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From attachment to attainment: The impact of nurture groups on academic achievement

Tommy MacKay, Sue Reynolds & Maura Kearney

The resurgence of nurture groups, from their early origins in Inner London in the 1970s, through a period of steady decline in the 1980s, followed by a new wave of interest in recent years, has raised a wide range of issues regarding the place of attachment in children's development and progress. Drawing from the early work of Bowlby, nurture groups were designed as an attachment intervention, and their benefits in enhanced emotional and behavioural adjustment have been widely demonstrated. Of particular interest to educational psychologists working in the context of schools is the relationship between attachment and attainment, and the possible impact of nurture groups on educational outcomes. In exploring that relationship this paper draws from ongoing work in Glasgow where, in a large-scale controlled study, a clear link between nurture groups and academic attainment was demonstrated for the first time. Guidance is also given to support education authorities in deciding where and when a nurture group should be set up.

THIS PAPER addresses four questions. First, what is the relationship between attachment and academic achievement? Second, what is the status of nurture groups as an attachment intervention? Third, do nurture groups have an impact on academic achievement? Fourth, does any impact on academic achievement arise from addressing attachment issues or from other aspects of nurture groups? The research context in which these questions are addressed is a large-scale controlled study of nurture groups in the City of Glasgow (Reynolds, MacKay & Kearney, 2009).

Attachment and academic achievement

There is an established relationship between attachment and academic achievement. This has been demonstrated for all age groups from the primary school stage through to school leaving age and beyond. In a longitudinal study of 121 7-year-old children, Jacobsen, Edelstein and Hofmann (1994) found that attachment variables predicted differences in cognitive functioning and on measures of academic achievement during middle childhood and adolescence, with assessments carried out at ages 9, 12 and 15

years. Similarly, studies by Pianta and Harbers (1996) and Teo et al. (1996) showed that attachment relationships and quality of early caregiving were robust predictors of school achievement both in primary and in secondary school.

In relation to an older sample, Learner and Kruger (1997) examined the contributions of both parent and teacher attachment to academic motivation in a sample of 150 high school students ranging in age from 16 to 19 years. They concluded that both primary attachment as represented by parents and non-family attachment as represented by teachers are important to academic motivation in this age group. In a review of the influence of attachment on completion of education, Marcus and Sanders-Reio (2001) concluded that the likelihood that children will complete their education is enhanced by their healthy attachment both to others and to 'key institutions' (p.427). Emotional bonds to parents broaden to peer and teacher relationships and also to the school setting, affecting academic progress. This is in line with Bowlby's assertion that attachment behaviour becomes increasingly directed 'towards

peers and other persons and institutions outside of the family' (Bowlby, 1987, p.207).

Subsequent work on the relationship between attachment and academic achievement has focused not on whether there is a relationship but rather on what are the factors that act as mediators of that relationship. Moss and St-Laurent (2001) studied attachment at school age and academic performance in a longitudinal study of 108 mother-child dyads. They found that the affective quality of the mother-child interaction at age 6 was a mediator between attachment and academic achievement at age eight. The quality of the mother-child interaction led in turn to a higher level of cognitive engagement and an increase in competent exploratory behaviour. This is consistent with earlier studies which showed an association between secure attachment in infants and toddlers and more active exploration and play engagement (Cassidy, 1986).

The importance of the affective dimension of the mother-child relationship in terms of cognitive development and academic achievement has been highlighted by Bus and her colleagues in a series of studies on mother-child interaction in the context of book reading with children age 11 to 66 months (Bus & van IJzendoorn, 1988, 1992, 1995, 1997). They showed that insecure children are less inclined to share a book with their mother, show less interest in the book and are subject to more disciplining by the mother. Exploration of the book by infants and young children is seen as a fundamentally social process in which mothers evoke, support and extend the referencing behaviour of their child. The early learning process in the domain of literacy is, therefore, embedded in the affective interpersonal context.

