

# The effectiveness of Nurture Groups at supporting social and emotional outcomes: a systematic review

Bethan Jones<sup>a,b,\*</sup>, Henry Wood-Downie<sup>a,b,1</sup>, Dennis Golm<sup>a,1</sup>

<sup>a</sup> Centre for Innovation in Mental Health, School of Psychology, University of Southampton, UK

<sup>b</sup> Doctorate in Educational Psychology, School of Psychology, University of Southampton, UK

## ARTICLE INFO

### Keywords:

Nurture Groups  
Adverse childhood experiences  
School-based interventions  
Attachment

## ABSTRACT

**Background:** Nurture Groups are a school-based attachment-focused intervention for young people with social and emotional, or mental health needs who may have experienced adversity. The aim of the current review was to systematically evaluate the evidence for Nurture group provision to improve social and emotional outcomes in children and young people across primary and secondary school settings.

**Methods:** Studies were included if they had been published in a peer-reviewed journal, participants were children and young people of school age, the study design was quantitative, evaluating the effectiveness of a Nurture Group intervention and had at least one outcome measure related to social and emotional outcomes. Screening was conducted by the first author and a voluntary research assistant. Conflicts were resolved via discussion. A systematic search across six databases identified 14 studies for inclusion.

**Results:** Findings suggest that Nurture Group provision is, overall, effective at improving pupils' social and emotional outcomes. However, improvements were not found consistently across both sections of the Boxall Profile, the primary tool used to measure progress within Nurture Groups. Differential effects were also found in relation to some pupil-level characteristics, namely age, baseline score, and gender.

**Discussion:** The findings highlighted the need to conduct further research to examine such factors, as well as to explore the possible mechanisms for change underlying Nurture Group provision.

## 1. Introduction

In 2022, there were more than 250,000 pupils identified as having a social, emotional, or mental health (SEMH) difficulty (DfE, 2022). SEMH is a broad term that was first introduced in the Special Educational Needs and Disabilities (SEND) Code of Practice in 2014 and is used to define a range of difficulties that can manifest in many ways, including “becoming withdrawn or isolated, as well as displaying challenging, disruptive or disturbing behaviour” (DfE and DfH, 2015, p.98). This label replaced previously used acronyms BESD (Behavioural, Emotional, and Social Difficulties) and EBD (Emotional and Behavioural Difficulties), with the removal of the word ‘behaviour’ reflecting a shift in dominant policy discourse that emphasises a need to establish the underlying reason for the presenting difficulties. Within the global context, variants of these labels utilise the terms ‘disorder’, ‘disturbance’, ‘disability’, ‘problem’, and ‘difficulty’ with widespread inconsistency as to what is encompassed under each term. Such cross-national variation

is influenced by a complex range of factors, including cultural norms of emotional expression, as well as scientific, economic, and political decision-making (Lopes, 2014).

### 1.1. Prevalence and impact of SEMH difficulties

Whilst the lack of a common language creates challenges when operationalising concepts for high-quality research in this field, there is a consensus amongst many countries that SEMH difficulties amongst children and young people are increasing. In the United Kingdom (UK), the number of children with an Education, Health, & Care Plan (EHCP) whose primary need is SEMH has risen year on year from 12.3 % in 2016 to 15 % in 2022 (Department for Education, 2022). In the USA, the pattern appears similar, with the number of children displaying “behaviour or conduct problems” having increased by 21 % from 2019 to 2020 (Lebrun-Harris et al., 2022). Recent statistics suggest that the coronavirus (COVID-19) pandemic and the associated social restrictions

\* Corresponding author at: University of Southampton, School of Psychology (B44), Southampton SO17 1BJ, UK

E-mail address: [B.M.Jones@soton.ac.uk](mailto:B.M.Jones@soton.ac.uk) (B. Jones).

<sup>1</sup> The authors contributed equally to the manuscript.

have greatly exacerbated pre-existing challenges; the likelihood of children and young people in the UK having a mental health difficulty has increased by 50 % in the last three years to one in six ([The Children's Society, 2022](#)), with the British Medical Association (BMA) declaring in 2022 that “the mental health crisis in this country is spiralling out of control” ([BMA, 2022](#)).

This trajectory represents a growing concern for health and education professionals, as research clearly demonstrates the link between childhood SEMH difficulties and adverse outcomes, including peer problems, lower academic achievement, poor self-esteem, and higher rates of school absence ([Vaillancourt et al., 2013](#); [Panayiotou et al., 2023](#)) and school exclusion ([Parker et al., 2015](#)). Longitudinal research shows that if not adequately supported, SEMH difficulties can persist into adulthood ([Mulraney et al., 2021](#)) and have long-term consequences, including poor physical health and increased rates of alcohol dependence, criminal behaviour, and unemployment ([Shin et al., 2015](#); [Young et al., 2016](#); [Egan et al., 2015](#)).

### 1.2. Contributory factors to SEMH difficulties

Multiple factors are known to increase the likelihood of children developing SEMH difficulties. There is some evidence that biological characteristics, such as genetic predisposition and temperament, contribute to the risk ([Allegrini et al., 2020](#); [Paulus et al., 2022](#)). Additionally, it is well established that features of the environment have a crucial impact, with exposure to numerous types of early adversity (e.g., childhood abuse and neglect, socio-economic disadvantage, parental mental illness) playing a significant role in the development of SEMH difficulties during childhood and their persistence into adulthood (e.g., [Baldwin et al., 2023](#); [Hughes et al., 2005](#); [Miller-Lewis et al., 2013](#)). Recent evidence suggests that this association between adverse childhood experiences (ACEs) and poor health and wellbeing outcomes can also be transmitted intergenerationally, with maternal ACEs influencing the social-emotional outcomes of their children ([Cooke et al., 2019](#)).

There are several groups of children that are more likely to develop SEMH difficulties, one of which is children in local authority (LA) care. Care-experienced children and young people in England are approximately four times more likely to meet the criteria for a mental health condition than children in the general population. This finding is consistently replicated internationally, with a review of studies from North America, Australia, and Europe confirming that the scale of mental health difficulties experienced by children in care is exceptional and approaches that of the clinical population ([Tarren-Sweeney, 2008](#)). Traumatic experiences are particularly pervasive among care-experienced children and young people; indeed, it is typically the case that children are placed in LA care precisely *because* of ACEs ([Simkiss, 2019](#)). In 2021–2022, 66 % of children entered the care system in England, primarily due to abuse or neglect ([Department for Education, 2023](#)). Commonly, care-experienced children and young people have been exposed to a high number of ACEs ([Kerr-Davis et al., 2023](#)). As research suggests that experiencing more than one ACE has a cumulative negative effect on health outcomes, it is perhaps unsurprising that the SEMH needs of care-experienced children and young people are often extensive and complex, with problems frequently exacerbated by difficulties experienced whilst in care ([Lanier et al., 2018](#); [Ward et al., 2002](#)). It should be noted, however, that whilst ACE scores can be predictive of group differences in health, they have low predictive accuracy at discriminating between individuals who do and do not develop later health problems and, thus, should not be used deterministically at an individual level ([Baldwin et al., 2021](#)).

