

# **‘Alien knowledge’ - preparing student midwives for learning about infant feeding**

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## **Abstract**

Infant feeding education forms a key element in undergraduate midwifery education in the UK. Students must be prepared to provide women with support and information to make appropriate health choices for themselves and their infants. However, student midwives may already have developed opinions about infant feeding prior to commencing a midwifery education programme. The education literature suggests that existing attitudes may present a barrier to learning for some students. This particularly applies to learning in relation to sensitive or emotionally laden subjects. A review of the literature was undertaken to identify potential teaching approaches which might help students to overcome barriers to learning. Following this the evidence was utilised at a UK university to develop activities which prepare student midwives for effective learning around infant feeding. Students enrolled in the midwifery education programme were introduced to a number of activities aimed at encouraging them to accommodate unfamiliar ideas or ‘alien knowledge’. These included placing students in situations which challenged their ideas, as well as engaging in group discussions and reflective exercises. The impact of these educational interventions was identified through formative and summative assessment, and through evaluation of the teaching strategy at the end of the programme. This demonstrated that, amongst those students with previously negative attitudes towards infant feeding, there was a move towards more positive attitudes and a greater confidence in providing evidence based information to parents.

## **Keywords**

alien knowledge, baby friendly initiative, bottle feeding, breastfeeding, infant feeding, learning, student midwife, teaching methods, threshold concepts

## **Introduction**

In the United Kingdom (UK) student midwives are drawn from a wide age spectrum and frequently have very different social and educational backgrounds. As a result a cohort of student midwives might commence their programme of education with an assortment of experiences and perceptions. Diverse attitudes amongst students can help to generate a rich and exciting learning environment. However, in some cases personal perceptions can present a barrier to learning. New student midwives' views around infant feeding are varied, reflecting some of the complex range of opinions present in the general population in the United Kingdom (Sittlington et al., 2007). Within society breastfeeding is seen by some as natural or healthy (Bolling et al., 2007) whilst others identify it as inconvenient (Shaker et al., 2004), problematic (Bailey et al., 2004) or indiscrete (Ward et al., 2006). As such some student midwives, when confronted with positive information about breastfeeding, may find these unfamiliar concepts difficult to accept. Perkins described this educational dilemma as 'alien knowledge' (Perkins, 1999). Where such discordance exists the student may be prevented from learning effectively (Smale et al., 2006). In the midwifery education programme this presents a problem because evidence has demonstrated that women benefit from a positive and consistent approach from health professionals in relation to breastfeeding (McFadden, 2006). They should be able to present breastfeeding as the normal method of infant feeding (Berry and Gribble, 2007) regardless of personal opinion (Silfverdal, 2011). To achieve this it is essential that health professionals working with women are able to absorb and implement recognised good practice (Smale et al., 2006). In this article

the learning theories relating to 'alien knowledge' is explored, and the strategies put in place at xxx University to enable student learning are described.

## **Background**

### Infant feeding education

Infant feeding forms a significant part of the undergraduate midwifery programme at Bournemouth University. It consists of a spiral curriculum (Harden, 1999) in which student learning is developed across the 3 year programme, appearing in a number of units, covering diverse areas ranging from normal postnatal care to pathophysiology. A number of teaching approaches are employed, including classroom teaching, small group work, discussion groups, practical skills sessions, self-managed online learning and reflections on clinical experiences. Teaching is strongly evidence-based and practice orientated, with a range of multimedia resources and 'real life' examples that aim to stimulate discussion and reflection. Care planning and clinical reasoning are major elements throughout all teaching and assessment activities. The aim is to enable students to build a comprehensive understanding of infant feeding, so that they have a holistic view of the processes involved and can be flexible, resourceful practitioners rather than relying on piecemeal knowledge and rote learning (Kirkpatrick and Brown, 2004). Formative feedback is provided during group activities and practical sessions. Summative assessment occurs in the form of clinical simulations, a reflective workbook, written and oral examinations, and assessment in clinical settings with both academic advisors and mentors. Prior to their first clinical

placement new students receive some initial infant feeding education, delivered both in the classroom and as self managed computer based learning. This focuses on social aspects, the importance of breastfeeding for health and well-being, the physiology of breastfeeding, infant feeding policies, communication and support skills.