In a further study by Jacobsen and her colleagues of the same longitudinal sample as previously cited, Jacobsen and Hofmann (1997) first confirmed that attachment accounted for a significant increase of the predicted variance of academic achievement as objectively measured by grade point

average, even after the influence of control variables such as gender, IQ and socio-economic status had been considered. They then identified the variable of attention-participation in school as a mediating factor which partly, but not fully, accounted for increased grade point average at age 15. That is, attachment was significantly related to increased attention and participation in school, and this factor acted as a partial mediator of increased academic achievement.

Mediating factors are of particular relevance to the work of nurture groups. If nurture groups have an impact on academic achievement, a key issue is to ask what are the factors in a child's development that the groups effectively address and that then act as mediators for enhanced school performance by providing the substrate on which subsequent progress can be built.

Nurture groups as an attachment intervention

Nurture groups had their origin in educational psychology practice. The first nurture groups were set up in 1970 by Marjorie Boxall, an educational psychologist working in the Inner London Education Authority (ILEA) (Bennathan & Boxall, 1996). They addressed the needs of vulnerable children who were being excluded from school within weeks of arrival. Unprecedented numbers were being referred for professional help, virtually all of them described as being violent, aggressive and disruptive. The nurture groups aimed 'to provide a restorative experience of early nurture in the children's neighbourhood school' (Boxall, 2002, p.viii). Their success led to their spreading throughout ILEA, and by the end of the 1970s there were some 50 schools participating in the project.

However, the 1980s saw a decline in nurture groups. Several factors contributed to this, including the continuing move towards fully inclusive practice and a resistance to extracting children for special help following the Warnock Report (Department

of Education and Science, 1978), despite the specific commendation of nurture groups in the report itself (para. 5.30). Local government reorganisation also brought an end to ILEA. By the late 1990s a national survey indicated that the number of groups had fallen back to their 1970s level, with fewer than 50 groups throughout the UK (Cooper, Arnold & Boyd, 1999). It was also the 1990s, however, that provided the context for the resurgence of nurture groups. Many factors, practical, political and academic, contributed to this (Reynolds et al., 2009), and the last decade has seen growth in the number of groups to around 1000 (Nurture Group Network, 2010) as well as the development of an extensive research literature supporting them.

The earliest nurture groups grew out of an understanding of attachment and its significance for child development (Boxall, 2002), but it may reasonably be asked to what extent nurture groups do in fact represent an attachment intervention. Cooper, Arnold and Boyd (2001) sought to identify the key characteristics by which a nurture group might be defined. In doing so they found four different varieties of nurture groups in operation. Only two of these corresponded with the original Boxall model in terms of principles of attachment. The first was the classic Boxall nurture group, conforming in all respects with the original concept. The second was variants on the classic model which operated according to the same core attachment principles but differed in terms of structural or organisational features. Two others bore the name of nurture groups, but either did not conform to the original Boxall principles, or in fact contravened, undermined or distorted these key principles.

It is important, therefore, to consider whether nurture groups as they are normally understood in terms of conforming to the principles laid down by Boxall are in themselves an attachment intervention. Two key texts define these principles and the practices that derive from them (Bennathan &

Boxall, 1996, 2002). In terms of principles, what the nurture groups aimed to do was 'to translate the growing understanding of early developmental processes into educational practice' (Bennathan & Boxall, 1996, p.10). This understanding was rooted in the study of early mother-child relationships as exemplified particularly in the work of Bowlby (1973, 1980, 1987). These principles informed the entire foundation on which the classic nurture groups were built at three levels: first, they informed the understanding staff had of the nature and origin of the children's difficulties; second, they informed the processes of assessment; third, they informed the strategies by which the difficulties were addressed.

In terms of the understanding of the nature and origin of the difficulties, they were seen to be related to the stage in the earliest years when nurturing care was critically impaired, leading to a failure to form a secure attachment with the primary caregiver. While the nature of the difficulties varied, all seemed to stem from developmental impoverishment and loss in the first three years. As a result children arrived at school with severe problems in their emotional and behavioural adjustment. This was described as ranging from withdrawn, autistic-like behaviour at one extreme, to antisocial behaviour at the other, involving physical violence and disruptiveness. The central theme in understanding these varied patterns was an understanding of attachment.

