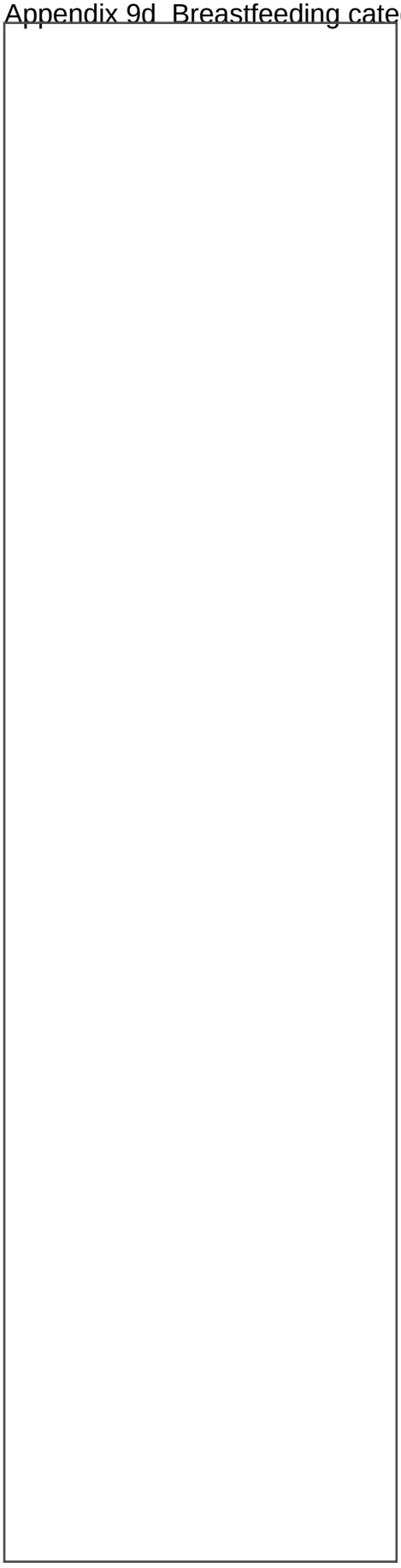
Appendix 9b Infant feeding methods categories



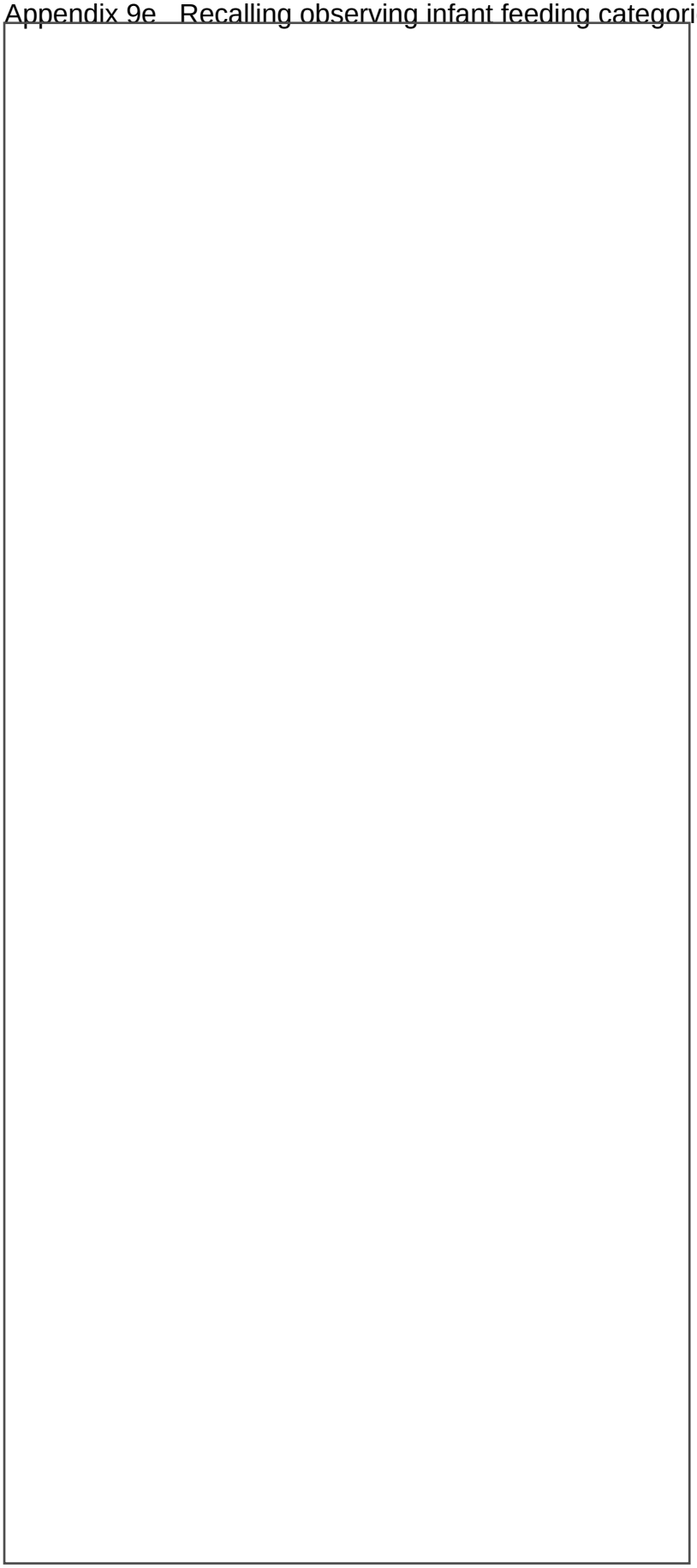
Appendix 9c Formula milk feeding categories