### Student midwives and infant feeding perceptions

Prior to commencing their university programme student midwives will have been exposed to a range of infant feeding concepts. Whilst it is tempting to assume that this only applies to those who have had children themselves, the evidence suggests that people might have opinions relating to infant feeding regardless of whether or not they are themselves parents (Angell et al., 2011). It appears that personal perceptions around infant feeding are formed early in life (Russell et al., 2004, Angell et al., 2011). Indeed, children of primary school age have already begun to construct ideas around the subject, gaining awareness through observation of family and friends, peers, books, games and media (Angell et al., 2011). Adolescents have often acquired fairly firm ideas, based on their assimilation of family behaviour, peer attitudes and popular culture (Lockey, 2003). Adult women have frequently made infant feeding decisions prior to pregnancy (DiGirolamo, 2005). Women from more affluent backgrounds, who have spent more time in education and are in a relationship have a greater tendency to initiate breastfeeding (Bolling et al., 2007). Women who have had children themselves might additionally have complex ideas and emotions on the issue based on their own experiences.

They might be strongly in favour of the method they used to feed their infants, or they might have feelings of anxiety or ambivalence because they experienced difficulties (Schmied and Barclay, 1999). Infant feeding is an emotive subject for many women (Schmied and Barclay, 1999), perhaps more so than many other issues associated with childbirth. Women might feel a weight of personal responsibility and social expectation, and can feel that the method of feeding they used reflects on them as a mother (Carolan, 2006). Disparities between the breastfeeding health messages offered by professionals may clash with women's preferences, or they may experience difficulties which lead them to cease breastfeeding, resulting in long term feelings of failure or guilt (Ryan et al., 2010). Public notions of decency and modesty relating to breastfeeding may also create personal dilemmas (Smythe, 2008). In addition, their knowledge of infant feeding, and particularly breastfeeding, might have been influenced by the health professionals who cared for them during their own childbearing experiences (Becker, 1992). Amongst the student body there are also students who have previously worked in other capacities with mothers and babies, who bring knowledge and experience which might, or might not, be congruent with the learning requirements for student midwives.

The effects of these experiences are manifested in different ways. It is difficult to quantify these because there is currently a lack of research relating specifically to the existing attitudes of new student midwives at the beginning of an infant feeding education programme. However, Dykes (2006) has identified that, among qualified midwives, personal and vicarious experiences of breastfeeding might have more influence on attitudes to the subject than

cognitive knowledge. As such, those who do not feel positive about breastfeeding education might not be keen to attend sessions (Smale et al., 2006) or might demonstrate 'resentment' when required to do so (Burt et al., 2006). It might therefore be anticipated that student midwives might also experience reticence around breastfeeding education where their previous experiences have resulted in negative attitudes towards the practice. To try and assist all students in learning, and especially those for whom this subject is difficult, the initial sessions of the infant feeding education programme begin with a range of activities designed to encourage learning through reflection on past experiences. Early identification of personal attitudes and barriers has been identified as beneficial in other areas of student midwife education (Fraser and Hughes, 2009). Infant feeding education at xxx is closely aligned to the UNICEF Baby Friendly Initiative, which aims to achieve good practice and consistency in infant feeding support at local, national and international levels. The activities used in the midwifery education programme are similar to those included in UNICEF's breastfeeding training for health professionals (UNICEF, 2008). However, understanding the pedagogical underpinning for this is essential in order to identify the value of this part of the programme.

### **Barriers to learning**

In Higher Education today effective teaching is frequently regarded as being 'constructivist' in nature. In constructivism learning becomes a 'joint enterprise' between teacher and learner. Students are enabled to 'construct' meaning for themselves, rather than simply trying to absorb information transferred from the teacher (Atherton, 2010). From this the concept of 'constructive alignment' (Biggs and Tang, 2007) has emerged. Here students

are not expected to simply construct their own meaning in isolation, but are provided with a learning environment in which learning activities, teaching methods and assessment conspire to 'trap' (Biggs, 2003) students into fulfilling the intended learning outcomes. However, it is recognised that even where the principles of constructive alignment are in place, students might find the learning process challenging (Biggs and Tang, 2007). Observation suggests that for student midwives engaged in infant feeding education there might be palpable anxiety around the subject. This may be demonstrated by lack of participation, or by constant reference to problematic situations or personal negative experiences. Over time there might also be a tendency to 'slip back' into attitudes and practices used prior to the start of the university course. The literature offers a number of possible explanations for this.

#### Accommodating new ideas

Moon (2004) suggests that learners assimilate new information according to existing experience and understanding. In order for this to happen a process of 'accommodation' must occur, in which existing cognitive structures must be adapted. If the learner perceives that the new information is meaningful, and feel motivated to learn, then they will allow considerable 'accommodation'. However, if the information is unexpected or requires a fundamental change in belief it might be far more difficult for the learner to accommodate it (Moon, 2004). In the case of breastfeeding education it is perhaps reasonable to suggest that those who are comfortable with the concept might be better able to process additional related ideas and information.