In terms of the processes of assessment, this was based on what was then the 'Diagnostic Developmental Profile' and later became the Boxall Profile (Bennathan & Boxall, 1998). This developed from the early anecdotal records kept by the first nurture group teachers in regard to the behaviours displayed by the children. Again, these were construed within an attachment model in which behaviours reflected developmental needs which had not been met, leading to maladaptive responses by insecure children who were poorly organised and ill supported.

Section I of the profile is named 'Developmental Strands' and provides a description of the personal and social development of the child from 3 to 8 years. On the basis of an earlier statistical analysis, these strands were then collated into two clusters, 'organisation of experience' and 'internalisation of controls'. Section II, the 'Diagnostic Profile', consists of a range of non-adaptive items which form three clusters, 'self-limiting features', such as being self-negating, 'undeveloped behaviour', such as making undifferentiated attachments, and 'unsupported development', such as avoiding or rejecting attachment.

In terms of the strategies for addressing the difficulties, these flow naturally from the theoretical foundations used to inform understanding of the nature and origin of the issues arising and from their assessment:

'The nurture teacher's objective is to attach the children and provide support for clearly defined and manageable expectations and goals ... Security and attachment is bound into this process and from simple achievements stem the development of basic skills and competencies.' (Boxall, 2002, p.24)

There then follows, in all of the guidance for setting up and running a nurture group, a detailed account of the routines and procedures which must be followed.

That a classic nurture group is indeed an attachment intervention is clear. This model represents the foundation of the 58 nurture groups in the City of Glasgow, which provide the database from which this paper draws, as described in the overview by Reynolds et al. (2009) of their methodology and results. All of them were classic nurture groups established in conformity with the original pattern. Their staff received the standard four-day training in the theory, methodology and content which represent the underpinnings of nurture groups, and these underpinnings are comprehensively based on attachment.

Nurture groups and academic achievement

In terms of the impact of nurture groups on academic achievement or on areas directly related to it few studies have been conducted, and until very recently no study had reported any firm data. Nevertheless, improvements in social, emotional and behavioural development have been consistently reported and these provide a foundation from which enhancements in academic achievement might reasonably be expected (Binnie & Allen, 2008; Cooper & Whitebread, 2007; Cooper, Arnold & Boyd, 2001; Gerrard, 2005; O'Connor & Colwell, 2002; Reynolds et al., 2009; Sanders, 2007; Scott & Lee, 2009). Pupils with emotional and behavioural difficulties have high levels of educational under-achievement in relation to the core skills such as literacy and numeracy (Farrell, Critchley & Mills, 1999; Place et al., 2000), and reduction in these difficulties might, therefore, be associated with improvements in academic performance.

There are also indications that nurture groups lead to improved school ethos and increased capacity to support children (Binnie & Allan, 2008), as well as reduced staff absence and turnover, better behaviour management practice, more adaptation of teaching approaches, fewer permanent exclusions and better attendance (Sanders, 2007). This was highlighted in a retrospective study by Iszatt and Wasilewska (1997), who looked at the effects of nurture groups in terms of school placement. They reported that of 308 children who had attended six nurture groups in Enfield since the 1980s, 87 per cent were able to return to mainstream classes within one year. On follow-up several years later, it was reported that 83 per cent of the sample remained in mainstream placements with only four per cent requiring additional support beyond the school's normal resources. Comparison with a small control group of 20 children indicated that only 11 of these children were able to remain in mainstream with no additional support. Of the others, seven had required an alternative placement to mainstream.

In describing the benefits of nurture groups, Cooper and Whitebread (2007) referred to improvements associated with 'cognitive engagement in learning tasks'. They used this term in relation to one of the strands on the Boxall Profile, 'organisation of experience', which includes a range of features such as 'participates constructively', 'connects up experiences' and 'engages cognitively with peers'. Lack of controls meant that it was not possible to isolate nurture group effects from general improvements over time. However, Reynolds et al. (2009) demonstrated improvements on this strand for nurture group children in comparison with controls. This again provides support for the view that nurture groups help to develop the context in which children may make academic gains.