### 1.3. Attachment as a mechanism between ACEs and SEMH difficulties

Several developmental mechanisms have been posited as underlying the link between ACEs and SEMH difficulties (e.g., [Sheffler et al., 2020](#) for review of the literature). However, a mechanism for which there is

mounting evidence is the emotional bond, or attachment, between child and caregiver. Attachment theory, originally explicated by [Bowlby \(1969\)](#), proposes that early caregiving experiences influence development across the lifespan. The central tenet of the theory is that in order to maximise their chances of survival, infants are biologically predisposed to develop close bonds with their primary caregivers, as well as to seek proximity to those who can meet their basic safety and protection needs. According to the theory, the early experiences of infants are translated into a set of mental representations of their caregiver's likely behaviour, known as internal working models, which enable them to predict the behaviour of individuals ([Bowlby, 1969](#)). Attentive and consistent care that is sensitive to a child's needs and responsive to their cues leads to the formation of a secure attachment, as children learn that they can rely on their caregivers during times of distress and that they are worthy of receiving attention ([Bowlby, 1969](#)). Conversely, care that is inconsistent, rejecting, or low in sensitivity leads to the development of an internal working model that caregivers are unpredictable or untrustworthy and that they themselves are unlovable, creating an insecure attachment relationship and a negative perception of relationships and their self-worth. Internal working models operate from infancy onwards, meaning that attachment patterns can persist into adulthood ([Pinquart et al., 2013](#)).

### 1.4. Effects of secure attachment on SEMH

In addition to instigating enduring feelings and cognitions about relationships, secure attachments are thought to provide the ‘secure base’ from which children begin to develop foundational social and emotional skills. Attachment security is correlated with a range of pro-social behaviours in preschool children, including helping, sharing, and comforting ([Beier et al., 2019](#)), with *meta*-analytic evidence showing moderate effect sizes between early attachment security and children's social competence with peers ([Groh et al., 2014](#)). Attachment security to mothers also predicts friendship quality in adolescence through its effect on attachment security to friends ([Markiewicz et al., 2001](#)). Additionally, empirical studies indicate that early attachment significantly influences children's ability to regulate their emotions, with toddlers with more secure attachments to their caregivers being significantly more likely to independently use adaptive emotion regulation strategies during periods of frustration or upset (e.g., [Kim et al., 2014](#); [Smith et al., 2006](#)). Children who are securely attached to both parents are also less likely to have low self-esteem and are more likely to make good self-evaluations ([Bureau et al., 2020](#)), demonstrating that early attachment quality is crucial in shaping how children's representational models of the self are formed.

### 1.5. The effects of positive relationships with teachers

Since pioneering work by [Pianta \(1992\)](#) provided evidence for the value of relationships between children and non-parental adults in development, attachment theory has been applied to educational contexts to consider the influence of teacher-child relationships on a range of outcomes. Whether relationships with school staff members can truly be defined as ‘fully-fledged’ attachments has been contested (e.g., [Kesner 2000](#)), however, it is widely accepted that supportive, caring teacher-child relationships can play a significant role in development. Indeed, secure teacher-child relationships correlate positively with linguistic development, the psychomotor skills involved in school readiness, social competence with peers, academic motivation, and attention skills ([Commodari, 2013](#); [Commodari, 2013](#); [Howes and Ritchie, 1999](#); [Learner & Kruger, 1997](#)). These effects can be long-lasting, with longitudinal research providing evidence that early teacher-child relationships predict long-term academic achievement ([Hamre & Pianta, 2001](#)). Crucially, research also highlights the protective role that positive teacher-child relationships can have, particularly for children who have experienced adversity. [Forster et al. \(2017\)](#) found that strong

teacher–pupil relationships reduced prescription drug misuse in young people, with a much greater effect for adolescents who had experienced multiple ACEs. Interventions targeting the quality of children’s relationships with their teachers, therefore, represent an important opportunity for positively impacting the outcomes of children and young people.

### 1.6. Nurture Group provision as attachment-focused intervention

Nurture Group provision is one such intervention that aims to enhance relationships between children and school staff members as a way of improving SEMH outcomes for children who may have experienced adversity. Developed in the 1970s by educational psychologists Marjorie Boxall and Marion Bennethan, Nurture Groups were originally established in socially disadvantaged inner-city London primary schools in response to the high levels of violence, aggression, and disruption that young children were exhibiting upon school entry (Bennethan & Boxall, 1998, 2012; Boxall, 2002). Such complex needs could not be supported in the mainstream classroom, leading to an alarming number of exclusions and psychiatric referrals. Boxall posited that these difficulties had been caused by growing up in circumstances of adversity, often due to disabling levels of parental stress and a lack of resources, which had impeded the early learning that typically occurs through a trusting, attentive parental relationship. A Nurture Group was, therefore, intended to be a “restorative experience of early nurture” (Boxall, 2002, p. viii).

Whilst variation exists between Nurture Groups in differing contexts, some features are common to all. A Nurture Group is a discrete class within a school outside mainstream classrooms and is attended by a small group of children for part of the school day. The room is typically furnished to resemble both a home and school environment, with time spent within the setting intended to be slow-moving, routinised, repetitive, and predictable, featuring ‘domestic’ activities, such as eating breakfast together, as well as activities that allow the children to develop the social, emotional, and cognitive skills that underpin the National Curriculum (Boxall, 2002). A great emphasis is placed on the adults ‘modelling’ positive social and emotional skills, such as behaving cooperatively, sharing, resolving differences politely, and supporting others (Bennethan & Boxall, 2012).

Although the development of Nurture Groups was reported by Boxall (2002) not to be based on existing theories, it was later acknowledged that the Nurture Group principles were influenced by Bowlby’s (1969) attachment theory (Bennethan & Boxall, 2012). Providing an opportunity to build a trusting, nurturing relationship akin to that between a parent and child is one of the mechanisms of change that is argued to lead to improved SEMH outcomes for children in Nurture Groups (Boxall, 2002). A suggested theory of change behind Nurture Groups (Sloan et al., 2020) is depicted in Fig. 1. Nurture Group provision is thought to improve attachment bonds and subsequently increase socio-emotional wellbeing and behaviour in children and young people, putting them in a better position to engage with learning opportunities

and increase academic performance.

