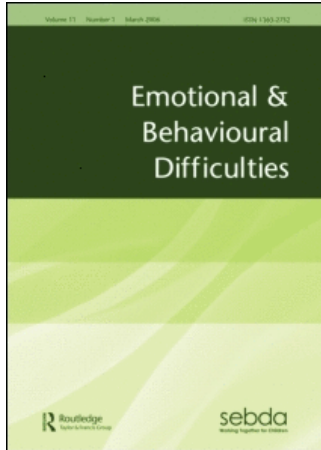


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## Emotional and Behavioural Difficulties

Publication details, including instructions for authors and subscription information:  
<http://www.informaworld.com/smpp/title~content=t716100710>

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Online Publication Date: 01 September 2007

To cite this Article: Cooper, Paul and Whitebread, David (2007) 'The effectiveness of nurture groups on student progress: evidence from a national research study',

Emotional and Behavioural Difficulties, 12:3, 171 - 190

To link to this article: DOI: 10.1080/13632750701489915

URL: <http://dx.doi.org/10.1080/13632750701489915>

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# The effectiveness of nurture groups on student progress: evidence from a national research study

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Nurture groups (NGs) are a form of provision for children with social, emotional, behavioural and learning difficulties. Although the first groups were established over 30 years ago, growth in the number of NGs in the UK has been exponential over the past ten years. This study attempts to assess the effectiveness of NGs in promoting positive social, emotional and educational development. The study set out to measure: (1) the effects of NGs in promoting pupil improvement in the NGs; (2) the extent to which these improvements generalised to mainstream settings; and (3) the impact of NGs on whole schools. Statistically significant improvements were found for NG pupils in terms of social, emotional and behavioural functioning. NGs which had been in place for more than two years were found to be significantly more effective than groups which had been in existence for less than two years. Pupils with SEBD in mainstream classrooms improved in behavioural terms significantly better than pupils with and without SEBD attending schools that did not have NG provision. The greatest social, emotional and behavioural improvements took place over the first two terms, whilst improvements in behaviours associated with cognitive engagement in learning tasks continued to improve into the third and fourth terms. This study suggests that NGs are a highly promising form of provision for young children with a wide range of SEBDs. There is also good evidence to suggest that successful NGs contribute to the development of the ‘nurturing school’.

Keywords: *Nurture groups; Effective intervention; SEBD*

## Introduction

This article deals with the University of Leicester Nurture Group Research Project. This is a national study of the personal, social and educational outcomes associated with NG placement that took place between 1999 and 2001.

### *The nature and development of nurture groups*

The guiding theory of nurture groups (NGs) is that many children who exhibit emotional and behavioural difficulties often experience emotions and exhibit

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behaviours that are developmentally inappropriate. Normal infant behaviour, it is argued, is characterised by extreme egocentrism, and a concomitant disregard for the needs and feelings of others. In order to progress from this state to the level of social competence that is required in the standard infant school classroom, the individual has to go through a nurturing process which equips them with the ability to meet their individual psychological needs through social interaction, through means that are compatible with the needs of others (Maslow, 1970). This process is essential to healthy psychological development in general, since without such progress individuals will be severely impaired in their ability to understand and regulate their behaviour, form relationships, and communicate with others. The process is also vital in laying the social and psychological foundations for learning as conceptualised from a sociocultural perspective (Bruner *et al.*, 1966; Vygotsky, 1987). Thinking about NG practice has been strongly influenced by Bowlby's attachment theory (Bennathan & Boxall, 2000; Cooper & Tiknaz, 2007). In this way NGs can be located in the tradition of developmentally informed types of provision (Bennathan & Boxall, 2000) such as Feuerstein's (1969) 'Instrumental Enrichment' Programme and the High/Scope programme (Berrueta-Clement *et al.*, 1984; Sylva, 1986; Sylva & Ilsley, 1992).

Central to a psychological understanding of and justification for NGs is a sociocultural theory of learning. Vygotsky's (1987) classic work in developing this theory provides us with the key insight that cognitive strategies in learning can be seen in terms of the internalisation of functions first experienced in social interaction. An individual's learning is guided by a more competent helper who provides direct support for the individual in the form of direct cues and cognitive 'scaffolding' (Bruner, 1987) which enables learners to use their existing knowledge as means of acquiring new knowledge and understanding. The helper also acts as a model for learning behaviours. The helper's adequacy as a facilitator of learning depends on their knowledge and understanding of the learner's existing state of knowledge and understanding in relation to the learning task, and on the extent to which this knowledge and understanding can be stretched towards mastery of new knowledge, that is, their Zone of Proximal Development (ZPD). Not only has this sociocultural theory of learning and teaching been shown to have explanatory power in both teachers' and learners' commonsense theorising about effective teaching and learning (Cooper & McIntyre, 1993, 1996), it has also been shown to enhance teachers' teaching performance and teaching effectiveness when it is incorporated into their practical pedagogical theorising through in-service training (Monro, 1999).

Noddings (1995), drawing attention to the implications of this theory for practical pedagogical applications, highlights the social-emotional components of trust and caring upon which, she argues, such instructional relationships depend. Noddings' construct of 'a caring pedagogy' is both illuminated and extended by the invocation of Attachment Theory (Bowlby, 1975). Bennathan and Boxall (2000) draw on this theory in their account of the psychological characteristics of pupils for whom NGs were initially devised. These characteristics include a range of developmentally

inappropriate behaviours that correspond with Bowlby's account of attachment disorders, including severe difficulties in engaging in productive social relationships (which may manifest themselves in either withdrawn and avoidant behaviour), coercive and aggressive behaviour, or erratic and disorganised behaviour. These problems are further compounded by serious difficulties in productive engagement in solitary activities, such as individual play, which often take the form of disorganised and unproductive engagement, inability to sustain attention and difficulties in self-direction and self-regulation. Geddes (2003) has also provided an attachment theory-based analysis of learning difficulties among children with SEN, and shown how many common features of learning difficulties that are often signified by the vague and stigmatising label of SEBD can be understood and remedied through an application of this perspective.