Atherton (2010) suggests that there might be additional issues for those who already hold ideas or opinions. He theorises that whilst ineffective learning might be variously ascribed to lack of motivation, lack of aptitude or poor teaching, it might instead be due to the psychological 'cost' of learning. He also suggests that for some students the process of learning requires significant changes, in which they not only have to undertake 'additive learning' but also have to supplant their existing knowledge or attitudes in order to take on new ideas (Atherton, 2010). In addition, Meyer and Land (2005) cite Guest's unpublished manuscript (2005) in which he noted that students struggled most significantly with learning where it impinged on personal beliefs. In Guest's research these issues related to religious practices, but it might be reasonable to surmise that the same might apply to any deeply held belief. It is clear from the evidence that infant feeding is a subject which arouses very strong feelings and emotions (Boyer, 2011). It therefore seems reasonable to suggest that the process of learning about infant feeding may cause problems for those students who hold strong opinions. As such the process of abandoning deeply held personal beliefs relating to infant feeding in order to take on new, possibly diametrically opposing concepts, might be very traumatic and difficult for some students.

It is also perhaps possible to argue that, for some students, these issues are linked to the familiar concepts of surface and deep learning (Biggs and Tang, 2007). For deep learning to occur it is suggested that learners must be engaged as a 'whole person'. High anxiety, an inability to process teaching content or a 'cynical view' of the subject matter are all cited as possible student led reasons for adopting a surface learning approach (Biggs and

Tang, 2007). As a result they might fail to engage, learn only isolated facts and not fully comprehend the meaning and structure within the teaching. This may explain why, for some students, learning around breastfeeding is piecemeal and why they struggle to perceive the interconnectedness of different aspects of the practice.

#### 'Threshold concepts' – the normality of breastfeeding

An additional aspect when considering the problems encountered by learners is that of 'threshold concepts'. These 'conceptual gateways' demonstrate the inter-relatedness of a range of ideas (Meyer and Land, 2005). Meyer and Land (2005) argue that in the process of learning threshold concepts, 'there occurs also a shift in the learner's subjectivity, a repositioning of self' (p374). This concept tends to be used to refer to complex ideas in subjects such as science, mathematics or economics, but it does not seem unreasonable to extend this to more emotionally challenging areas of learning. This view is reinforced by the link between threshold concepts and 'troublesome knowledge' (Meyer and Land, 2005), so called because they consist of complex or paradoxical ideas, or in some cases because they involve 'alien knowledge' (Perkins, 1999). The relevance of this can be seen when considering the issues in teaching student midwives about breastfeeding in the UK's 'bottle feeding culture' (Scott and Mostyn, 2003). Here the concept of exclusive breastfeeding as 'normal' might represent a significant and difficult shift in attitudes (Palmer, 2009). However, if this concept can be acquired many other issues might become less problematic to students. Experience suggests that having established this they might gain confidence in the evolutionary and physiological robustness of breastfeeding rather than seeing

it as a fragile and difficult process. Other features of 'threshold concepts' suggest its relevance in this context. Meyer and Land (2005) propose that learners might enter a 'liminal state', in which they appear to take on new ideas, but in which these are still 'troublesome', and where time is required in order to adapt completely before effective learning can occur.

## **Adapting infant feeding education to enhance learning**

### A supportive learning environment

Infant feeding education forms a significant element of the University's midwifery undergraduate course. Recognition that learning comprises not only the assimilation of factual knowledge but is also an affective process is central to the infant feeding education programme. Indeed, Anderson and Davies (2004) emphasise the importance of integrating cognitive and affective domains of learning in midwifery education, to ensure that the 'scientific' medicalised element of midwifery does not suppress the 'art' of midwifery. This is considered important to develop sensitive, caring attitudes of empathy, understanding, support and responsive communication and is recognised in the Intended Learning Outcomes developed for each session. Caine and Caine (1991) note that;

'We do not simply learn. What we learn is influenced and organized by emotions and mind sets based on expectancy, personal biases and prejudices, degree of self-esteem, and the need for social interaction'

(Caine and Caine 1991,

p82)

Because infant feeding can be a very emotive subject (Schmied and Barclay, 1999) it is felt that there is a need to balance the benefits of frank and open interactions between students with a learning environment in which all participants are mutually respectful and non-judgemental, reflecting the view that;

‘Teachers need to understand that students’ feelings and attitudes will be involved and will determine future learning. Because it is impossible to isolate the cognitive from the affective domain, the emotional climate in the...classroom must be monitored on a consistent basis, using effective communication strategies and allowing for student and teacher reflection and metacognitive processes. In general, the entire environment needs to be supportive and marked by mutual respect and acceptance both within and beyond the classroom.’