The underpinning theory, principles, and core features remain for the three basic variants of the Nurture Group model. However, they can differ in aspects of how they are run and managed. A ‘Variant 1’ Nurture Group, sometimes known as the ‘classic’ model, is attended by a maximum of 12 children and is staffed by both a teacher and teaching assistant, who are trained in the principles and practices of Nurture Group provision. Children spend the majority of each day in the Nurture Group, joining their mainstream class for key parts of the school day, such as registration, assembly, break and lunch time, home time, and any lessons that they are able to participate in, such as Physical Education (PE). Children typically attend the Nurture Group for three to five terms, after which they rejoin their mainstream class full-time. A ‘Variant 2’ Nurture Group has key organisational differences in terms of the amount of time children spend in the group (e.g., part-time), age range catered for (e.g., secondary), and type of educational setting it is located within (e.g., special school, off-site unit). A ‘Variant 3’ Nurture Group is a group that, despite bearing the name ‘Nurture’, departs “radically from the organisational principles of classic and new variant Nurture Groups” (Cooper & Whitebread, 2007, p. 177). There are currently over 2000 Nurture Groups in primary and secondary schools across the UK (NurtureUK, 2019a). Their success has been recognised by the UK government, with Ofsted, Northern Ireland’s Department of Education (DE), and Wales’s Department for Children, Education, Life-long Learning and Skills (DCELLS) providing written Nurture Group guidance for school staff (Ofsted, 2011; DE, 2020; DCELLS, 2010). While originally developed in a UK context, Nurture Group training has been provided to other countries, including, Canada, New Zealand, Malta, Greece, Japan, Australia, Romania and Ireland (NurtureUK, 2023).

### 1.7. Current review

In 2014, Hughes and Schlösser carried out a systematic review of the evidence examining the effectiveness of Nurture Groups. Their review, overall, provided evidence that Nurture Groups are effective at supporting the social-emotional outcomes of children with SEMH difficulties. However, the need for studies with a more robust methodology was highlighted, as was the need for research into secondary school Nurture Groups. Specifically, methodological shortcomings in some of the studies included small sample sizes, lack of (well-matched) comparison groups, unclear description of Nurture Group variant and insufficient description of the participant groups, and participants lost to attrition. No randomised controlled trials could be included in the previous systematic review.

Since publication of Hughes and Schlösser’s (2014) review, a number of studies measuring the effectiveness have been published, including two on secondary school Nurture Group provision and one large-scale evaluation. The aim of the current work, therefore, is to extend the work of Hughes and Schlösser (2014) by providing an update that includes the most recent evidence in the field. Specifically, our aim was to establish up-to-date and evidence-informed conclusions as to the extent



Fig. 1. Nurture Group theory of change.

to which Nurture Group provision impacts upon the social and emotional outcomes of children and young people.

## 2. Methodology

The present review was conducted following the “10-step roadmap”, as outlined by Boland et al. (2023). Following an initial period of planning, the review question was identified, scoping searches carried out, and a protocol written. A search strategy was then established, and bibliographic databases were searched. Search results were exported,

and title and abstract screening was completed. Full-text papers of all potentially eligible references were then obtained, screened, and selected. The exportation and screening process was managed using the online tool Rayyan. All relevant data from the included studies were extracted into a table, and each individual study was assessed for methodological quality, the results of which were tabulated. Finally, the data was synthesised using narrative synthesis.

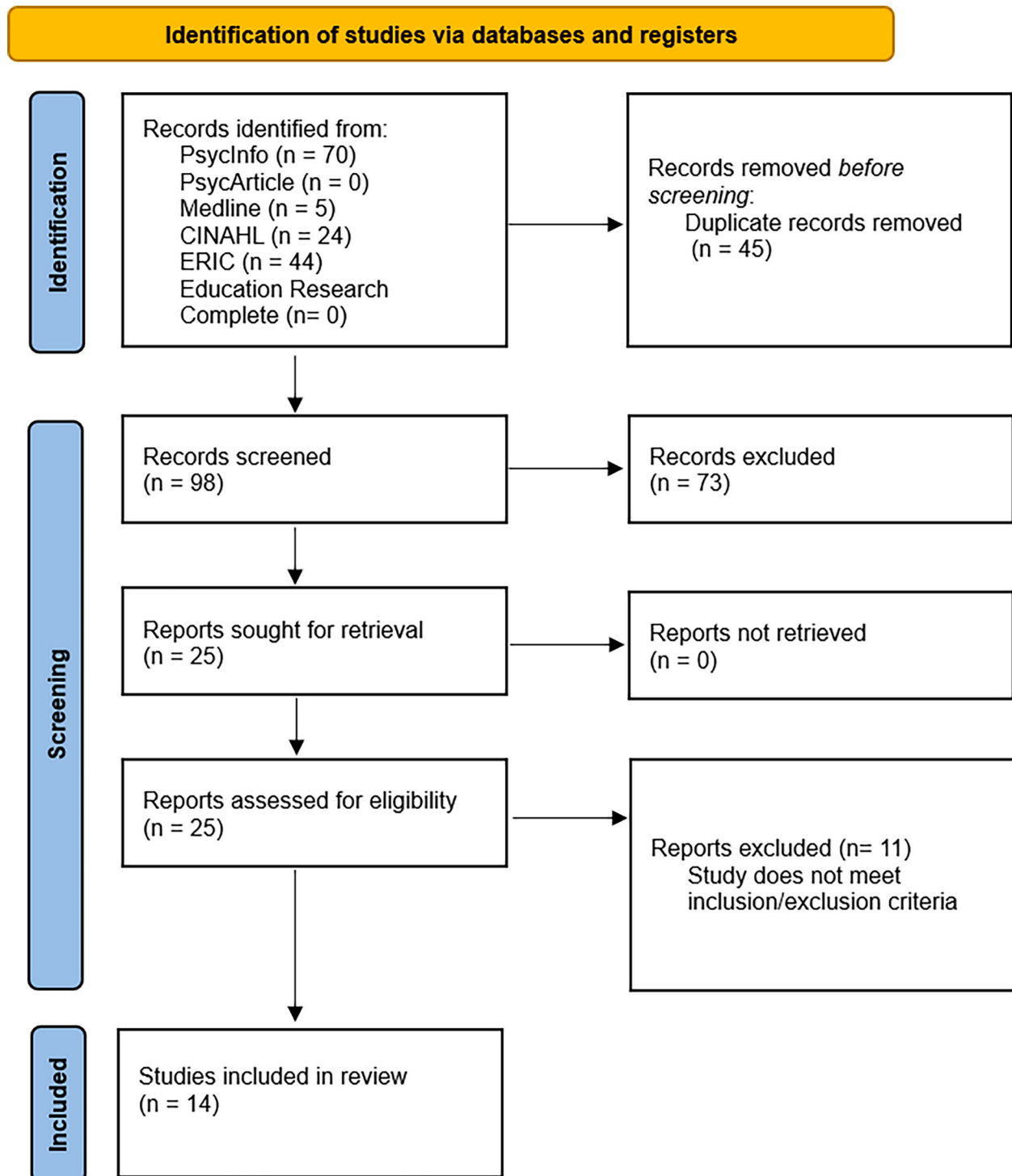


Fig. 2. PRISMA flow diagram (Page et al., 2021).