Sanders (2007) noted that two-thirds of staff ratings on a pupil assessment form indicated academic gains for children in nurture groups. Observations of the children and interviews with staff and parents suggested gains in terms of 'learning to learn' skills (p.56), and ability to accept adult requests and to focus on academic tasks with greater levels of concentration. The children also appeared able to work with higher levels of independence and to accept learning challenges more readily. In the nurture groups and in the classroom they were more engaged in whole class discussion and were contributing purposefully. Similarly, Binnie and Allen (2008) referred to academic progress. However, again there were no controls and in addition no formal measures, but simply that two-thirds of teachers had responded positively to a question on whether children had shown some level of academic progress while attending the groups.

In the first study to report a clear link between nurture groups and academic achievement, Reynolds et al. (2009) set up a large-scale investigation of 58 nurture groups in the City of Glasgow. From this sample it was possible to conduct a controlled trial based on 32 primary schools. Literacy development was selected as a

central indicator of academic progress, and was measured using the Baseline Assessment for Early Literacy, a research instrument trialled over a 10-year period with a population of over 33,000 children within the age range of the nurture group sample (MacKay, 1999, 2006, 2007). This instrument had high levels of reliability and validity, and was highly sensitive to measuring changes in performance in early reading readiness and literacy skills across the domains of concepts of print, phonological awareness, early reading skills and developmental tasks. Assessments were conducted by independent assessors employed for this purpose. Pre-post results were obtained for 186 children over a six-month period. Children attending the nurture groups showed significant gains in achievement compared with controls.

Seth-Smith et al. (2010) also reported gains in academic achievement for 83 children attending 10 nurture groups in comparison with a matched sample in five control schools. Academic achievement was measured by recording a single average score derived from each child's National Curriculum attainment in literacy and numeracy, or from a similar measure for children too young to be assessed on the National Curriculum. Children in the nurture groups showed more consistent gains than controls over a five-month period.

Nurture groups, attachment and academic achievement

It has been proposed, first, that there is a link between attachment and academic achievement, second, that nurture groups are an attachment intervention and, third, that nurture groups have an impact on academic achievement. It remains to examine whether the impact on academic achievement arises from addressing attachment issues or from other aspects of nurture groups. That is, do changes in attachment behaviour act as a mediating factor in the link between nurture groups and academic achievement?

While there is now a considerable body of research on nurture groups and their impact on children's development and behaviour, with more recent research as cited on the impact on academic achievement, and while it is acknowledged that nurture groups were established as an attachment intervention, it must be recognised that any beneficial effects may be the result of extraneous variables rather than of any direct impact on attachment behaviour.

The most obvious extraneous variable is class size. The effects of class size have been the subject of a very large and at times conflicting literature from the 1950s onwards. The US review by Robinson and Wittebols (1986) alone considered over 100 studies. More recently within a UK context this has been extensively researched by Blatchford and his colleagues (Blatchford, Russell & Brown, 2009), who have focused more on class processes and not simply the issue of class size in itself. While there are many factors to consider here, the trend of research has indicated that as class sizes become smaller there are more occasions when pupils are the focus of a teacher's attention, and more times when they are engaged in active interaction with teachers. The benefits of this are particularly apparent for the pupils who are already attaining at lower levels.

Class size may, therefore, have relevance to a number of the mediating factors in academic achievement for vulnerable pupils, such as engagement, attention and participation. However, given the severity of the problems faced by the most vulnerable pupils, such as those who are selected for nurture groups, it does not seem intuitively likely that a reduction in class size alone could address the issues that hamper academic achievement.