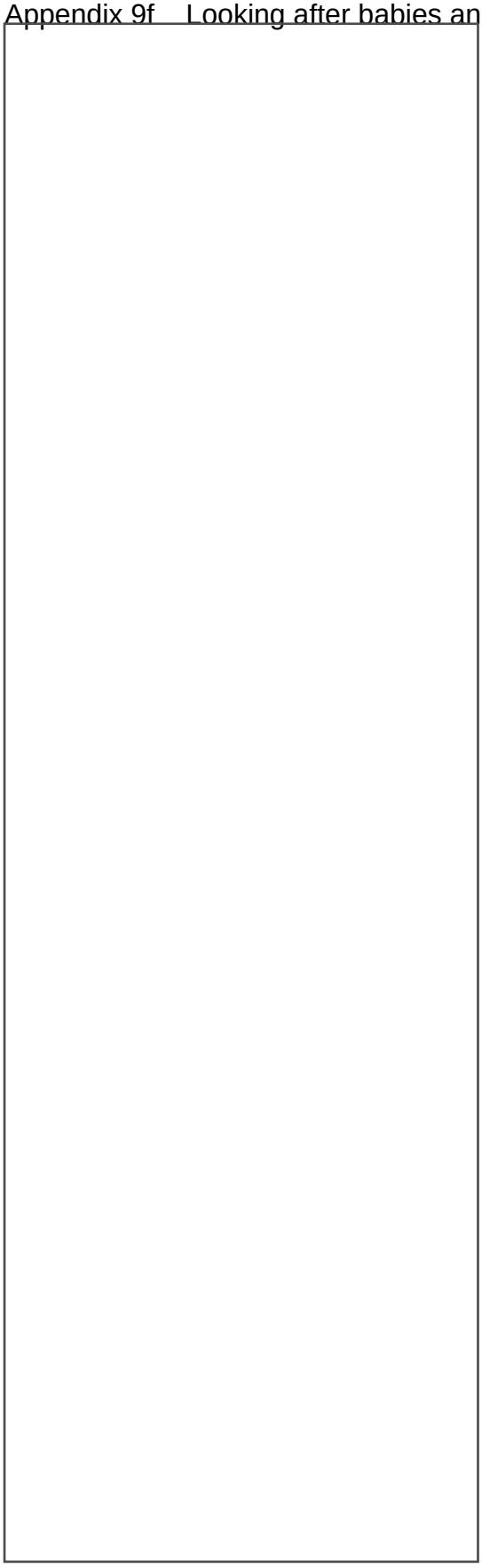
Appendix 9d Breastfeeding categories



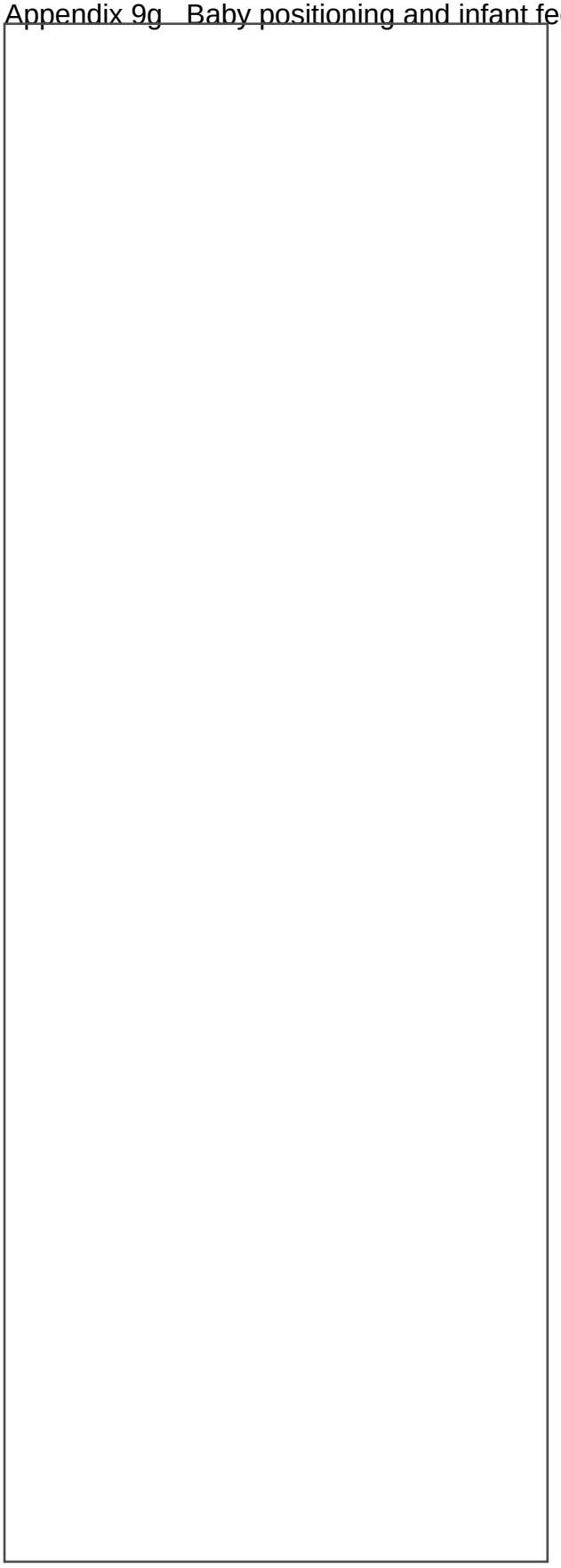
Appendix 9e Recalling observing infant feeding categories