2.1. Search strategy

In January 2023, the studies included in this review were acquired through a systematic search of the published literature in the six electronic databases used by Hughes and Schlösser (2014): PsycINFO; PsycArticles; MEDLINE; CINAHL; ERIC; and Education Research Complete, with the search term ‘nurture group\*’, which was used by Hughes and Schlösser (2014). It was decided not to limit the search period by date (i. e., since the systematic review by Hughes and Schlösser (2014)) to be sure to include any articles that might have been missed by the original search. We also decided to include all identified articles for a comprehensive discussion of the evidence base. Lastly, we decided to use a different quality assessment for reasons discussed below (see 2.4).

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Page et al., 2021) process was followed to filter the identified records; Fig. 2 outlines the study selection process.

2.2. Selection criteria

As the aim of our review was to investigate the effectiveness of Nurture Group provision on social and emotional outcomes, this review only included studies that quantitatively measured the impact of Nurture Group provision on social and emotional skills. It is acknowledged that three studies included in Hughes and Schlösser’s (2014) review focused on examining particular strategies used by Nurture Group practitioners. However, these were considered beyond the scope of the present study and were, therefore, not included.

All articles were independently dual-screened during title, abstract, and full-text screening (by a member of the research team, BJ, and a voluntary research assistant) against the inclusion and exclusion criteria listed in Table 1, which related directly to the research question.

2.3. Data extraction and synthesis

Data from eligible studies were extracted into a supplementary table (see Table 2) and comprised: study design; the number, age, gender, and ethnicity of participants; the country and setting where the study took place; type of Nurture Group; outcome measures; methods of analyses;

and primary and secondary findings. Studies listed in Table 2 were ordered chronologically to make it easier to identify studies published since the previous review by Hughes and Schlösser (2014). Findings from the included studies are described in the narrative synthesis, which has been categorised according to the type of Nurture Group studied.

2.4. Quality appraisal

In their previous systematic review, Hughes and Schlösser (2014) used an adapted version of the Downs & Black checklist (1998) to appraise the quality of included studies. A recent systematic review, however highlighted this tool as not recommended and/or not commonly used anymore (Ma et al., 2020). We, therefore, used a tool deemed suitable for use by the same systematic review to be able to compare the quality across all included studies. Quality assurance of the final papers was conducted using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Quasi-Experimental Studies (Tufanaru et al., 2020), which consists of nine questions that can be answered with ‘yes’, ‘no’, ‘unclear’, or ‘not applicable’. This provided a framework for a qualitative summary of the relative methodological strengths and weaknesses of the studies (see Appendix A).

Author contributions

First author: Conceptualisation, data curation, writing- original draft.

Senior authors: conceptualisation, supervision, review and editing.

3. Results’

3.1. Study characteristics

3.1.1. Sample

The 14 included studies were conducted in England (n = 6), Scotland (n = 5), and Northern Ireland (n = 1). Two papers did not report location. All were published between 2001 and 2020. Ten studies took place in primary, infant, or junior schools; two took place in secondary schools; two took place in both primary and secondary schools. Three studies reported that the schools were located in areas of relatively high socio-economic deprivation.

3.1.2. Design

All 14 studies employed a pre-test-post-test design evaluating individual outcomes before and after Nurture Group provision. Eight studies included a comparison group. The majority of comparison groups were made up of children who had a similar level of need but did not receive Nurture Group provision, some within the same schools as the Nurture Group (Cooper et al., 2001; Scott & Lee, 2009) and some in different schools that were matched on key demographic factors (Sloan et al., 2020; Reynolds et al., 2009; Seth-Smith et al., 2010). One study (Cooper at al., 2001) had two control groups, one with children matched to the Nurture Group participants on demographic factors including SEMH, and one with children matched on demographic factors without SEMH difficulties. One study (Cooper & Whitebread, 2007) had four comparison groups. One study (Gerrard, 2006) reported that two control schools were selected after the experimental group had started.

The time between pre- and post- scores ranged from 3 months to 1 year. Two studies also used scores mid-intervention (Scott & Lee, 2009; Cooper and Whitebread, 2007), and one study (O’Connor & Colwell, 2002) included follow-up measures of a small sample of participants with a mean time lapse of 2.67 years after Nurture Group provision had finished.

3.1.3. Outcome measures

The majority of studies (n = 13) measured the SEMH needs of pupils using the Boxall Profile (Bennathan & Boxall, 1998; see Fig. 3 for detailed structure), with nine of these also using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). Some studies used

**Table 1**  
Inclusion and exclusion criteria.

Study Item	Inclusion Criteria	Exclusion Criteria
Population	Participants of school age (4–18 years old)	Non-school age participants
Study Design	Quantitative studies evaluating effectiveness of Nurture Groups	Evaluations of interventions without quantitative analysis
		Systematic reviews and meta-analysis
		Qualitative studies
Intervention	Nurture Group intervention (classic or Variant 2)	Interventions that are not Nurture Groups based on Boxall’s principles
Outcome Measures	A minimum of one outcome measure related to emotional wellbeing and/or social emotional skills	No measures of wellbeing or social emotional skills
Publication Requirements	Peer-reviewed journal articles	Articles published in non-peer reviewed journals
		Book reviews
		Grey literature

**Table 2**

Data extraction table.