(Caine and Caine, 1991)

The importance of supportive environments, where personal and vicarious experiences can be discussed, has been widely recommended for breastfeeding education for midwives (Dykes, 2003, Henderson et al., 2000) and would seem equally valid as a learning environment for student midwives. Whilst a supportive learning environment underpins group interactions throughout the whole midwifery course it is particularly reiterated at the beginning of the infant feeding education sessions. A key element in encouraging students to be supportive of each other and any judgemental

comments are quickly challenged. However, as some students develop new perspectives and understanding they also need to avoid judging themselves in relation to decisions and experiences from the past. Experience suggests that students can become distressed, often because they feel they did not give their own children the optimal feeding method, and it was regarded as important to find a way of acknowledging and addressing this at the beginning, and throughout the programme. As such the first session opens with a famous Theodore Roosevelt quote; “Do what you can, with what you have, where you are”. Discussion triggered by this quote places emphasis on recognising that previous infant feeding decisions were based on the individual’s knowledge and situation at that time. New ideas and information which the student encounters on the programme might change their infant feeding attitudes and behaviours, but they should try to avoid feeling guilt or regret in relation to past events.

#### Mapping personal infant feeding experiences

At the beginning of the programme students are asked to complete an infant feeding timeline, on which they can map their personal experiences or perceptions, recording experiences as positive or negative. This enables the students to view their experiences in a structured manner, and it is possible that it might contribute to the completeness and accuracy of recall (Glasner and van der Vaart, 2009). The timeline serves to remind students of the complexity and range of experiences that they have of infant feeding. Whilst the value of student’s personal stories is recognised (Hunter and Hunter, 2006) there is a need for this to be appropriate and timely in a classroom setting, and it is hoped that mapping experiences might enable more focussed

and considered contributions. Crucially the personal timeline is used as a reference point for reflective discussions throughout the sessions, and is aimed at enabling students to identify the context in which their own perceptions were formed.

### Challenging attitudes and values

A recognised aspect of infant feeding behaviour is that individuals frequently replicate the beliefs and behaviours of their family and social group (Earle, 2002). For some students the concepts involved in the teaching might differ considerably from their own viewpoint, whilst for others there might be a need to recognise that attitudes to infant feeding vary considerably amongst their colleagues and amongst the population in general. This requires exposure to alternative ideas and the development of self-awareness. Indeed it is clear that, as in many areas, education cannot be limited to providing knowledge alone. It also changes attitudes and behaviour, and bridges the gap between cognitive and affective learning (Taylor and Hutchings, 2012). Francke and Erkens (1994) describe this concept as confluent learning. They suggest that this could be achieved by generating disorientation or dissonance to stimulate critical analysis and self-awareness. This might enable learning by

‘recognizing what is going on in oneself, by reflecting on what is seen, heard, felt and thought now, in this moment’

(Francke and Erkens, 1994)

Similarly, Peloquin (2002) describes confluent education and identifies the use of triggers within the learning environment to enable the development of emotional, social and cognitive meaning. Evidence of the effectiveness of this

approach in relation to infant feeding was demonstrated by Taylor and Hutchings (2012), who used women's video narratives to create a dissonance between a midwife's past and present opinions of breastfeeding. This stimulated a transformative learning process involving affective and cognitive domains enhancing the potential to improve attitudes towards support for breastfeeding women.

To trigger this form of learning amongst new midwifery students each group is asked to view a series of photographs and artwork relating to infant feeding. Some of these depict aspects that might be unfamiliar or controversial, such as pictures of women breastfeeding older children or expressing breast milk. Other images might be more familiar, such as a father feeding his child formula milk, but these also contain elements that are intended to generate meaningful discussion. The students are asked to write down an immediate 'gut' response to each image. Group debate then ensues, usually reflecting a wide range of viewpoints, with the aim of enabling students to begin a process of 'letting go of judgements and projections', and challenging the 'shoulds or oughts' in a situation (Francke and Erkens, 1994). Discussion of the background and evidence base for the examples offers an alternate viewpoint for some students, from which they can begin a process of examining and reflecting on their own perceptions. This process is used to enable the group to explore ideas with each other and learn through exposure to new ideas and attitudes, with occasional input of 'factual' information and research evidence from the midwife educator. In this situation they become, as Tate describes, 'the guide on the side rather than the sage on the stage' (Tate, 2004, p15).