Following from attachment theory, NGs can be understood as a school-based learning environment specifically designed for pupils whose difficulties in accessing school learning are underpinned by an apparent need for social and individual experiences that can be construed in terms of unmet early learning needs (Bennathan & Boxall, 2000; Boxall, 2002). This is not to say that NGs are synonymous with a view that pathologises certain parents. The key insight here is that for some children the developmental processes associated with early attachment needs are incomplete when they reach the statutory age of school enrolment.

The NG is designed to provide pupils with an educational bridge to permanent and full-time placement in mainstream classrooms. This is achieved by combining features of a caring home environment with formal curricular demands. One of the crucial elements of the thinking underpinning NGs directly addresses the important distinction between the NG and family setting. Whilst NGs contain many of the features of a family setting (i.e. soft furnishings, kitchen and dining facilities) the preferred group size, according to the originator of NGs (Boxall, 2002), should have a lower limit of ten pupils (the upper limit is 12). Educationally, this is designed to give the pupils the experience of involvement in group activities, and to enable the teaching of group participation skills that will be necessary for successful engagement in a mainstream classroom. This measure also helps prevent the development of inappropriate child–adult attachments that might challenge the parent–child relationship. These aims are further supported by the requirement of the classic NG model that NG pupils remain on the roll of a mainstream class, attending for registration in the mornings and participating in mainstream class activities for at least one afternoon per week, and more during the period of phased reintegration that is sometimes deemed appropriate for returning pupils. Rather than attempting to mimic or usurp the parent–child attachment relationship, NGs are intended to produce a form of educational attachment. That is, within the confines of the educational setting, children are encouraged to develop trusting and caring relationships with adults, which are carefully focused on enabling pupils to learn and practice pro-social skills and engage in the challenges of formal curricular tasks.

Practical insights from attachment theory are exploited in a number of ways. The two adults are always present, and their patterns of interactions with one another are

designed to model positive social interaction and cooperation. The daily routine within the group is explicit, uniform and predictable. NG staff engage in intensive interaction (Nind, 1999) with individual pupils, at appropriate times throughout the NG day, and this is balanced with periods of group instruction. The 'classic' NG day is structured in accordance with the standard school day (see below). Periods of National Curriculum focus, such as literacy and numeracy sessions, are interspersed with various programmed activities, such as free play and structured physical activity. NG pupils also participate in break times with other pupils in the school. A crucial feature of the classic NG routine is 'breakfast'. This commonly occurs at mid-morning, and takes the shape of a formal dining experience in which staff and pupils share in a simple meal (usually toast and jam) and interact socially. The social and developmental targets for individual pupils are devised on the basis of psychometric assessment of their developmental needs and functioning (the Boxall Profile) (Bennathan & Boxall, 1998) and educational assessments. Individual learning tasks are determined on the basis of staff perceptions of pupils' current needs in relation to these data.

NGs are not a new form of educational provision. NGs were devised by Marjorie Boxall, a local authority educational psychologist, who set up the first groups in Inner London in the early 1970s (Bennathan & Boxall, 2000). They were established in response to what was seen as the alarming prevalence of emotional problems and disruptive behaviour among children entering infant and primary schools. There is evidence to support the observation that NGs, having gone through an initial period of popularity which lasted for the best part of a decade, dwindled in numbers, with many of the original groups being closed down (Bennathan & Boxall, 2000). A national survey (Cooper *et al.*, 1998) found fewer than 50 groups in the UK. Current (unpublished) evidence from the NG Network (NGN) database identifies over 300 groups throughout the UK. This figure reflects only those groups that have registered with the NGN. By the end of 2006, 3000 staff had attended the certificated four-day courses endorsed by the NGN, running in the Universities of Cambridge, Leicester and London (Institute of Education). These students are, overwhelmingly, active or imminent NG practitioners. Added to this is the fact that NG training courses are provided by an unknown number of local authority providers; for example, Staffordshire has had a training programme accredited by the University of Leicester in place since 1999, supporting approximately 50 NGs not registered with the NGN. This suggests that there are now many more than the 300 groups registered with NGN, indicating the development of a massive commitment to NGs among UK schools since the late 1990s.

There are many possible reasons for this development. A key event in the resurgence of interest in NGs is the publication of the first book on this topic by Marion Bennathan and Marjorie Boxall (2000), the first edition of which appeared in 1996. This book was very well received by a number of reviewers. The government responded very positively to this renewed interest in NGs, citing them as a promising form of educational intervention (DfEE, 1997). Other reasons for this renewed interest have to be sought in some of the negative effects of educational

practices that followed from the 1988 Education Reform Act in England and Wales. Over the decade of the 1990s the overall rate of permanent pupil exclusions from school increased by approximately 400%, with the highest rates of increase being found in the primary schools (Castle & Parsons, 1998). Recent findings suggest that SATs lead to increased stress levels among KS2 pupils (Connor, 2001, 2003). Other evidence suggests that this period is marked by increasing levels of stress and insecurity in schools which are reflected in perceptions of rising levels of emotional and behavioural difficulties among pupils and work overload among teachers, leading to severe problems in recruiting and retaining teaching staff in schools (Johnson & Hallgarten, 2002). It is reasonable to speculate that such circumstances are likely to exacerbate the difficulties experienced by pupils with attachment-type problems.