Citation	Classic or Adapted NG	Design	Setting	Location	Sample	Variables & Measures	Analyses	Primary findings
Cooper at al. (2001)	Both (17 classic, 8 adapted – secondary school and/or part-time)	Pre- and post-intervention. 2 control groups. Control 1: matched for age, gender, educational attainment, and level of SEBD. Control 2: matched for age and gender but without SEBD.	25 state-funded schools (23 primary, 2 secondary)	8 LEAs in England. Diverse across geography and social deprivation.	N = 342 CYP (216 NG, 64 Control 1, 62 Control 2).  Of primary CYP, 84 % aged 4–7, 16 % aged 7–10.			
O'Connor & Colwell (2002)	Classic	Pre- and post-intervention.  Follow-up for 12 CYP (Mean time elapsed since exit = 2.67 years. Mean attendance = 3.1 terms).	2 infant schools and 2 primary schools	Enfield, London	N = 68 (N = 12 for follow-up).  Mean = 5.25 years  56 boys, 22 girls (Follow-up = 9 boys, 3 girls)	BP	t-tests (one-tailed)	T1-T2: Every sub-strand *. Greatest overall improvement in <a href="#">Section 1</a> (cognitive & emotional development). T1-T3: 10/20 sub-strands *, remaining 10n.s (indicating no long-term improvement). T2-T3: 16/20 sub-strands n.s. (indicating no 'relapse'). Sub-strands C, W, X, and Z * indicating 'relapse'.
Gerrard (2006)	Not specified	Pre- and post-intervention.  Post measures 3–30 months after entry.  Control group (CYP matched on SEBD symptoms).	17 schools (15 NG, 2 control)	Glasgow, Scotland	BP: 119 (108 NG, 11 control)  SDQ: 144 (133 NG, 11 control).  Exclusion criteria were EAL or learning difficulty	BP  SDQ	Analyses not reported	BP: 8 out of NG CYP did not significantly change behaviour entirely or in part. No control CYP showed significant change in behaviour.  SDQ: 11 out of 15 schools improved scores in NG. No control CYP showed significant change. SDQ: Term 1 – Term 2: Rate of improvement greater for NG CYP than non-SEBD same-school controls. N.S for SEBD same-school controls. Term 1-Term 4: * at lower sig. level for NG children (p = 0.41) but N.S for same-school SEBD controls. Greater improvements for children in longer-established NGs.
Cooper & Whitebread (2007)	Classic and adapted (secondary school and/or part-time)	Pre-, mid-, and post-intervention (4 measurement points)  4 control groups	34 schools (primary and secondary)	11 LEAs in England.  Schools of varying sizes. Rural, urban, unitary, and metropolitan types. Areas of high deprivation and low educational attainment.	N = 546.  Mean = 6 years, 5 months.  NG CYP: 71.5 % male, Control 1: 78.1 % male, Control 2: 56.6 % male, Control 3: 80.6 % male, Control 4: 63 % male	BP  SDQ  Staff, parent, and pupil questionnaires	Independent samples t-tests and chi-square analyses	BP: * for NG CYP on all 5 sub-strands Term 1–2 and Term 1–4. For Term 2–4, sub-strands 'self-

(continued on next page)

Table 2 (continued)

Citation	Classic or Adapted NG	Design	Setting	Location	Sample	Variables & Measures	Analyses	Primary findings
Sanders (2007)	Adapted (part-time)	Pre- and post-intervention.  Attended NG for 2.5 terms.  Matched control group.	3 mainstream infant and primary schools (2 NG, 1 control).  Control school matched on size, levels of deprivation, and levels of SEN	Hampshire, England	N = 29 (17 NG, 9 control).  Year R & KS1  NG: 6 girls, 11 boys  Control: 4 girls, 5 boys	BP	t-tests	limiting features' and 'unsupported development' N.S. Most improvements between Term 1 and 2 (BP and SDQ). 51 % NG CYP returned to classroom post-NG without additional support.  NG: 12 sub-strands of BP * at $p < 0.001$ , 2 sub-strands * at $p .01$ , and 5 sub-strands n.s (R, S, U, Y, Z – all in Diagnostic Profile).  Control: 1 sub-strand * ('shows insightful engagement').  Difference between NG and control * at $p < 0.05$ . BP: * scores on Developmental Strand and Diagnostic Profile across all schools. * overall group mean difference for all 5 sub-strands after NG.  BIOS: *
Binnie & Allen (2008)	Adapted (part-time – maximum of 4 mornings per week)	Pre- and post-intervention (8 month gap).	6 schools	1 LEA	N = 36 (28 male, 8 female)  Mean age = 7 years, 2 months (SD = 1.57)	BP  SDQ (teacher and parent versions)  BIOS  Parent and staff questionnaires	t-tests	SDQ: * Developmental strand: "clear improvements" in all strands; some post scores still not in 'normal' range. Diagnostic Profile: Improvements in some areas but not others. Scores reported for group as whole. BP: * for all 5 strands for NG in comparison to control group – significance levels $p = 0.003$ to $p < 0.001$ .  SDQ: Trend in right direction but results n.s. for NG compared to control group.  BIOS: * for NG compared to control group. NG CYP had greater gains in all areas assessed – greatest gains between Oct
Cooke et al. (2008)	Adapted (secondary school)	Pre- and post-intervention (1 year gap) and case study.	1 mainstream secondary school	Not reported	Year 7 and 8	BP	No evidence of statistical analyses.	SDQ: * Developmental strand: "clear improvements" in all strands; some post scores still not in 'normal' range. Diagnostic Profile: Improvements in some areas but not others. Scores reported for group as whole. BP: * for all 5 strands for NG in comparison to control group – significance levels $p = 0.003$ to $p < 0.001$ .  SDQ: Trend in right direction but results n.s. for NG compared to control group.  BIOS: * for NG compared to control group. NG CYP had greater gains in all areas assessed – greatest gains between Oct
Reynolds et al. (2009)	Not specified	Pre- and post-intervention.  Post measures 6 months after entry.  Matched control group.	32 primary schools (16 NG, 16 control).	Glasgow, Scotland	N = 221 (142 boys, 79 girls)  5–7 years	BP  SDQ  BIOS  Literacy assessment	2x2 ANCOVA (Bonferroni adjustment); Stepwise multiple regression (assessed contribution of factors in BP, SDQ & BIOS to change score in baseline assessment)	SDQ: * Developmental strand: "clear improvements" in all strands; some post scores still not in 'normal' range. Diagnostic Profile: Improvements in some areas but not others. Scores reported for group as whole. BP: * for all 5 strands for NG in comparison to control group – significance levels $p = 0.003$ to $p < 0.001$ .  SDQ: Trend in right direction but results n.s. for NG compared to control group.  BIOS: * for NG compared to control group. NG CYP had greater gains in all areas assessed – greatest gains between Oct
Scott & Lee (2009)	Adapted: part-time (5 half days per week, except	Pre-, mid-, and post-intervention (Oct, Feb, May).	4 primary schools in 1 LEA.	Scotland	N = 50 (25 = NG, 25 = control)  4–10 years	BP  Literacy & numeracy	Aggregated gains compared between NG and control.	SDQ: * Developmental strand: "clear improvements" in all strands; some post scores still not in 'normal' range. Diagnostic Profile: Improvements in some areas but not others. Scores reported for group as whole. BP: * for all 5 strands for NG in comparison to control group – significance levels $p = 0.003$ to $p < 0.001$ .  SDQ: Trend in right direction but results n.s. for NG compared to control group.  BIOS: * for NG compared to control group. NG CYP had greater gains in all areas assessed – greatest gains between Oct

(continued on next page)

Table 2 (continued)