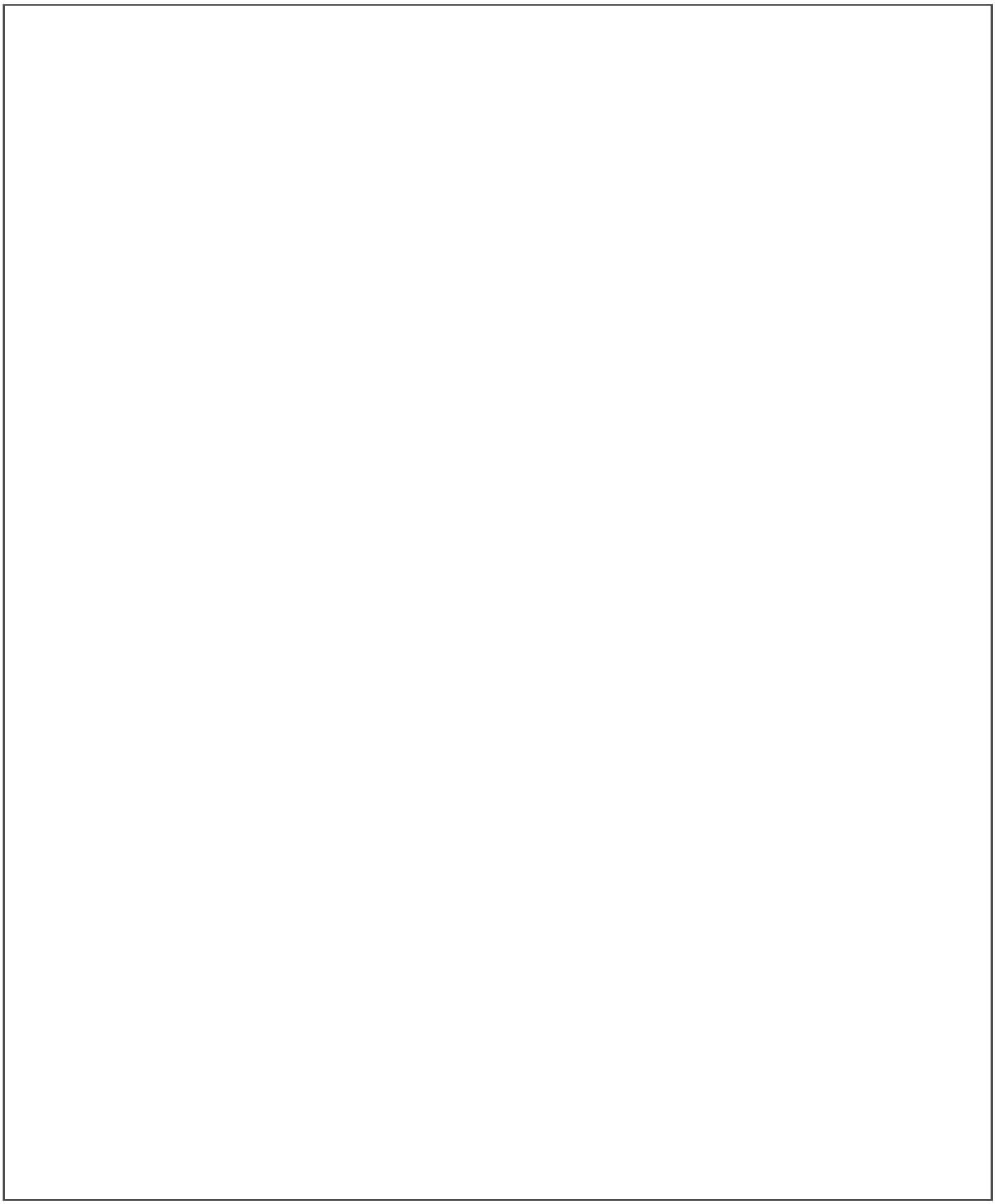
Appendix 9f Looking after babies and infant feeding categories