### **Existing research on NGs**

There has been limited research into the effectiveness of NGs. Published studies have tended to be retrospective and to chart the progress of pupils in NGs over time, often using the Boxall Profile (Bennathan & Boxall, 1998) as a measure of pupil progress. One often quoted study of this kind was carried out by Iszatt and Wasilewska (1997). The study found that, of 308 children placed in NGs between 1984 and 1998, 87% were able to return to the mainstream after a placement duration of less than one year. In 1995 this group was revisited, and it was found that 83% of the original cohort were still in mainstream placements with only 4% requiring SEN support beyond the schools' standard range of provision (Stage 3 and above of the 1994 SEN Code of Practice; 'Action Plus' level of provision under the 2002, revised SEN Code of Practice). Thirteen per cent of students in the original cohort were granted statements of Special Educational Need, and 11% were referred to special school provision. This finding was contrasted with data on a non-matched group of 20 mainstream pupils who had been designated as requiring NG placement but for whom places had not been found. A much higher level of persistent difficulties was found in this group, 35% of whom were placed in special schools and only 55% of whom were found, by 1995, to be coping in mainstream classrooms without additional support. In the absence of adequate matching measures it is difficult to interpret the significance of differences in outcomes for the two groups. However, the positive performance of the majority of the NG cohort was consistent with studies of staff perceptions of the effects of NG placement assessed in other studies which point to improvements in pupils' self-management behaviours, social skills, self-awareness and confidence, skills for learning and approaches to learning (Cooper & Lovey, 1999; Doyle, 2001; Boorn, 2002). O'Connor and Colwell (2002) assessed the performance of 68 five-year-old children placed in three NGs for a mean period of 3.1 terms. Using Boxall Profile data, they found statistically significant mean improvements in terms of cognitive and emotional development, social engagement and behaviours indicative of secure attachment. Boxall data were also reported on an opportunity sample (n=12) of the original cohort after two

years. Findings suggest that many of the improvements had been maintained, though there was evidence of relapse in some areas of emotional and social functioning. More recently, a study was carried out of 179 pupils aged between 5 and 7 years with SEBDs attending schools in Glasgow (Reynolds & Kearney, 2007). Approximately half of the group were attending NGs in 16 schools, and approximately half were attending 16 schools without NG provision. It was found that the NG pupils had made significant improvements in self-esteem, self-image, emotional maturity and attainment in literacy when compared to the group of pupils attending the schools without NG provision.

These studies point towards distinctive effects of NG placement on pupil progress, and suggest that positive progress in key areas of development targeted by NGs takes place during placement in an NG.

### **Preliminary to the current study**

Preliminary to the current project, a survey of NG provision in England and Wales was carried out (Cooper *et al.*, 1998) which identified common perceptions shared by adherents to the NG approach. The first of these was that the practical day-to-day work of the NG is rooted in an understanding of the developmental needs of children, the interdependence of social, emotional and cognitive factors, and a commitment to the fostering of positive healthy development. The second finding was that the work of the NG should be fully integrated into mainstream school and LEA policies and structures, so as to avoid the danger of NGs becoming an exclusionary form of provision. The third key point was that children's admission to, progress in, and eventual departure from the NG should be informed by the use of appropriate diagnostic and evaluative tools, such as the Boxall Profile. A further important finding was that there were four basic variations of the NG theme. These variants can be characterised in the following ways.

#### *Variant 1: the classic Boxall NG*

These groups accord in all respects with the model established by Marjorie Boxall (Bennathan & Boxall, 2000; Boxall, 2002). The Boxall NG represents an inclusive form of educational provision, involving the temporary and part-time placement (usually nine out of ten half-day sessions per week) of pupils in a setting designed to meet their specific developmental needs and promote their educational progress. In this model, pupils who attend the NG are exclusively selected from the mainstream roll of the school in which the NG is located. In order to maintain the pupils' sense of belonging to the school as a whole, the pupils remain on the roll of a mainstream class throughout their time in the NG. The NG pupils register with their mainstream class every morning, and are collected by NG staff after the registration period. For one afternoon per week pupils from the NG attend lessons with their mainstream class, whilst the NG staff engage in record-keeping activities and meet with parents. The main purpose of the NG placement is to enable pupils to return to mainstream

classes on a full-time basis. This normally takes place after three or four school terms, although, where appropriate, this can take place after one or two terms. Initial placement, target setting and the monitoring of pupil progress are facilitated through the use of the Boxall Profile. This is a normative diagnostic instrument designed to measure developmental status as well as social, emotional and behavioural functioning.

As has already been noted, the theoretical underpinnings of the NG approach demand a setting that requires opportunities for intensive interaction between adults and pupils, whilst enabling pupils to learn how to function as a member of a group. In order to facilitate these needs two adults—a teacher and teaching assistant—are required to staff groups composed of between 10 and 12 pupils.

The NG provides a holistic curriculum, incorporating the National Curriculum with a curriculum designed to address social, emotional and behavioural factors underpinning academic learning. As has already been noted, acknowledgment of the interconnectedness of social, emotional and cognitive development dictates the creation of a learning environment that combines homely features, such as soft furnishings, with features of the standard mainstream classroom, including play materials. Each school day is organised around a regular and predictable pattern of events that include formal curricular activities, based on the National Curriculum, combined with free play and social activities (such as the daily breakfast).

#### *Variant 2: new variant NGs*

Variants of this type are based on the principles underpinning the classic model but differ in structure and/or organisational features from the Boxall groups. One way in which the second variant differs is in terms of the amount of time pupils spend in these groups, which, in mainstream schools, can vary from half a day to four days per week. Other versions of this variant may serve a cluster of schools, rather than a single school, be located in a special school, or take the form of an off-site unit. One LEA covering a large geographical area has created a 'travelling NG', which moves from school to school. They may also vary in terms of the age range catered for. Classic groups cater for KS1 and KS2 pupils, whereas new variant NGs sometimes cater for KS3 pupils. Regardless of organisational differences, however, these groups retain core structural features, such as small group size, and staffing by a teacher and teaching assistant, and they adhere to the core principles of the classic approach in terms of developmental emphasis and the holistic curriculum.