Citation	Classic or Adapted NG	Design	Setting	Location	Sample	Variables & Measures	Analyses	Primary findings
	one that was 4 half days)	Control group (CYP from mainstream class matched on age, gender, and learning/behavioural concerns).	In areas of deprivation.		NG: 19 male, 6 female. Control: 13 male, 12 female	assessments Motor skills assessments Data on changes in incidence of negative playground incidents and negative contacts with home Teachers' weekly diary and case study on 1 child per school	* at $p < 0.01$ for diagnostic profile of BP and $p < 0.05$ level for developmental strands of BP.	and Feb. Younger CYP benefitted more – only Primary 1 CYP showed * difference in BP
Seth-Smith et al. (2010)	Classic (full-time, 4.5 days per week) NG staff had mean of 2 years' experience and attended training	Pre- and post-intervention. Post measures given 23 weeks after entry (mean). Control group.	10 NG schools and 5 control schools in 1 LEA. Socially diverse populations in semi-rural and outer-city areas with high levels of deprivation	South-east England	N = 83 (44 NG, 39 control). NG: 28 male, 16 female. Control: 26 male, 13 female CYP 4–8 years (mean = 5 yr 9 mo). Control matched for gender and ethnicity	BP SDQ Academic attainment measures	Mixed effects linear growth curve models for all outcome variables using a multi-level mixed-effects linear regression.	SDQ: * change on 3 subscales for NG CYP – 'hyperactive' scale, 'peer problems' scale, and 'pro-social' scale but not 'emotion' scale or 'conduct' scale.  BP: 'organisation of experience' * in NG and control group, but consistently more in NG. Same pattern for 'internalisation of controls' but smaller advantage of NG. No change in 'undeveloped behaviour'. 'Unsupported development' substantially decreased for NG, less consistently for control group. 75 % of BP items improved significantly post-intervention
Shaver & McClatchey (2013)	Adapted: part-time (1.5-3hr per day). NGs running min. 1 year. Staff from 2 NGs attended NG training.	Pre- and post-intervention. Post measures 8 weeks to 1 year after entry.	2 primary schools	Scotland	N = 33	BP	Paired samples t-test	
Grantham & Primrose (2017)	Adapted (secondary school)	Pre- and post-intervention.	7 secondary schools	Glasgow, Scotland	N = 24	BPYP	Paired samples t-tests	* increase in 8 out of 10 items in Developmental Profile post-NG. Only 1 strand out of 10 * in Diagnostic Profile
Cunningham et al. (2019)	Adapted (part-time and secondary)  All groups met NG Network Quality Mark Award criteria	Pre- and post-intervention. Post measures 15 weeks after entry.	5 primary schools	England	N = 16 (9 male, 7 female).  CYP aged 6.0 and 9.75 years (mean = 7.35 years, SD = 1.14).  15 White British, 1 Asian.	Social skills measures: Child Role Play Measure (CRPM) and Taxonomy of Problematic Social Situations (TOPSS)	Reliable Change Index calculated for TOPPS scores.	Lower mean scores on TOPSS and higher scores on CRPM at Time 2 indicating improvement in scores. Change approaching * with medium effect size.  9 CYP showed

(continued on next page)



Table 2 (continued)

Citation	Classic or Adapted NG	Design	Setting	Location	Sample	Variables & Measures	Analyses	Primary findings
Sloan et al. (2020)	Classic and adapted	Pre- and post-intervention.  Control group (non-randomised).	30 primary schools (with NGs) and 14 matched primary schools (no NG)	Northern Ireland, UK	3 from military families.			positive reliable change in TOPSS scores. 4 CYP showed no reliable change, and 3 CYP showed negative reliable change.
					Majority of CYP receiving additional support for phonics, numeracy or handwriting. 2 CYP receiving occupational therapy. 0 CYP had previously attended NG.			
					N = 384	BP	Multi-level regression models and exploratory analyses (not specified) of school-level and pupil-level variables.	BP: All 5 strands * when NG compared to control, $p < 0.001$ . Large effect sizes for Developmental Strand ( $g = 1.352$ ) and Diagnostic Profile ( $g = -0.904$ ).
					5–6 years	SDQ		SDQ: All 6 strands * when NG compared to control, $p < 0.001$ . Large effect sizes for Total Difficulties score ( $g = -1.303$ ) and Prosocial Behaviour score ( $g = 0.926$ ).
					NG: 64 % male Control: 70 % male	School attainment data  School enjoyment measure		School size possible mediating variable (CYP in small schools made more progress on both strands of BP and 3 out of 6 strands of SDQ).
					NG group had higher proportion of children that were: eligible for free school meals; in care; known to social services; and/or on child protection register. Higher proportion of pupils in control group were from minority ethnic backgrounds and EAL. Controlled for in main analysis.			CYP with lower baseline scores made more progress. Larger effect in reduction of Total Difficulties, Emotional Symptoms and Peer Problems on SDQ for girls.
								No differential effects found for NG level characteristics.

*Note.* List of included abbreviations: NG= Nurture Group; \* = statistically significant; N.S. = non-significant; BP = Boxall Profile; BPYP = Boxall Profile for Young People; SDQ= Strengths and Difficulties Questionnaire; BIOS = The Behavioural Indicators of Self-esteem Scale; CYP= Children and Young People; LEA = Local Education Authority; SEBD= Social, emotional, and behavioural difficulties; EAL = English as an Additional Language; KS1 = Key Stage 1; T1 = Time 1; T2 = Time 2; T3 = Time 3.

other additional measures, including the Behavioural Indicators of Self-Esteem scale (BIOS; Burnett, 1998) (Reynolds et al., 2009); questionnaires for school staff, parents, and/or pupils (Cooper & Whitebread, 2007; Binnie & Allen, 2008); semi-structured interviews of parents and pupils (Cooper et al., 2001), a school enjoyment survey for pupils designed by the authors (Sloan et al., 2020); and records of 'negative playground incidents' and 'negative contacts with home' (Scott & Lee, 2009).

One study (Cunningham et al., 2019) specifically measured only the social skills of participants, using the Child Role Play Measure (CRPM; Dodge et al., 1985) and the Taxonomy of Problematic Social Situations (TOPSS; Dodge et al., 1985).

### 3.1.4. Methodological quality

A graphical overview of methodological quality is available in [Appendix A](#). To summarise, all studies made clear the 'cause' and 'effect'

Developmental Strands	<b>Organisation of Experience</b>
	A. Purposeful attention
	B. Constructive participation
	C. Connects experiences
	D. Insightful involvement
	E. Cognitive engagement
	<b>Internalisation of Controls</b>
	F. Emotionally secure
	G. Accepts constraints
	H. Accommodates to others
Diagnostic Profile	I. Constructive responses
	J. Maintains standards
	<b>Self-limiting Features</b>
	Q. Disengaged
	R. Self-negating
	<b>Undeveloped Behaviours</b>
	S. Undifferentiated attachments
	T. Inconsequential behaviour
	U. Craves attachment
	<b>Unsupported Development</b>
	V. Avoids/rejects attachment
	W. Insecure sense of self
	X. Negative towards self
	Y. Negative towards others
	Z. Wants, grabs, disregards others

Fig. 3. Structure of the Boxall Profile.

variables, and all but one study (Gerrard, 2006) that used a control group(s) ( $n = 7$ ) ensured that the participants included in any comparisons were similar. However, only one study (Cunningham et al., 2019) provided clarity around the interventions and support that participants included in comparisons were receiving. The level of detail provided to determine appropriate statistical analyses was unclear across the majority of studies ( $n = 10$ ), whilst two studies provided no evidence of statistical analysis (Gerrard, 2006; Cooke et al., 2008). Only three studies measured outcomes at more than two time points (Cooper & Whitebread, 2007; O'Connor & Colwell, 2002; Scott & Lee, 2009). Several of the studies suffered from high attrition rates, and these were not always adequately explained (Cooper & Whitebread, 2007; Cooper et al., 2001; Sloan et al., 2020).