Appendix 9g Baby positioning and infant feeding method categories

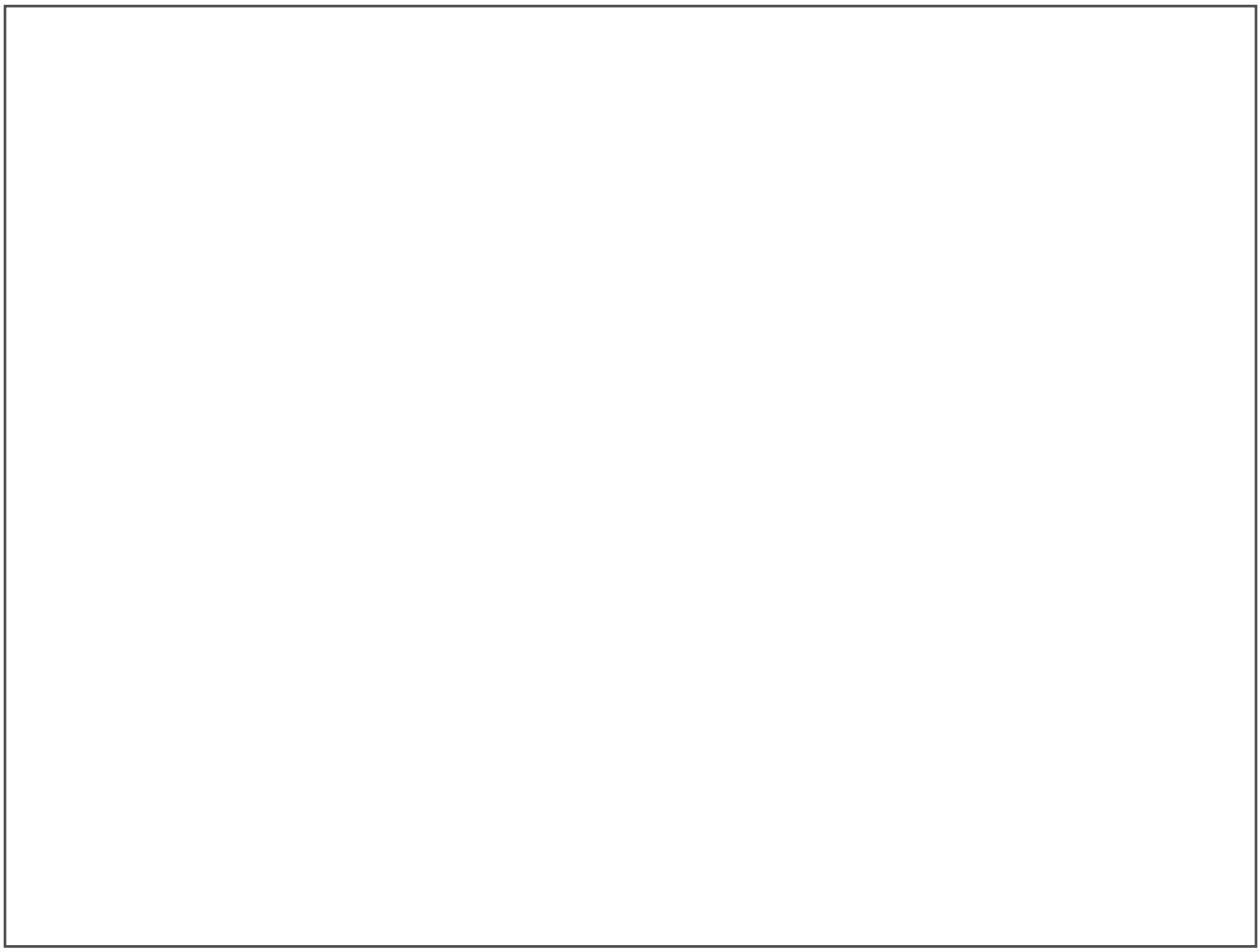


Appendix 10 Flowchart of data analysis

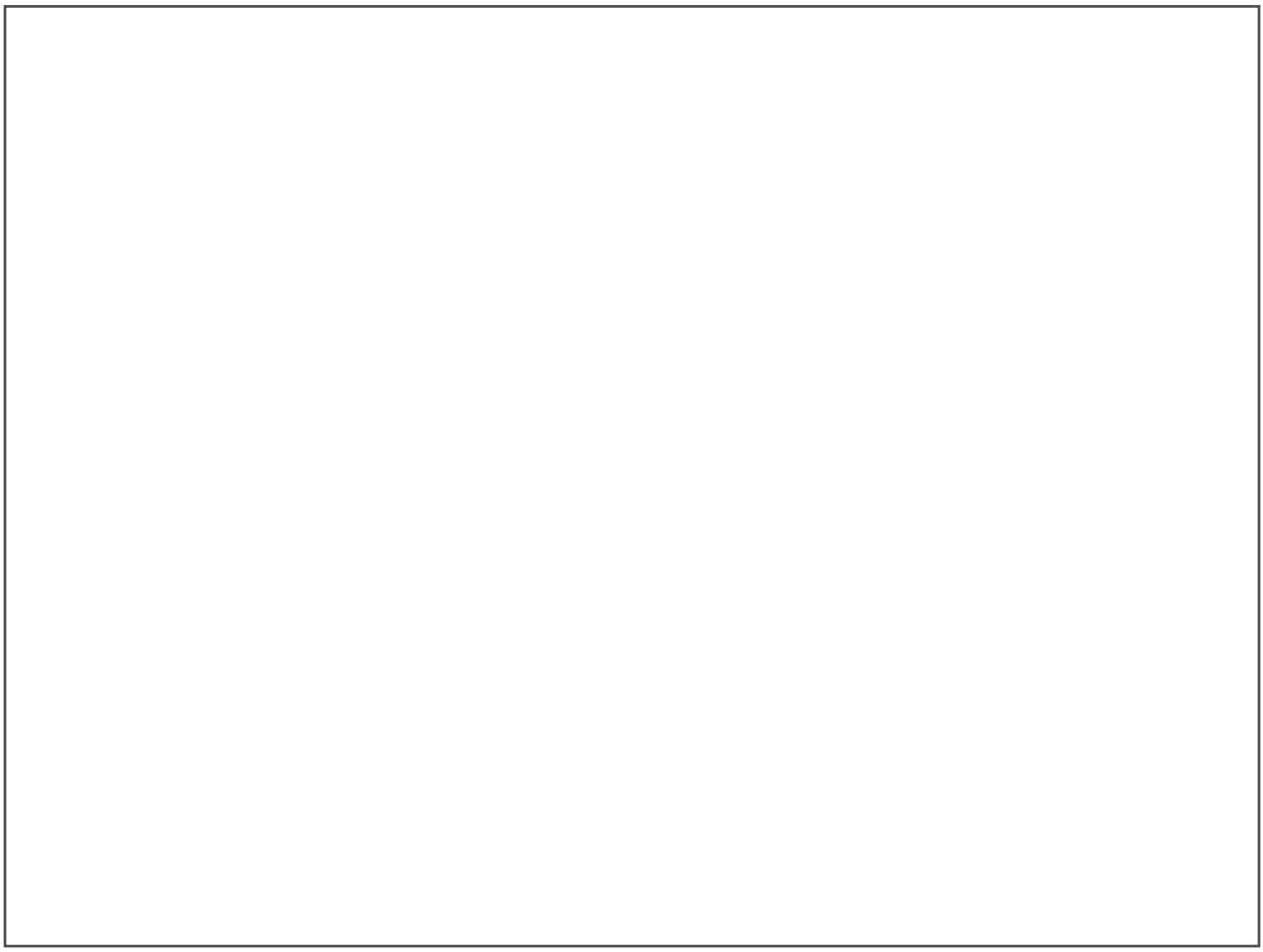


Appendix 11 Sorting the codes

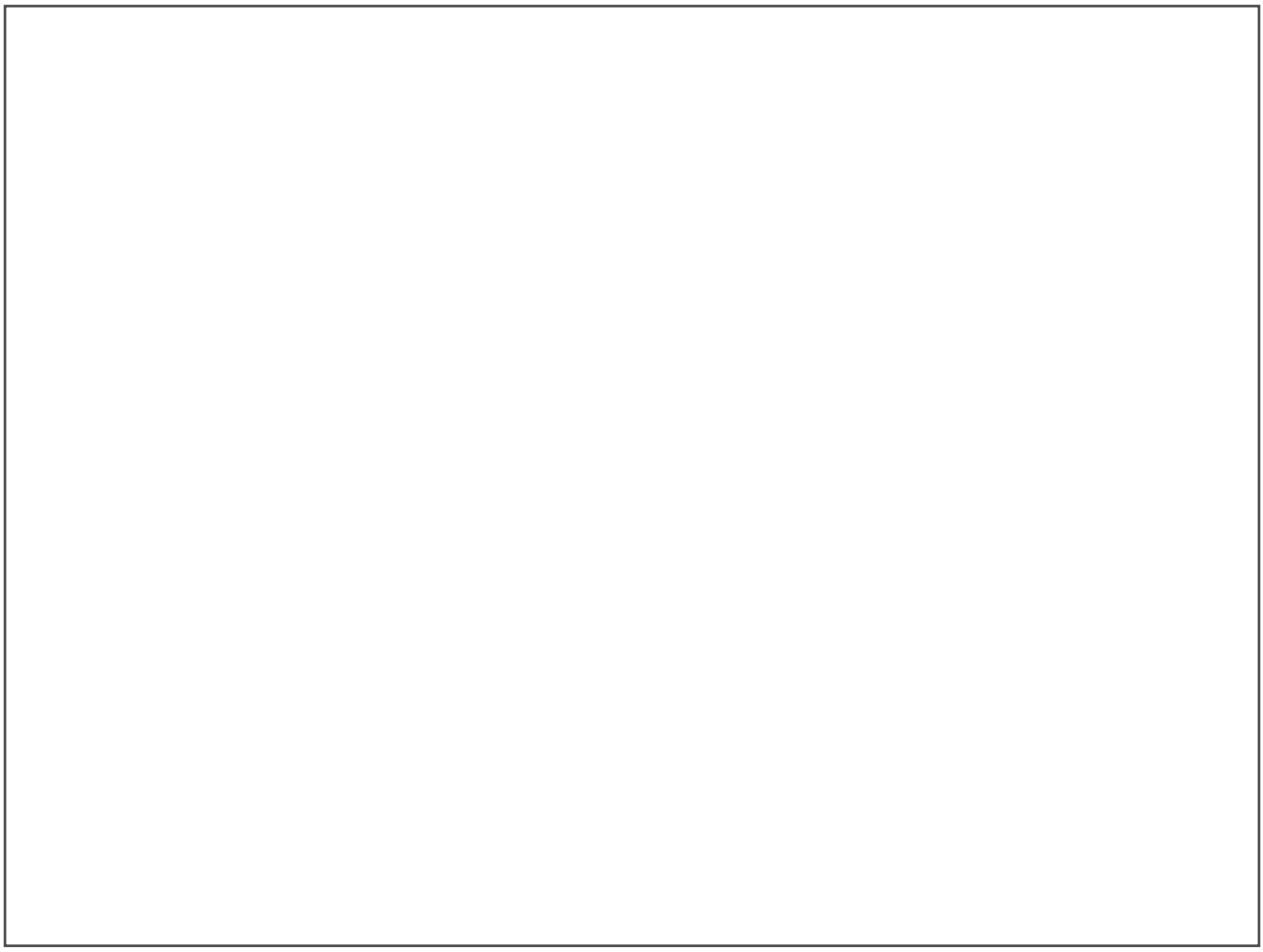
Appendix 12a Mapping children's awareness of infant feeding



Appendix 12b Grouping the categories



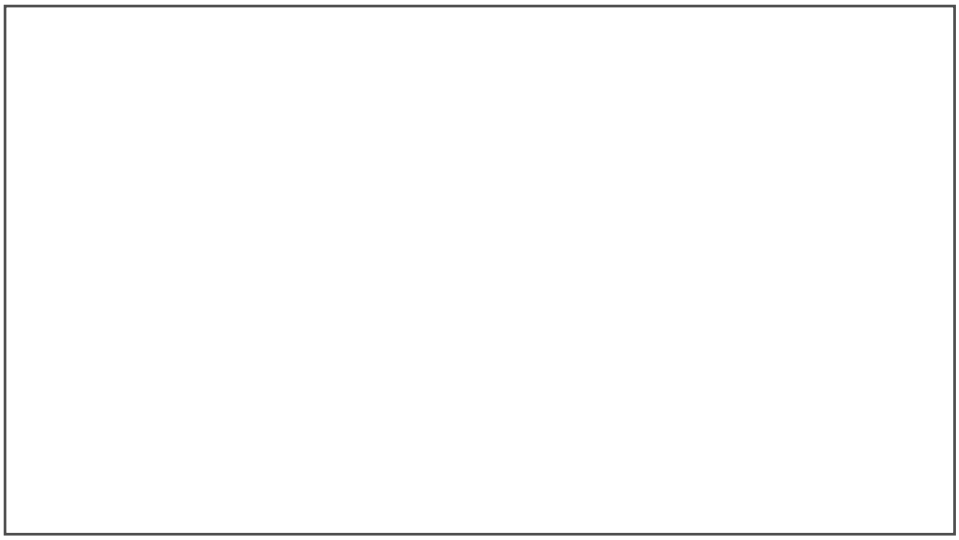
Appendix 12c Mapping children's questions about infant feeding

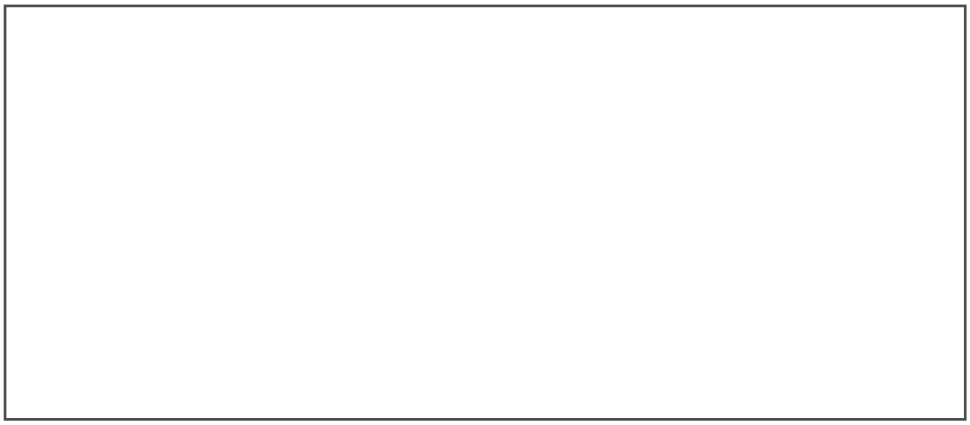


Appendix 13 Participants

Appendix 14 Interview with Philip Rose

Stuart Rose – Chairman of Marks and Spencer plc
Interviewed in The Observer 31/05/09





"It is better to light one small candle than to curse the darkness"

(Eleanor Roosevelt, 1884 – 1962)

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[1] Non-breast milk is commonly referred to as breast-milk substitute, formula milk or artificial milk. Whilst The World Health Organisation (WHO) commonly uses the term breast-milk substitutes, this was a rather cumbersome definition to use throughout this document. The term 'artificial milk' would be the preferred term in this document, because this is the most accurate and straightforward definition. However, some milks produced for the general population, rather than for babies, are also essentially artificial, thus possibly causing confusion. The WHO use the historically based term 'formula milk' in many research and policy documents, as do the UK National Health Service, Cochrane Reviews and leading parenting charities such as the UK National Childbirth Trust. In addition this is a historical term which reminds us of the origins of the product. Therefore, the terms 'formula milk' and 'formula milk feeding' have been used throughout this document when referring to non-breast milks.