#### *Variant 3: groups informed by NG principles*

These are groups which sometimes bear the name 'NG', or are claimed to be variants on the NG concept, but which often depart radically from the organisational principles of classic and new variant NGs. They may, for example, take place outside the normal curricular structure of the schools where they are located, taking the form of lunch-time, break-time or after-school groups. Or they may take the form of

'havens' or 'sanctuaries' that can be accessed by pupils at different times. These groups may be run by a single individual or a non-teaching adult (such as a teaching assistant, mentor or counsellor). The activities that go on in these groups will tend to focus on social and developmental issues but will tend not to have the academic emphasis of the classic and new variant groups.

#### *Variant 4: aberrant NGs*

These are groups which bear the name 'NG' or are claimed to be variants on the NG concept, but which contravene, undermine or distort the key defining principles of the classic NG. These will be groups that can be found in any of the above configurations but will lack an educational and/or developmental emphasis in favour of control and containment.

#### *The significance of variation*

The first two variants might be seen as genuine NGs. The third variant often provides important social and emotional support for pupils, though there is a danger that this form may be educationally marginalised. The fourth variant is potentially dangerous, by promoting a distorted image of the theorised NG.

### **Research questions**

The central aim of the research project reported below was to establish the effects of NG placement on student progress. The research questions were:

1. What are the effects of NGs on pupils' social, emotional and educational functioning?
2. How do differences between NGs affect pupil progress?
3. What is the impact of NGs on the mainstream schools they serve, in terms of NG staff perceptions and mainstream staff perceptions and practice?

The focus of the current article is question one. Questions two and three will be dealt with in a subsequent article.

### **Research design**

#### *Samples (1: quantitative data sources)*

The study is longitudinal in design, taking place over two years. During this time the progress of 546 (mean age: 6 years, 5 months) students was charted across a range of measures. In all, pupils from 34 schools with NGs were studied. These schools were spread across 11 LEAs of varying sizes, including rural, urban, unitary and metropolitan types. The LEAs are geographically diverse, representing English LEAs in the south-east, the Midlands, central northern and north-east England. The LEAs reflect varying levels of social deprivation, though all of the NGs represented

in this study were located in schools serving areas of relatively high deprivation and low educational attainment, as measured by KS1 and KS2 SATs results. All schools in this study were in the lowest quartile of the SATs league tables in their LEAs. The pupils are divided into five groups:

*Group 1.* (NG pupils): 359 pupils (males: 71.5%) attending NGs. This group is composed of:

- *Group 1a:* 284 pupils, attending 23 schools, in eight LEAs, who were recruited from established NGs (i.e. having been founded at least two years prior to September 1999). Twenty-two schools were for primary age children. Eighty-five per cent of the primary school children were aged between four and seven years, and 15% were aged between eight and ten years. Only one school catered for secondary age children. There were six KS3 children (aged between 13 and 14) in the secondary group, accounting for 2% of the total NG sample. Twenty-one of the 22 primary NGs conformed to the Classic/Boxall NG model, whilst the secondary group represents a Variant 3 NG (see above). The remaining primary NG was a Variant 2 NG, distinguished from the Classic form by running for only 50% (as opposed to 90%) of the school week.
- *Group 1b:* added to these is a group of 75 pupils, from three further LEAs, attending 11 newly established NGs (i.e. having been founded for two years or less by September 2000). Two of these groups were in secondary schools (Variant 3 NGs), the remaining eight in primary schools (six Variant 1 NGs; two half-time Variant 2 NGs).

*Group 2.* (Control Group 1): 64 pupils (males: 78.1%) with social, emotional and behavioural difficulties attending the same mainstream schools as Group 1a children, and matched to a random sample of Group 1a children in terms of age, gender and perceived academic ability.

*Group 3.* (Control Group 2): 62 pupils (males: 56.5%), perceived by school staff to have no social, emotional and/or behavioural problems, attending the same mainstream schools as Group 1a children, and matched to a random sample of Group 1a children in terms of age, gender and perceived academic ability.

*Group 4.* (Control Group 3): 31 pupils (males: 80.6%) with social, emotional and behavioural difficulties attending mainstream schools without NGs, and matched to a random sample of Group 1a children in terms of age, gender and perceived academic ability. (NB. Control Groups 3 and 4 were selected from four education authority districts where, at the time of the study, no NGs were in existence.)

*Group 5.* (Control Group 4): 27 pupils (males: 63%), perceived by school staff to have no social, emotional and/or behavioural problems, attending mainstream schools without NGs, and matched to a random sample of Group 1a children in terms of age, gender and perceived academic ability.

*Samples (2: qualitative data sources)*

Qualitative data were gathered by questionnaire from staff, parents and pupils in each of the 34 NGs. These data will be reported in a subsequent article.

**Research instruments***Quantitative*

Levels of SEBD were assessed and monitored for all the participants using the teacher version of the Goodman Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997, 1999), which was completed by mainstream teachers, and relates to pupils' behaviour as observed in the mainstream classroom setting. This is a 25-item behaviour screening questionnaire that measures five subscales: hyperactivity, conduct problems, emotional symptoms, peer problems (these four subscales contribute to a Total Difficulties score) and pro-social behaviour. Three sample items from the scale are:

- considerate of other people's feelings;
- restless, overactive, cannot stay still;
- often complains of headaches, stomach aches or sickness.

Respondents are required to tick a box indicating whether they believe each item to be 'not true', 'somewhat true', or 'certainly true' in relation to a specific child. In the context of the present study the SDQ is used to establish mainstream teachers' perceptions of each child's social, emotional and behavioural functioning. Standardisation data are provided by Goodman and Scott (1999).