### 3.2. Key findings from narrative synthesis

Across the 14 studies, numerous Nurture Group variants were reported on. Two studies reported only on 'classic' Nurture Groups (Seth-Smith et al., 2010; O'Connor & Colwell, 2002) and seven studies reported on 'adapted' Nurture Groups; five of the seven were classified as adapted as they operated on a part-time basis (Binnie & Allen, 2008; Shaver & McClatchey, 2013; Scott & Lee, 2009; Cunningham et al., 2019; Sanders, 2007) and two of the seven had been adapted for a

secondary school context (Grantham & Primrose, 2017; Cooke et al., 2008). Three studies reported on a combination of both classic and adapted Nurture Groups (Cooper & Whitebread, 2007; Cooper et al., 2001; Sloan et al., 2020), whilst two studies did not specify the type of Nurture Group (Gerrard, 2006; Reynolds et al., 2009). In order to summarise and explain the findings of the 14 studies, they will be grouped according to the type of Nurture Group reported on: Classic, adapted, combination, and unspecified.

#### 3.2.1. Classic Nurture Groups

The two studies that reported on Nurture Groups, which adhere to the classic model, found evidence that Nurture Group provision is effective at reducing SEMH difficulties in children. Both O'Connor and Colwell (2002) and Seth-Smith et al. (2010) found significant changes in children's Boxall Profile scores after they had attended the Nurture Group. In their study of 68 children across five infant and primary schools in North London, O'Connor and Colwell (2002) reported significant improvements on all 20 individual items of the Boxall Profile. These improvements were across both the 'Developmental' and 'Diagnostic' sections, with the greatest overall improvement in the Developmental section. Within the Developmental section, items B ('participates constructively') and H ('accommodates to others') showed the biggest improvements, whilst in the Diagnostic section, items Q ('disengaged') and V ('avoids/rejects attachment') showed the most significant changes.

Seth-Smith et al.'s (2010) study reported on the progress of children with a similar mean age (5 years 9 months) to the children in O'Connor and Colwell's study (5 years 3 months). However, Seth-Smith et al. (2010) utilised a control group, allowing them to compare the SEMH development of 44 children attending a Nurture Group with 39 children who did not, finding that the number of children judged as having 'clinical difficulty' on the SDQ fell from 77 % before Nurture Group provision to 53 % after the intervention, but was unchanged in the comparison group. This study did not report score changes for each individual item of the Boxall Profile, instead reporting changes on four of the five sub-strands. When compared to controls, they found the most significant improvement in scores on the 'organisation of experience' sub-strand and also observed a smaller, yet significant, improvement on the 'internalisation of control' sub-strand. This corresponds closely with Colwell and O'Connor's (2002) findings, as they observed the greatest overall improvement on the Developmental section, which encompasses only the 'organisation of experience' and 'internalisation of control' sub-strands. Seth-Smith (2010) also found significant improvements on the 'unsupported development' sub-strand compared to controls but found no significant change in the 'undeveloped behaviour' sub-strand. Two of the items within this sub-strand relate directly to attachment needs (S: 'undifferentiated attachment' and U: 'craves attachment'), and it is possible, therefore, that Seth-Smith et al.'s (2010) relatively shorter mean intervention period of 1.5 terms compared to O'Connor & Colwell (2002) mean of 3 terms was not long enough for Nurture Group provision to be effective at supporting these needs.

O'Connor and Colwell (2002) also collected follow-up data for 12 of the 68 children after they had re-joined their mainstream class full-time for a mean time period of 2.67 years, finding that improvements had been maintained since the point of exit from the Nurture Group for 16 of the 20 sub-strands. There was, however, evidence of 'relapse' in four items: C ('connects up experiences'); W ('undeveloped/ insecure sense of self'); X ('shows negativism towards others'); and Z ('wants/grabs, disregarding others'). This suggests that Nurture Group provision may be effective at improving SEMH development whilst children are attending the Nurture Group but may not be effective at supporting some aspects of SEMH development long-term when the intervention has ceased. Interestingly, three out of four of the items for which relapse was found are within the 'unsupported development' sub-strand of the Diagnostic section, suggesting that skills within this sub-strand may be more challenging to maintain post-intervention than others.

### 3.2.2. Adapted Nurture Groups

The five studies that reported on part-time Nurture Groups in primary schools all found evidence of a positive impact on SEMH development, some to a greater extent than others. Binnie & Allen (2008) reported positive changes in Boxall Profile scores across all five sub-strands after 8 months of intervention, as well as significant improvements in self-esteem as measured by the BIOS. They also found significant changes in SEMH development using both the teacher and parent versions of the SDQ. Meanwhile, Scott and Lee (2009) compared the aggregated gains of children who attended a Nurture Group to those who did not attend a Nurture Group, finding that significant results were confined to the youngest children in the study; only children in Primary 1 classes (aged 4–5 years) made significantly greater improvements in Boxall Profile scores compared to controls. This finding was not replicated by Sloan et al. (2020), however, who utilised comparatively more robust statistical analyses and found no effects for age. Both Shaver and McClatchey (2013) and Sanders (2007) found an improvement in 15 out of the 20 individual Boxall Profile items. Interestingly, four out of five of the items found to be insignificant were the same across both studies (items S, U, Y, and Z). Two of these items (S and U) were also found to be insignificant in Seth-Smith's (2010) study. All items found to be insignificant in Shaver and McClatchey's (2013) and Sander's (2007) study are in the Diagnostic section of the Boxall Profile's structure, which corresponds with Seth-Smith (2010) and Colwell and O'Connor's (2002) findings that the most significant gains were made in the Developmental section.

Taken together, this suggests that Nurture Group provision may be more effective at improving the skills measured by the items in the Developmental section – the cognitive, social, and emotional development influencing the ability to learn and function in a classroom – rather than those measured by the items in the Diagnostic section – behaviours resulting from “impaired development in the early years... that prevent successful social and academic performance” (NurtureUK, 2019b).

Cunningham et al. (2019) provided evidence that after attending a Nurture Group for 15 weeks, children used significantly more “socially appropriate” responses to challenging hypothetical social situations, as measured by the CRPM, which yielded a large effect size. Teacher perceptions of social skills as measured by the TOPSS, however, were approaching significance with a medium effect size.