[2] Definitions of children and young people vary greatly in the literature. Different researchers refer to young children, children, older children, teenagers, adolescents and young people. To avoid confusion all nomenclature used in previous research and referred to in this document, has been adapted to correspond, as closely as possible, to the following clearly defined age groups. (There appear to be no commonly agreed descriptions in the UK for different age groups to reference them against).

For the purposes of this document 'babies' or 'infants' will describe those under 1 year old. 'Pre-school children' will describe one to four year olds, 'children' will be used to describe four to eleven year olds in primary schools, and 'young people' will be used to describe eleven to 18 year olds in secondary school/further education institutions.

The overlap of ages in these definitions may appear contradictory. This recognises that at both the transfer ages between home/primary school and primary school/secondary school there will be children of different ages within the year group, and it is therefore impossible to identify a clear chronological break. As research is often conducted in schools, it is pragmatic to acknowledge the school age brackets rather than observe strict chronological ages.

It is also acknowledged that this demarcation may be inappropriate for those children who are less or more mature than their peers.

[3]The participating children's 'draw, write and tell' contributions are presented in appendix 1 in volume 2 of this thesis

[4] Throughout this thesis single quotation marks are used for phrases such as 'draw and write' and for emphasis, whilst double quotation marks are used for direct quotes. This includes codes and category titles derived from children's quotes.

[5] This thesis will be presented in the 'first person' in recognition of the reflexive nature of the work. The appropriateness of this approach has been recognised in an increasing number of

qualitative studies in health, education and social science (Tang & John, 1999; Starfield & Ravelli, 2006).

[6] It is recognised that there is a significant difference between parent's original feeding intentions and actual feeding method, particularly in the medium term. Whilst many women initiate breastfeeding, or state an intention to breastfeed, a large proportion will transfer to formula milk within a short period.

[7] A wide array of research studies relating to the effects of breastfeeding and breast milk have been conducted throughout the developed and developing world. In addition a number of meta-studies have been produced. The research cited in this sub-chapter relates solely to work conducted in the UK and Europe, or relevant studies from the US and Australia.

[8] Although it is the convention to display numbers in word format up to ten, in this document all numbers up to and including eleven will be shown in this form. All those from 12 will be in numerical form. The decision to change format at 12 has been designed to offer consistency when referring to children's ages, which in this research mainly encompass an age range of five to eleven. To constantly refer to ages within this range in an inconsistent format may have led to confusion. The exception to this rule is that all school year groups will be referred to in numerical form (Years 1, 3 and 6). This is the manner in which they are referred to in schools. It is hoped that this clear demarcation between children's ages and year groups will also minimise confusion.

[9] This decline has been most pronounced in the developed world, but the presence of a choice of feeding methods has also led to an increased uptake of formula feeding in the developing world. Formula milk company marketing and aid programmes have both been heavily criticised for promoting formula milk in countries, and in situations, where poor sanitation and water supplies are likely to result in high levels of infant morbidity and mortality (Palmer, 2009).

[10] 2005 figures.

[11] Rice, porridge oats and root vegetables provide a far less allergenic diet (Reeves, 2008).

[12] Whilst there is an increased risk of morbidity and mortality amongst formula fed babies in developed countries (Bahl et al., 2005) it is in the developing world that formula feeding carries higher risks.

[13] Quoted from Stewart-Knox et al., 2003, p269.

[14] It is possible to speculate whether it is in fact only the existence of an alternative feeding method that enables modern society to have any notion that breastfeeding might be inconvenient. It is also possible that formula milk has created a cycle of social attitudes and practices, such as intolerance to public breastfeeding, which have exacerbated the perceived inconvenience of breastfeeding.

[15] Hoddinott & Pill, 1999, p30

[16] Breastfed babies may increase in weight more slowly than formula fed babies initially, gain weight more rapidly at 3-4 months of age, and then experience slower weight gain again. This may have links with Noble and Emmett 2006 who identified that, unlike breastfed babies, formula milk fed babies did not reduce their milk consumption formula milk after commencing solids.

[17] Practices such as separating mothers and babies (Bick et al., 1998), and giving formula milk feeds without maternal consent are now exceptional rather than commonplace.

[18] The use of opiods (Ransjo-Arvidson et al., 2001) and, possibly, epidural anaesthesia (Torvaldsen et al., 2006) in labour, high caesarean section rates (Rowe-Murray & Fisher, 2002)

and formula milk supplementation due to anxiety regarding neonatal hypoglycaemia (Wight, 2006) are major contributors.
[19] www.healthtalkonline.org
[20] The concepts of 'perception' and 'awareness' are discussed in 6.3.4.1.

[21] See footnote 2, p13, regarding definitions of young people and children used in this study.

[22] Although 'children' are defined in this study as four to eleven years no research to date has included children younger than six years.

[23] Which variously include under 16 years, under 18 years or, more rarely under 21 years.

[24] This aspect of the literature was not the main focus of this research. As such, whilst a number of papers were identified this is not presented as an exhaustive list.
[25] If breastfeeding was only in infancy and not extended into childhood
[26] Young people both in the present and when they were children
[27] n = 496
[28] n = 419.