In addition, students attending the NGs were assessed using The Boxall Profile (Bennathan & Boxall, 1998) (completed by the NG teacher). This is a detailed normative diagnostic instrument (Bennathan & Boxall, 2000), which can be used to measure a child's level of emotional and behavioural functioning, including behaviour associated with academic engagement. This instrument provides much greater detail than the SDQ and requires a considerable amount of time to complete. Hence it was not considered appropriate for use by mainstream staff or with controls in this study.

The Boxall Profile is divided into two sections: the Diagnostic Profile (34 items), which describes 'behaviours that inhibit or interfere with the child's satisfactory involvement in schools' (Bennathan & Boxall, 2000, p. 7), and the Developmental Strands (34 items) which describes 'different aspects of the developmental process of the earliest years' (Bennathan & Boxall, 2000, p. 7). A sample item from the Diagnostic Profile is:

- abnormal eye contact and gaze.

A sample item from the Developmental Strands is:

- listens with interest when the teacher explains something to the class.

Respondents score each item on a Likert-type scale. The scale for the Diagnostic Profile is as follows: 4=like this to a marked extent; 3=like this at times; 2=like this

to some extent; 1=only slightly or occasionally like this; 0=not like this. The scale for the Developmental Strands is as follows: 4=yes, or usually; 3=at times; 2=to some extent; 1=not really, or virtually never; 0=does not arise, not relevant. Each item is comprehensively defined in the accompanying handbook (Bennathan & Boxall, 2000). Positive progress over time on the Diagnostic Profile is denoted by a declining score, whilst positive progress on the Developmental Strands is denoted by a rising score. The Boxall Profile is routinely used by trained staff in NGs, and was used routinely by all of the NG staff in the current study. Information on the procedures by which the instrument was developed and standardised is provided in the handbook.

### *Procedures*

NG and Control Group 1 and 2 data were gathered over four consecutive terms. Control Group 3 and 4 data were gathered at the beginning and end of a period spanning two school terms. SDQ and Boxall data were gathered on all students when they entered the NG. These measures were repeated during the second and fourth terms of their attendance in the NG, or upon their full-time return to a mainstream class if this occurred sooner. Parent questionnaires were administered at the end of the first term of their children's attendance in the NG. Teacher and parent interviews were carried out twice over the period of the study. Academic progress data were gathered at the commencement of NG attendance and Boxall data. Comparison group data were taken over the same time scale using the SDQ only. Where the SDQ data were gathered on NG pupils this was provided by mainstream teachers only and is, therefore, an indicator of the NG pupils' perceived performance *in the mainstream setting*.

## **Results**

*Research question 1: what are the effects of NGs on pupils' social, emotional and educational functioning?*

Table 1 reports the changes in Goodman's Total Difficulties scores over the four terms that they were measured for the whole sample of NG children, Control Group 1 (the comparison group of children with SEBD in the NG schools, but who remained full-time in the mainstream classes), and Control Group 2 (the comparison group of 62 children without SEBD attending the NG schools).

Table 1 illustrates the difficulties the project encountered with attrition rates. In Term 1 there were 359 children in the NGs. By Term 2 only 301 of the original sample were available for assessment, and by Term 4 we were only able to collect data on 120 of the original sample. It should also be noted that the designation of pupils as having social, emotional and behavioural difficulties had been completed according to their normal procedures by the school staff before the start of the project. A small proportion of these pupils, when assessed with the Goodman SDQ, however, fell within the 'normal' range. Having said this, the overall picture indicates

Table 1. Goodman's Total Difficulties SDQ categories and mean scores for nurture group (Term 1: n=359; Term 2: n=301; Term 4: n=120) and mainstream children with SEBD (Term 1 and 2: n=64; Term 4: n=42), and without SEBD (n=62)

	Nurture group pupils (Group 1)		Mainstream pupils with SEBD (Group 2)		Mainstream pupils without SEBD (Group 3)	
	No.	%	No.	%	No.	%
<b>Term 1</b>						
Normal	43	12	10	15.6	61	98.4
Borderline	60	16.7	8	12.5	1	1.6
Abnormal	256	71.3 (88.0)	46	71.9 (84.4)	0	0 (1.6)
Mean SDQ score	19.33		17.83		2.65	
<b>Term 2</b>						
Normal	98	32.6	16	25.0	58	93.5
Borderline	55	18.3	13	20.3	4	6.5
Abnormal	148	49.2 (67.5)	35	54.7 (75.0)	0	0 (6.5)
Mean SDQ score	15.68		15.69		3.31	
<i>Term 4</i>						
Normal	40	33.3	11	26.2		
Borderline	18	15.0	11	26.2		
Abnormal	62	51.7 (66.7)	20	47.6 (73.8)		
Mean SDQ score	15.33		14.62			

Note: Goodman SDQ scores: 0–11=Normal; 12–15=Borderline; 16–40=Abnormal. Bold figures in brackets indicate sum of abnormal and borderline percentages.

that improvement in social, emotional and behavioural functioning (as observed by mainstream teachers when the pupils are in mainstream classrooms) was greater for the children in NGs than it was for the children in the same schools who were not attending NGs. Although NG pupils started with generally poorer Goodman SDQ scores, they appeared to improve more quickly than the children in the same school mainstream comparison groups (see Table 1). Table 1 reports the number of pupils in Groups 1 and 2 assessed as being in each Goodman SDQ category in Terms 1, 2 and 4 of the study (and Group 3 numbers for Terms 1 and 2), together with mean Total Difficulties SDQ scores (i.e. total scores on the Emotional, Conduct Problems, Hyperactivity and Peer Problems scales).