### Reflection

Reflection is the key element drawing together all of the above activities. It is an essential aspect of the learning journey of all students, and particular emphasis is placed on this in the education of midwives and other health professionals (Pairman, 2006). In addition to reviewing previous experiences of infant feeding the process of considering the impact of personal perceptions on practice could also be said to encompass the notion of 'reflection before action' (Moon, 1999). This is essential in order to minimise the risks involved in poor clinical practice occurring as a result of lack of planning prior to care being delivered (Moon, 1999). It is recognised that personal experiences play such a crucial role in forming infant feeding perceptions (Angell et al., 2010). Consequently the role of reflection is emphasised at the start of the teaching sessions. Reflection is seen as

'a learning process that leads to new understanding of an experience or situation that should inform future learning developments'

(Jones and Alinier, 2009)

Reflection on personal attitudes or experience is an important aspect in the stated intended learning outcomes for the opening sessions of the programme. This is important because otherwise students might be unable to engage with learning materials that do not fit their viewpoint. As Moon (2004) points out there might be times where 'unlearning' is as important as learning more. Evidence shows that there are a number of commonly held views relating to breastfeeding, such as the perception that breastfeeding is an 'abnormal' behaviour, or that breastfeeding is always difficult (Brown et al.,

2011). Overlaying these ideas with new factual information could be very difficult, so it is essential to enable reflection and group discussion to recognise misconceptions and start to address them. In the context of infant feeding education many students might experience significant 'transformative learning' (Mezirow, 1978). This involves critical self-reflection, in which learners assimilate experiences, become aware of past assumptions or behaviour and reorganise ideas, or thus make new meaning for themselves (Kitchenham, 2008). For student midwives the last here is very significant, as without the ability to challenge existing perceptions and learn new concepts there is a risk that they might fail to learn the principles of evidence based practice around infant feeding, or might merely achieve surface learning and only apply the principles superficially (Biggs and Tang, 2007). The strategy employed has been guided by Kolb's (1984) theory of experiential learning. As such the use of student timelines, photographic stimuli and reflective activities guides students through this process of exploring their experiences and ideas, and reflecting on these. Discussion groups and use of case studies then promotes abstract conceptualisation, which for some may involve significant change and development. The next stages involve actively using these concepts to engage positively in learning about infant feeding, and later applying these to practice.

### **Evaluating the teaching strategy**

A routine evaluation of the infant feeding elements of the midwifery programme was conducted amongst students prior to qualification. This was not part of a formal research process, but student consent was sought for details of the evaluation to be published. Amongst students (n=45) completing

the midwifery programme 30 students felt that they experienced a change in their infant feeding attitudes during the programme. In addition, 18 'strongly agreed' that they had felt more positive about breastfeeding than formula milk feeding at the start of the programme, but by the end of the programme this has increased to 31 students. It is impossible, from this routine evaluation, to assess whether these changes would have occurred regardless of the introductory activities described here. Evaluating the impact of including the introductory activities described here in the infant feeding programme is challenging. The growth and development that is normally associated with a programme of education (Harden, 1999) may have achieved this without additional intervention. However, personal experience of teaching has led to the conclusion that, for some students, infant feeding education is susceptible to the learning barriers associated with 'alien knowledge'. As such, any evidence-based interventions which may mitigate those should be advantageous to student learning.

## **Conclusion**

This teaching and learning strategy developed from recognition of potential barriers for students around infant feeding education. Evidence relating to continuing education for qualified midwives has highlighted the potential issues for learning in this area (Taylor and Hutchings, 2012). Student midwives are likely to encounter similar challenges where the ability to learn about infant feeding is hampered by existing attitudes. The pedagogic literature provides a number of insights into the reasons why personal experience can be a barrier to learning, and possible methods for tackling these. It may be difficult to assess the impact of these in the short term,

because the educational experience offers so many potential triggers for change and development, making it difficult to isolate the effectiveness of individual activities. However, implementing the strategies suggested by the literature makes sound educational sense, and evaluation suggests that students participating in the programme experience positive attitudinal change. The literature suggests that this is a crucial step in being able to absorb, retain and apply factual knowledge. Of course, the crucial factor is whether, in the long term, students are able to achieve deep learning relating to infant feeding, and whether this remains intact and effective when confronted with the challenges of clinical practice.

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