[29] Based on essential formula milk food costs rather than including the 'additional' costs associated with equipment for both formula and breastfeeding.
[30] Research in other fields has identified that children are more likely than adults to guess the answers to closed questions, even if the question is actually nonsensical or unanswerable.
[31] Such as Richard Scarry's (1965) 'Busy, Busy World' and De Brunhoff's (1931) 'Babar'.

[32] At present this ban only includes, controversially, formula milk aimed at babies under 6 months old.
[33] In this chapter all the discussion will relate only to children, as defining in footnote 2, p13.
[34] Indeed, most of the papers cited here are drawn from the large, and growing, literature relating specifically to ethical considerations when undertaking research involving children
[35] It is acknowledged that some children are cared for by guardians or other adults instead of, or in addition to, their parents. For simplicity I have therefore used the term 'parent' throughout this thesis to include any adult with responsibility for the domestic care of a child.
[36] Such as the implications of not giving permission for their child to participate, and information about procedures for withdrawing consent.

[37] Such as randomisation.

[38] For example during illness, or where participants have additional needs, are elderly or are children.
[39] There is little consensus on the definition of ''creative methods'' although Gauntlett (2006) provides a succinct overview of the concept. Gauntlett's (2006) definition, and a review of 'creative methods' are presented in full in 4.5.5.

[40] Activities which require children to sort out pictures, objects or information into groups or place them in linear progression

[41] All references to children are to those of primary school age
[42] The literature search was restricted to research undertaken fully, or partially, in the UK. The difficulties of comparing 'draw and write' data between different cultures and languages has previously been noted by Newton-Bishop et al., 1996. In addition, identifying the primary school age group is difficult in countries where there are different school structures.
[43] The range covered by the literature is four to 12 years, although one study extends to 16 years.

[44] The more senior of the nine and ten year olds in this study
[45] Much of the literature around interpretation of visual data focuses around 'commercial' art, photographs, film or other adult forms of art. I would suggest that this is very different in symbolism, meaning and intent to 'naïve' art produced by children or adults.
[46] Creation of pictures using elements from other, often pre printed artwork
[47] I have described the method used in this research as 'draw, write and tell', and will use this term throughout the thesis. Other 'draw and write' research will continue to be referred to as 'draw and write'.

[48] In some Local Education Authorities and in fee paying schools children in this age range may differ. In addition, in some regions the primary age range may be divided into 'infant' (4-7 years) and 'junior' schools (7-11 years), with the change occurring between Year 2 and Year 3. Infant and junior schools may be linked, with a shared site and/or management team, or they may be entirely separate.

[49] Whilst Year R (Reception) (4-5 years) is the youngest primary school age it is not compulsory for children to enter school until the term after their 5th birthday (DCSF, 2009). It was therefore decided not to include this year group in the research.
[50] Primary classes in the UK are limited by law to a maximum of 30 pupils.

[51] Although semi-structured interviews were not used in this research this was the closest equivalent to the 'tell' aspect of the data collection.
[52] Many ethnic groups have infant feeding practices which differ from 'average' UK populations, particularly in relation to withholding colostrum (Hoddinott et al., 2008) and might therefore distort the findings of this research.

[53] The rural and urban areas from which schools were recruited are managed by different Local Authorities. The rural area operates a primary school (4-11 years) system, the urban area operates an infant school (4-7) and junior school (7-11) system. As a result it was necessary to recruit 3 schools, although the intention was to recruit an infant school and junior school within the same area of the city, which would therefore have the same, or similar, demographic characteristics.
[54] The reading age was five years for all words except 'crying' and 'hungry'. This made the text marginally more difficult. However, it proved impossible to substitute these words for simpler ones without loosing meaning. This meant that some younger children or those with additional education needs may have experienced difficulty in reading a small amount of the text. However, because the text was read aloud to the class this was not perceived to be a significant limitation. There were no children in any of the classes with hearing difficulties who would have been reliant on reading the text.

[55] ‘The carpet’ is a common component of most primary school classrooms and is usually a carpeted space used for storytelling and ‘quiet time’.

[56] To avoid damage to furnishings and books.

[57] In a different environment I would have preferred to offer felt tip pens because several children stated a preference for them, and they would have made image scanning more effective.

[58] No restrictions were imposed by the researcher. However, in two classes the teacher separated some children with behavioural issues as part of her usual classroom management strategy.

[59] This was discussed with all the teaching staff and they each had several ongoing pieces of work or reading which the children could be engaged in as an alternative to the ‘draw, write and tell’ activity.

[60] Despite these discussions some children did not appear to illustrate a newborn baby, or actually noted a specific age for the baby in their picture which was beyond ‘newborn’.

[61] I have observed this with my own children and in practice as a midwife when talking with the older siblings of infants in my care.

[62] Isadora (1992) for Year 1 and 3, Wolff (1996) for Year 6.

[63] The original artwork was given straight back to the children after scanning during the ‘tell’ session, so the child could choose whether to take it home, leave it at school or discard it. To identify the work and withdraw it from the research would require the child or parent to describe the picture, or ask the teacher to do so on their behalf. The small number of pieces of artwork from each class, and my familiarity with each picture, meant that it would not have been difficult to identify any particular one from a rough description.

[64] In appendix 1 the ‘data sheets’ are displayed on two A4 sheets, for ease of binding.

[65] Although I am referring here to data which will appear in the findings, this is simply as a means of illustrating the analysis process, which might otherwise be difficult to understand.

[66] In school R the same teaching assistant was present when each class was participating in the ‘draw, write and tell’ exercise. In school U a classroom teacher and teaching assistant were present in Year 1, and in the Year 3 and Year 6 groups only the class teacher was present.

[67] Although the children may have chosen to show the teacher or teaching assistant their artwork during or after the activity.

[68] One of the rural schools agreed to participate following receipt of research details and therefore no further rural schools were contacted.

[69] Primary schools may be configured differently depending on local authority policy. Whilst the rural school was located in an area where primary schools are operated this contrasted with the urban area which was governed by a separate local authority. In the urban area the primary age group was educated in infant schools (four to seven years) and junior schools (seven to eleven years). As a result it was necessary to involve three schools in the research although the urban infant and junior schools occupied overlapping catchment areas.