Statistical comparison of mean improvements in Total Difficulties SDQ scores found that the improvement rate for NG pupils was significantly greater than that for the non-SEBD controls. Comparing the difference in Term 1 and Term 2 scores for the 301 NG Group 1 pupils and the 62 non-SEBD Group 3 controls in the same schools for whom complete data were available, an independent samples t-test gave the result:  $t = -7.613$  (equal variances not assumed),  $df = 248$ ,  $p = .000^{**}$ . A chi-square analysis based on the proportions of pupils in the normal, borderline and abnormal categories confirmed this result, with a very significant change in the NG pupils' categories ( $X^2 = 36.163$ ,  $p = 0.000^{**}$ ), but none for the non-SEBD group ( $X^2 = 0.070$ ,  $p = 0.791$ ).

The difference in improvement rates between the NG children and Group 2 same-school SEBD control group pupils, however, was marginally not statistically significant. A comparison of Term 1 and Term 2 scores for the same 301 NG pupils and 64 SEBD control same-school pupils gave the result:  $t = -1.983$  (equal variances not assumed),  $df = 117$ ,  $p = .050$ . A chi-square analysis based on the proportions of pupils in the normal, borderline and abnormal categories also confirmed this result, with a significant change between Term 1 and Term 2 in the 64 Group 2 SEBD controls ( $X^2 = 17.898$ ,  $p = 0.001^{**}$ ) at a lower, but statistically similar level to that for the NG pupils.

Over the longer period from Term 1 to Term 4 the data on a much smaller group of pupils produce rather equivocal results. The Term 1/Term 4 comparison of SDQ scores with the 120 NG children for whom data were still available at that point and the remaining 42 Group 2 pupils for whom data were available gave the result:  $t = -.361$  (equal variances assumed),  $df = 160$ ,  $p = .719$ . However, chi-square analysis of the Term 1/Term 4 comparison showed a significant change at a lower level of statistical significance for the NG children ( $X^2 = 9.984$ ,  $p = 0.41^*$ ), but no statistically significant change for the remaining Group 2 children ( $X^2 = 2.181$ ,  $p = 0.702$ ). What is clear from examination of the mean Total SDQ scores reported in Table 1, however, is that whilst Total Difficulties SDQ scores improved for both NG and Group 2 SEBD same-school controls between Term 1 and Term 4, the period of greatest improvement for both groups is between Terms 1 and 2.

*Established vs new NGs.* However, a clear difference emerges between Group 1a children in established NGs, and the Group 1b children in newly established groups. When we focus on the pupils who attended the longest established groups (i.e. those which had been in existence for more than two years prior to the commencement of the study), and compare their progress with mainstream controls over the first two terms, we find their rate of improvement to be greater than that of the children in the newly established groups (see Table 2).

Thus we can see that at the point of entry into the established NGs (Group 1a), 91.6% of the NG children were reported to be not within the normal range as measured by the SDQ, as opposed to 74.7% of the children in the newly formed groups (Group 1b). However, within two terms this had reduced to 66.4% for the NG Group 1a children (a gain of just over 25%), but only to 70.7% (a gain of only 4%) for Group 1b. The difference in rate of improvement between NG pupils in Group 1a and both sets of controls was statistically significant. The improvement in Total Difficulties SDQ scores for the 226 pupils for whom there were complete data within the Group 1a NG children was still significantly different from that of the Group 3 non-SEBD controls ( $t = -8.156$  (equal variances not assumed),  $df = 249$ ,  $p = .000^{**}$ ), but was also significantly different from that of the Group 2 same-school SEBD controls ( $t = -2.718$  (equal variances not assumed),  $df = 132$ ,  $p = .007^{**}$ ). By contrast, for the 75 Group 1b children in the newly formed NG groups, the improvement in Total SDQ scores over the first two terms was just significantly different from the Group 3 non-SEBD controls ( $t = -2.001$  (equal variances not assumed),  $df = 128$ ,  $p = .048^*$ ), but was not significantly different from the Group 2

Table 2. Goodman's Total Difficulties SDQ categories and mean scores for pupils from established nurture groups (groups founded two years or more prior to study) (Term 1: n=284, Term 2: n=226) and newly formed groups (n=75)

	Established nurture group pupils (Group 1a)		New nurture group pupils (Group 1b)		Total nurture group pupils	
	No.	%	No.	%	No.	%
<b>Term 1</b>						
Normal	24	8.4	19	25.3	43	12
Borderline	49	17.3	11	14.7	60	16.7
Abnormal	211	74.3 (91.6)	45	60.0 (74.7)	256	71.3 (88.0)
Mean SDQ score	19.73		17.81		19.33	
<b>Term 2</b>						
Normal	76	33.6	22	29.3	98	32.6
Borderline	41	18.2	14	18.7	55	18.3
Abnormal	109	48.2 (66.4)	39	52.0 (70.7)	148	49.2 (67.5)
Mean SDQ score	15.47		16.33		15.68	

Note: Goodman SDQ scores: 0–11=Normal; 12–15=Borderline; 16–40=Abnormal. Bold figures in brackets indicate sum of abnormal and borderline percentages.

same-school SEBD children ( $t=0.646$  (equal variances assumed),  $df=130$ ,  $p=0.519$ ). Indeed, chi-square analysis based on the proportions of pupils in the normal, borderline and abnormal categories showed that the change between Term 1 and Term 2 for the Group 1b children was statistically significant ( $X^2=11.664$ ,  $p=0.020^*$ ), but at a statistically lower level than that for the NG group as a whole and the Group 2 SEBD controls in the mainstream classes of the schools containing the older, established nurture groups.

*Children with SEBD in mainstream classes in established NG schools (Control Group 2) v. children with SEBD in schools without NGs (Control Group 4).* Further confirmation of the effectiveness of the established NGs emerges when we compare the performance of the pupils with SEBD in mainstream classes in established NG schools with the performance of the group of mainstream pupils with SEBD in schools that did not have an NG. This comparison reveals major differences in pupil progress between these two groups over two terms (see Table 3).