There is ample evidence to point to the importance of not only having small classes for the most vulnerable pupils but of dealing directly with their attachment issues. The ongoing work on nurture groups in the City of Glasgow has provided a vast database of findings relating to all aspects of children's

progress including their educational attainments. This database points consistently to changes in attachment behaviour as the main mediating factor for the impact of nurture groups on achievement. A stepwise multiple regression highlighted the Boxall Profile factor of 'unsupported development' as the largest single predictor of the variance in academic achievement, accounting for 23 per cent. This factor relates to 'a profound lack of early nurturing care, probably associated with intrusively negative experiences' (Bennathan & Boxall, 1998, p.19). It is described within a framework of ratings on 19 maladaptive items covering avoidance and rejection of attachment, an undeveloped and insecure sense of self, feelings of self-negativism, negativism towards others and a disregard for the needs of others. Reduced scores following intervention indicate improvements in these areas.

Two further items from the Glasgow findings together account for a further 29 per cent of the variance in academic achievement. These are the Boxall Profile factors of 'organisation of experience' and 'internalisation of controls'. Improved scores on the former describe a child who is 'organised, attentive and interested, and is involved purposefully and constructively in events, people and ideas' (Bennathan & Boxall, 1998, p.11). This is assessed across 18 items based on giving purposeful attention, participating constructively, connecting up experiences, showing insightful involvement and engaging cognitively with peers. Improved scores on the latter describe a child who appears 'emotionally secure, makes constructive, adaptive relationships, is able to co-operate with others, and has internalised the controls necessary for social functioning' (p.13). This is assessed across 16 items pointing to emotional security, being biddable and accepting constraints, accommodating to others, responding constructively to others and maintaining internalised standards.

In summary, the Glasgow findings indicate that more than 50 per cent of the vari-

ance in academic achievement is accounted for by changes in factors which relate directly to attachment behaviours. These changes provide the necessary context for promoting the enhanced achievement associated with secure attachment, which is characterised, as noted above, by an increase in competent exploratory behaviour, in attention and participation and in cognitive engagement.

Discussion

This paper has examined the relationships to be found among attachment, academic achievement and the impact of nurture groups. It is proposed that there is a clear link between attachment and academic achievement, that nurture groups directly address key attachment issues and that by doing so they have a beneficial impact on academic achievement.

The evidence for the link between attachment and academic achievement is extensive. Nurture groups have been described as an intervention that has been developed directly on the basis of attachment theory. An examination of the ways in which this is translated into practice provides a rationale for viewing nurture groups as being essentially an intervention capable of addressing key attachment issues. Thus, as might be expected, the fairly wide range of impact studies has consistently shown enhanced outcomes in areas of emotional and behavioural adjustment of central relevance to difficulties with attachment. While studies demonstrating the impact of nurture groups on academic achievement are few, with only two controlled studies reporting results on objective measures of achievement (Reynolds et al., 2009; Seth-Smith et al., 2010), the nature of this impact is becoming increasingly clear.

Reynolds et al. (2009) proposed a general agenda for research on nurture groups, setting out seven areas which might guide future studies in this field. Some of these are procedural and have broad implications for all studies. They include the need

for large-scale, randomised controlled trials, for greater statistical rigour, for exploring whether it is feasible to have blind assessment procedures and for objective measures using quantitative instruments across all areas of investigation. Others, which apply not only to studies in general but which have particular importance at this stage for studies relating to academic achievement, include the effects of class size and the use of different models to compare their impact with traditional nurture groups. As previously discussed, studies which control for the simple effects of small class size compared with nurture groups of corresponding size are crucially important.

However, at the present time it is also of crucial importance to investigate different models in comparison with traditional nurture group structures. Nurture groups are a costly intervention. This paper goes to press at a time of global financial instability and a significant economic 'downturn' in most countries in the world. Many countries are facing draconian cuts in public expenditure and these will apply across virtually every budgetary area including education. While there are economic as well as social and other arguments for investing in education (OECD, 2009), and in particular for reducing the financial cost of antisocial behaviour carrying across from childhood into adulthood (Scott et al., 2001), it is now of greater importance than ever to ensure that the gains offered by nurture groups academically and otherwise are delivered as economically as possible.