[70] The junior school receives children from several infant schools and therefore has a large catchment incorporating all of these.

[71] Unless absent due to illness.
[72] Unless absent due to illness.

[73] Schools were contacted by telephone 5 days after they received the initial information letter about the research.

[74] For instance, where neonatal illness or death had occurred in the family the Head Teachers agreed to discuss the research individually with the family rather than send the parental information letter. Because the Head Teachers were familiar with the families of children in the school it was appropriate for them to manage this aspect as they felt appropriate for the individuals involved. None of the Head Teachers identified families for whom they believed children's participation in the research would be detrimental.

[75] The schools identified that they generally received a larger number of responses to letters from parents if the 'reply window' was quite short, so that parents remembered to reply and did not loose or forget it. This time scale gave parents the opportunity to read the letter and, if they wished, call either the dedicated telephone number on the letter to discuss the research with me or call the Head Teacher.

[76] It is noteworthy that the teaching staff did not always appear to fully understand why this presented an ethical problem.

[77] The work created by this child is not identified here because this would compromise the child's anonymity.

[78] 64 responses from 121 forms distributed
[79] Two children were absent due to illness.

[80] Including Charlie 1U4m5.
[81] Where large numbers of children are referred to it was not appropriate to list them individually in the text. The relevant children may be identified by referring to the appropriate column in appendix 9a. Where points are made which refer to specific children they are referring to in the text by pseudonym and reference number.

[82] Those codes which represent broad concepts or my observations are in 'inverted commas'. Other codes emerged directly from children's text or verbal contributions and in some cases were so significant that they have been kept "in vivo". As such these are always shown in "quotation marks".
[83] Amy (6R2f10) and Daisy's (6R3f10) contributions were not included in this category because although they only illustrated formula milk feeding, they later talked about their experience of observing breastfeeding.

[84] It was not possible to ascertain why she was so specific about the milk being straight from "their cow" or whether she had previously experienced having milk direct from cows.

[85] The class teacher was leaving the school to take up a new post shortly after my visit and had already removed many of her resources from the school or distributed them amongst her colleagues. As a result she was unable to show me the resources, and was unable to provide much information about them.
[86] From the observational notes I was able to recognise that it was Imogen (3U13f8) who had come across and interjected in Katie's (3U12f8) 'tell' session to tell me that one of Katie's relatives was an artist.
[87] These instances are identified clearly in the findings
[88] In Russell et al. (2004) mothers were asked, in a questionnaire, whether they thought their child had observed breastfeeding, and how frequently this may have occurred.
[89] This was commented on by teaching staff when I returned to the schools for subsequent data collection visits or to deliver 'thank you' letters.
[90] The LREC was concerned that some families might be find the subject of infant feeding distressing due to adverse pregnancy or neonatal events. The schools were therefore asked not to distribute letters to families where they felt this might be a problem and find alternative activities for these children. In the event none of the schools identified families where this was required.
[91] Although some children did demonstrate feelings or knowledge about infant feeding in their contributions.

[92] Mutability (Collins, 2008) describes the potential for variation, mutation, alteration or change. Unlike changeability it does not necessarily imply a likelihood of change, only the existence of potential for change.

[93] Morphing (Collins, 2008) is a term adopted largely by computer based imaging in which one form is altered, by reforming in a series of stages, into another form.

[94] Children in Year 3 illustrated solid foods in great detail, but by Year 6 few children did so, probably because they had realised that this was inappropriate in terms of context and level of information.
[95] Signs for baby feeding rooms/changing areas, including those in GP surgeries and hospitals, often include feeding bottle images.
[96] It is as illogical as saying "having a fork" or "having a glass" when eating or drinking.

[97] These measurements were all quite unique, being variously upside down, in odd units or in volumes which were too large or small to be practical.
[98] Except Lucy (3U4f8) who annotated her drawing with "breastfeeds"

[99] To nurse is defined as "to feed a baby at the breast" (Collins English Dictionary 2009)

[100] There is a small amount of literature regarding appropriate terminology to use when discussing subjects, such as sex education, with children. However I was unable to find research relating to children's own preferences regarding terminology.
[101] It may be that the reason that children combined formula milk feeding and solid foods so frequently was because both are symbolised by easily illustrated objects. By contrast it is far more difficult to integrate an illustration of breastfeeding with solid foods. It is immediately clear that this would require complex composition, because of the tendency to place the baby at the breast in a breastfeeding picture. However, the counter argument to this is perhaps that a formula fed baby

should also be held during feeding rather than sitting in a chair or cot.
[102][103]*+=gh€…†Œ? §°ÝÞàîïk l m v æÊæÊ¾µ¾±ª±ª±ª?ª±›?±xj[I#h‘jhïYG5?CJOJ[104]QJ[105]^J[106]aJhïYG5?CJOJ[107]QJ[108]^J[109]aJh:-^hïYG5?OJ[110]QJ[111]^J[112]/h:-^hïYG5?B*[pic]OJ[113]QJ[114]^J[115]mHnHphu[pic]hkqÒhkqÒOJ[116]QJ[117]hkqÒhôI The children were told that the baby on the picture boards was a newborn baby
[118] Although there may have been exceptions where a child was away due to illness etc.. as far as the teachers could recall there had been no change in the members of either class since the teaching event.
[119] The 6U teacher had packed away her teaching materials in preparation for a change of job. It was not known who had taught the 6R class at the time they had received teaching on the subject several years previously.
[120] The age that 6R had been when they received teaching about infant feeding.

[121] There appeared to be a lack of research on this specific area of research relating to the UK, hence this study is from the US and South America.
[122] Some Year 6 children drew only fragments of mothers, which made it difficult to ascertain the positioning of the baby.
[123] 6U had received recent infant feeding education, 6R had received a breastfeeding education session whilst in Year 1.

[124] In 2009 the UK Government announced initial plans for a change in the primary school curriculum, which will result in the amalgamation of subjects such as geography, history and religious education into single ‘areas of learning’. The stated aim is to encourage linking of ideas between subject areas (Directgov, 2009).
[125] Except Charlie (1U4m5) who did not fully participate in the research.