The comparison of improvement in Total Difficulties SDQ scores of these two groups between Terms 1 and 2 revealed a statistically significant difference ( $t=-2.058$  (equal variances assumed),  $df=93$ ,  $p=.042^*$ ). This appears to be a consequence of the fact that not only have the pupils in NG schools improved from a mean rate of 84.4% falling into borderline or abnormal ranges, to 75%, but the pupils from the schools without NGs have actually declined in their mean performance, with their combined borderline and abnormal scores increasing from 93.6% to 100%. Chi-square analysis based on the proportions of pupils in the normal, borderline and abnormal categories confirmed this pattern. At the point of entry in Term 1 there was no statistically significant difference between these groups

Table 3. Goodman's Total Difficulties SDQ categories and mean scores for mainstream pupils with SEBD in established nurture group schools (n=64) and in schools without nurture groups (n=31)

	Mainstream pupils with SEBD in NG schools (Group 2)		Mainstream pupils with SEBD in non-NG schools (Group 4)	
	No.	%	No.	%
<b>Term 1</b>				
Normal	10	15.6	2	6.5
Borderline	8	12.5	3	9.7
Abnormal	46	71.9 (84.4)	26	83.9 (93.6)
Mean SDQ score	17.8		21.3	
<b>Term 2</b>				
Normal	16	25.0	0	0
Borderline	13	20.3	6	19.4
Abnormal	35	54.7 (75.0)	25	80.6 (100)
Mean SDQ score	15.7		21.6	

Note: Goodman SDQ scores: 0–11=Normal; 12–15=Borderline; 16–40=Abnormal.  
Bold figures in brackets indicate sum of abnormal and borderline percentages.

( $X^2=1.932$ ,  $p=0.381$ ). However, by the end of Term 2, a highly statistically significant difference had emerged ( $X^2=9.988$ ,  $p=0.007^{**}$ ), with fewer normals in the non-NG school than expected, but more than expected in the NG schools.

*Boxall Profiles.* Boxall Profiles relating to pupils' performance in the NG setting were completed for NG children by their NG teachers at the start of Term 1, and the end of Terms 2, 3 and 4. Tables 4, 5 and 6 report findings related to these scores over the four terms. It will be noted that the numbers of pupils for whom results are presented in these tables decreases with time, as a consequence of the attrition mentioned earlier in the article. These profiles also show significant improvement between Terms 1 and 2 (Table 4). The Boxall categories reflect many of the areas covered by the Goodman SDQ. In addition, one of the Developmental Strands of the profile deals with processes relevant to engagement with the learning activities and the curriculum. The strand labelled Organisation of Experience is divided into five sub-strands: 'gives purposeful attention'; 'participates constructively'; 'connects up experiences'; 'shows insightful involvement', and 'engages cognitively with peers'. The significant improvements noted on these items indicate that after two terms in the NG, pupils, in general, are better placed to engage effectively with learning activities in group situations.

Table 5 shows that highly statistically significant improvements occur between Terms 1 and 4 on all Boxall scores. Table 6, however, indicates that differences between Term 2 and 4 scores are on the whole less significant. This supports the findings of the Goodman data, to some extent, and indicates that improvements in behaviour are most marked in the first two terms. An important additional finding here is that significant improvements on the sub-strand Organisation of Experience

Table 4. Paired samples t-test for Boxall Profile scores for the nurture group children (n=253) in Term 1 and Term 2

	Term 1		Term 2		t	df	P
	Mean	SD	Mean	SD			
<b>Organisation of experience</b>	40.89	13.06	50.83	11.49	-12.64	252	.000**
<b>Internalisation of controls</b>	37.03	11.31	45.36	11.98	-11.03	252	.000**
<b>Self-limiting features</b>	9.92	4.94	7.89	4.65	6.81	252	.000**
<b>Undeveloped behaviour</b>	13.01	8.18	9.62	7.55	7.70	252	.000**
<b>Unsupported development</b>	28.65	16.83	23.83	16.24	5.61	251	.000**

*Note:* The Boxall Profile consists of 68 statements each scored 0–4. Organisation of experience comprises 18 items and scores 0–72; a lower score indicates greater difficulty. Internalisation of controls comprises 16 items and scores 0–56; a lower score indicates greater difficulty. Self-limiting features comprises six items and scores 0–24; a higher score indicates greater difficulty. Undeveloped behaviour comprises nine items and scores 0–36; a higher score indicates greater difficulty. Unsupported development comprises 19 items and scores 0–76; a higher score indicates greater difficulty.

continue between Terms 2 and 4. This suggests that whilst improvements in social, emotional and behavioural difficulties tend to be most marked in the first two terms, improvements in behaviour associated with engagement with learning tasks continue, for NG pupils, beyond this and into Term 4.

#### *A note on expectancy effects*

A concern at the outset of this project was that data might be affected by expectancy effects, whereby staff in schools might (wittingly or unwittingly) distort the data they provided in order to enhance the apparent effects of NG provision, particularly in terms of the comparisons in progress between NG and non-NG pupils. The introduction of Control Group 3 (matched pupils in schools without NGs) was intended initially to provide an index of the possible expectancy effect. However, the detailed findings are such that it seems reasonable to assert that no appreciable expectancy effect has been identified. This assertion is based on: (1) the differential

Table 5. Paired samples t-test for Boxall Profile scores for the nurture group children (n=86) in Term 1 and Term 4

	Term 1		Term 4		t	df	P
	Mean	SD	Mean	SD			
<b>Organisation of experience</b>	38.47	12.66	56.12	10.74	-10.88	85	.000**
<b>Internalisation of controls</b>	34.90	10.89	49.41	9.51	-11.17	85	.000**
<b>Self-limiting features</b>	10.44	4.53	6.58	4.88	5.70	84	.000**
<b>Undeveloped behaviour</b>	12.84	8.06	6.62	6.78	6.25	84	.000**
<b>Unsupported development</b>	27.96	16.03	20.52	16.00	3.97	84	.000**