Future studies in this field require to be pursued along three distinct lines. First, it is necessary to look at the way in which nurture groups traditionally operate and how they are structured. Cooper and Whitbread (2007) have identified different models ranging from the classic Boxall nurture group to groups with different structures but committed to the same principles. Other researchers have investigated nurture groups which operate on a more part-time basis (Binnie & Allen, 2008). Second, research is

required into alternative structures to nurture groups where different types of facilities offer emotional and behavioural support which is less frequent or of shorter duration (see, for example, Cullen-Powell & Barlow, 2005; Renwick & Spalding, 2002). Third, it is necessary to look more systematically at the effects of incorporating the principles of nurture groups into regular mainstream classes. Some work of this kind has been carried out (see, for example, Colwell & O'Connor, 2003; Doyle, 2004; Lucas, 1999), but there is a need for controlled trials. It is also to be recognised that the establishment of nurturing schools does not need to be in competition with, but rather can be complemented by, the existence also of nurture groups where they are required.

Nevertheless, it is essential that any studies assessing less intensive interventions, such as those that are part-time, of shorter duration or operating within mainstream classrooms, are based on investigations into comparable populations. The children in the Glasgow study had very high levels of need in terms of their emotional and behavioural difficulties. In this respect they were similar to the extremely vulnerable children originally described by Boxall (2002). Some of the literature describes less intensive interventions, but a closer examination of the samples they were studying confirms that they were addressing children's needs at a significantly lower level of severity. This applies, for example, to the 'Quiet Room' model described by King and Chantler (2002). In a number of other studies it is clear that the needs of a vulnerable population are being addressed, but it is not clear how comparable they are with children in a classic nurture group in terms of severity of need. It would be unhelpful to promote a different or diluted model as an alternative to classic nurture groups if in doing so the difficulties of the most needy and vulnerable children could not be effectively addressed.

While nurture groups have been shown to have a beneficial impact both on

emotional and behavioural development and on academic attainment, it does not follow that they represent the ideal pattern of provision in all circumstances. The authors have seen examples of nurture groups which have been well established on a classic model of operation, but which have not represented appropriate educational provision or good value for money. This is because they have been set up in areas of low population density where the prevalence of more severe need has also been low. As a result, the children selected for the groups did not have needs at a level that would justify such an intensive provision, and these needs could have been addressed through other approaches.

On the basis of the research conducted to date, the following model of practice may serve as a guideline in supporting education authorities in their decisions as to how best to meet the needs of vulnerable children. It is based on three levels of provision which become increasingly intensive and, therefore, increasingly costly as the level of need increases. Each level is supported by research and review literature which gives practical guidance, examples of good practice or evaluations of effectiveness for the type of provision in question. First, for vulnerable children whose needs are not severe, it is expected that they can be catered for within their mainstream classes, with such additional support as may be at times required. To this end education authorities would benefit in general from endorsing the idea of 'nurturing classrooms' and 'the nurturing school' (see, for example, Colwell & O'Connor, 2003; Doyle, 2001; Doyle, 2004). Second, children whose needs are greater than can be fully accommodated within the provisions of a nurturing classroom could benefit from the extra support provided by the availability of other types of provision set up or delivered within the school (see, for example, Cullen-Powell & Barlow, 2005; Greenberg et al., 1995; Kelly et al., 2004; King and Chantler, 2002; Renwick & Spalding, 2002; Stallard et al., 2005).

Third, for children with the severe levels of need originally described by Boxall, they are most likely to benefit from the support offered in a classic nurture group (see, for example, Bennathan & Boxall, 1996; Boxall, 2002; Cooper & Tiknaz, 2005; Cooper & Whitebread, 2007; Newman, Woodcock & Dunham, 2007; Reynolds et al., 2009; Sanders, 2007).

These issues point to clear channels for future studies both by academics and by practising educational psychologists, who not only are to be credited with giving us the nurture group but who also have a key role

in advising education authorities on good practice in setting up different forms of provision which can then be systematically evaluated. In doing so, a significant contribution could be made in terms of the economic advantages of raising educational standards, while at the same time bringing significant benefits to many of our most vulnerable children and their families.

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