Table 6. Paired samples t-test for Boxall Profile scores for the nurture group children (n=76) Term 2 and Term 4

	Term 2		Term 4		t	df	P
	Mean	SD	Mean	SD			
<b>Organisation of experience</b>	51.45	10.38	56.26	11.11	-3.78	75	.000**
<b>Internalisation of controls</b>	45.99	9.30	49.68	9.63	-3.58	75	.001**
<b>Self-limiting features</b>	7.62	4.58	6.95	5.05	1.01	75	.316
<b>Undeveloped behaviour</b>	9.59	7.48	7.38	7.28	2.41	75	.018*
<b>Unsupported development</b>	22.53	15.17	21.28	16.40	0.70	75	.488

effects of new and established groups (more established groups perform significantly better); (2) the discrimination of effects of NG placement on the different SEBD clusters<sup>1</sup> when they are assessed in the mainstream setting (acting out pupils' NG improvements generalise to the mainstream setting, whilst children with primarily social/emotional problems and children with hyperactivity as the central problem do not generalise improvements accrued in the NG to the mainstream). The subtlety of this effect challenges the accusation of an expectancy effect, not least because the NGs would be expected to be most successful with pupils exhibiting internalising problems; (3) the improvement of mainstream controls in the NG schools, which might be taken to undermine the effectiveness of NGs were it not for the dramatic difference in this group's performance when compared to that of the mainstream controls in schools that did not have NGs. The direction of an expectancy effect would have been more likely towards depressing the performance of mainstream controls, or, at least, enhancing the performance of NG pupils globally.

## Discussion

On the basis of the current study, NGs appear to have added significantly to positive work that mainstream primary schools do with SEBD pupils. An unexpected finding is that schools with NGs appear to work more effectively with pupils who have SEBD who do not attend NGs than schools where there is not an NG on site. Schools that have NGs achieve significantly higher gains for pupils with SEBD (both in the NG and in the mainstream) than schools which do not have NGs. In fact, in the current study, whilst mean rates of improvement in social, emotional and behavioural functioning were observed over four terms in NG schools (and most markedly in Terms 1 and 2), mean scores for matched pupils in schools without NGs declined over Terms 1 and 2. Both quantitative and qualitative data (as will be reported in the second paper) point to the strong possibility that the presence of an effective NG adds value to the work that schools do with the wider population of children with SEBD. The qualitative data in particular indicate that mainstream staff develop more 'nurturing' approaches to pupils on the basis of their interactions with NG staff. These interactions are supported by the tangible benefits accrued by NG pupils from their placement in the NG, which are reflected in their mainstream performance as observed by mainstream staff.

The complexity of factors involved in promoting the kind of institutional change suggested by these findings is immense. For example, we do not have data on the antecedent conditions in NG schools. One explanation for this whole-school effect might be that there was a state of readiness in these schools that encouraged staff to perceive the need for additional provision for children with SEBD and a philosophical bias towards the NG approach. An alternative explanation might be that classroom practices were influenced by the active presence of an NG and the communication among staff that went on around this presence. This issue will be dealt with in a subsequent article.

An important aspect of the NG effect, as measured by Goodman and Boxall data, is that improvements in social, emotional and behavioural functioning do not seem to improve significantly after Term 2. However, significant improvements in behaviours associated with engagement in educational tasks continue into the third and fourth terms. For pupils in NGs that have been established for two years or more, these improvements are of a statistically significant level, when compared to the improvements experienced by mainstream SEBD controls. This suggests that the effectiveness of NGs improves over time, as NG staff and the school as a whole become more expert in working with the NG approach. The more intensive experience of NG staff, it would seem, leads to increased competence over time.

The wider implications of these findings give us pause for thought about some of the taken-for-granted features of many mainstream classrooms. As was noted in the introduction to this article, the NG provides a setting highly conducive to the application of a social-constructivist approach to pedagogy. The fact that many pupils are enabled, after a relatively brief period of time in the NG, to generalise the social-emotional and academic engagement improvements accrued in the NG to the mainstream is encouraging, but it begs many questions. The findings of the study by O'Connor and Colwell (2002), for example, suggest that whilst the general improvement is maintained over the long term, there is some deterioration in performance in certain areas. These findings could be interpreted to suggest that, for generalisation and maintenance of effects to be optimised, pupils who have had a successful experience of NGs continue to require some additional support of a type that reflects key features of NGs that are not easily replicated in the standard mainstream classroom. These features are likely to include the high level of individualised interaction that takes place between staff and pupils across a range of social and academic activities, the small group size and the relative simplicity and predictability of the daily routine. If this is so, it implies the need for a careful review of certain fundamental assumptions underpinning the ways in which mainstream classrooms are structured and organised. In a further article we will explore ways in which insights from the current study might contribute to school development and individual professional development of staff.

## **Conclusion**

This study suggests that NGs are a highly promising form of provision for young children with a wide range of SEBDs. This confirms the findings of other,

retrospective studies, and adds insight into the differential effects of NGs in relation to the social, emotional and behavioural characteristics of pupils, particularly in terms of the relationship between these characteristics and the generalisation and maintenance of positive effects. There is also good evidence to suggest that successful NGs contribute to the development of what has been referred to as the 'nurturing school' (Lucas, 1999; Doyle, 2003). However, the possibility that the 'nurturing school' may not be able to cater effectively for certain pupils who do well in the NG when they are transferred to the mainstream may be taken to highlight the context-dependent nature of certain kinds of pupil difficulty, and the need for mainstream classrooms to be reconceptualised in a way that is informed by an understanding of educational nurturing.

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### Notes

1. The details of the cluster analysis that was carried out on the SDQ data will be reported in a subsequent article.

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