In their study of Nurture Groups within secondary schools, Grantham and Primrose (2017) found that eight out of the 10 items in the Development section improved significantly post-intervention (items I: ‘constructive responses’ and J: ‘maintains standards’ were non-significant). Small to moderate effect sizes were reported for all items that reached significance. However, effect sizes were not reported for non-significant items. For the Diagnostic section, they found that only one item improved significantly (item Q: ‘disengaged’), with a small effect size reported. Cooke et al. (2008) reported on a newly set up Nurture Group within a secondary school and found evidence of “clear improvements” on all items in the Developmental Strands, with the Diagnostic Profile showing a “much less consistent pattern of scores.” Although this study included no evidence of statistical analysis, the patterns found do correspond with the findings of Grantham and Primrose (2017), as well as several other studies (both full-time and part-time) that found less evidence of improvement across the items of the Diagnostic Profile (Shaver & McClatchey, 2013; Seth-Smith et al., 2010; Colwell & O'Connor, 2002; Sanders, 2007).

### 3.2.3. Combination of Nurture Group models

Cooper and Whitebread (2007) studied Nurture Groups in 34 schools across 11 LAs, most of which adhered to the Classic model, with some adapted for secondary settings or to run part-time. They found that between Term 1 and 2, although mean improvements in SDQ scores for pupils attending a Nurture Group were significantly higher than the control group who did not have social, emotional, and behavioural difficulties (SEBD), there was no significant difference in improvement

rates between the Nurture Group children and the SEBD control group (i.e., those with SEBD but who did not take part in a Nurture Group), suggesting that the Nurture Group did not have an impact over and above the support that the mainstream SEBD pupils were receiving.

Importantly, Cooper and Whitebread (2007) found that a significant difference between the Nurture Group children and SEBD controls *did* exist when the Nurture Group was more ‘established’ within the school (i.e., had been running for more than two years). Whilst improvements in Boxall Profile data scores were more marked in the first two terms – like the SDQ data – they did find that improvements in both sub-strands of the Developmental section, as well as the ‘undeveloped behaviour’ sub-strand of the Diagnostic section, continued between Terms 2 and 4. The differences found in the ‘self-limiting features’ and ‘unsupported development’ sub-strands were not statistically significant. This corresponds partially with the findings of O'Connor and Colwell (2002), who also found improvements in items of the Developmental section after three terms and found that improvements in three out of five items on the ‘unsupported development’ sub-strand were not maintained at follow-up.

Cooper et al. (2001) also included both SEBD and non-SEBD control groups in their study, with the majority (17 of 25) of the Nurture Groups following the Classic model. In contrast to Cooper and Whitebread (2007)'s overall findings, they found that the SDQ scores of children attending a Nurture Group significantly improved compared to matched SEBD controls. However, Cooper et al. (2001) do not report how long the Nurture Groups had been running for; it is possible, therefore, that they were more ‘established’, which would correspond with Cooper and Whitehead's (2007)'s finding that children attending longer running groups made significant improvements compared to controls. Cooper et al. (2001) also found significant improvements across all five sub-strands on the Boxall Profile for Nurture Group children between Time 1 and Time 2.

Sloan et al. (2020) also studied multiple variants of Nurture Groups and included matched SEBD controls in the first large-scale evaluation of Nurture Groups, with a sample of 384 children. In their high-quality study, they found that the Nurture Group children made significantly greater improvements compared to controls on both the SDQ and all five sub-strands of the Boxall Profile, reporting large effect sizes for the Developmental and Diagnostic sections of the Boxall Profile and the Total Difficulties score and Prosocial Behaviour score of the SDQ. Sloan et al. (2020) reported “limited evidence of change” for children in the control group, which contrasts with the findings of both Cooper et al. (2001) and Cooper and Whitebread (2007), who did find evidence of change in their SEBD control group. Interestingly, the children in Sloan et al. (2020)'s control group attended a matched school without Nurture Group provision, whereas the children in Cooper et al. (2001) and Cooper and Whitebread's (2007) studies attended the same school as the Nurture Group. Additionally, unlike Cooper and Whitebread (2007), Sloan et al. (2020) found no differential effects in relation to the length of time the Nurture Group had been running; they also found no differential effects relating to whether the Nurture Group ran on a part-time or full-time basis, which corresponds with Cooper et al. (2001)'s preliminary findings. They did find, however, that Nurture Groups achieved the highest effects for children with the lowest baseline scores, with the authors suggesting that there is the potential for Nurture Groups to particularly benefit care-experienced children, as they typically have the lowest developmental outcomes (Sloan et al., 2020). They also found a larger effect for girls in reducing ‘total difficulties’ as measured by the SDQ, which they suggest might be explained by gender differences in emotional symptoms and peer problems, and they found that pupils in larger schools made less progress compared to those in smaller schools (Sloan et al., 2020).

### 3.2.4. Unspecified models of Nurture Group

Both Gerrard (2006) and Reynolds et al. (2009) did not report on the type of Nurture Group they studied within the primary schools that took



part. In their large-scale study of 32 primary schools, Reynolds et al. (2009) found improvements for Nurture Group children in comparison to matched controls on the BIOS and across all five sub-strands of the Boxall Profile. The same pattern was not found, however, on the SDQ, with results not reaching significance. Gerrard (2006) found evidence that seven of the 13 schools saw significant changes between Time 1 and Time 2 across all 'dimensions' of the Boxall Profile, whilst five schools saw changes across some dimensions and one school saw no significant changes. It is unclear whether all 20 items of the Boxall Profile were included in the analyses, which dimensions were not found to be significant by the five schools who reported partial improvements, or indeed, what statistical analyses were carried out. Gerrard (2006) also found that 11 of the 15 schools that provided SDQ data found significant improvements between Time 1 and 2.

## 4. Discussion

### 4.1. Summary of findings

This paper aimed to update Hughes and Schlösser's (2014) review examining the effectiveness of school-based Nurture Group provision on children's social and emotional development. A systematic search strategy was employed, and the fourteen studies included were analysed using a narrative synthesis methodology. Consistent with findings from Hughes & Schlösser's (2014) review, all studies found evidence that Nurture Group provision had a positive effect on social-emotional outcomes. There were no clear differential effects regarding type of Nurture Group (i.e., classic, part-time, secondary). However, differential effects in relation to pupil-level characteristics were found for age (Scott & Lee, 2009), baseline score (Sloan et al., 2020), and gender (Sloan et al., 2020). Improvements were consistently found on the Developmental section of the Boxall Profile across all studies that utilised this measure and provided statistical analysis, whereas there was less consistent evidence of progress on sub-strands of the Diagnostic section. This finding extended to studies that included follow-ups, with less evidence of improvements over time on the Diagnostic section of the Boxall Profile. The majority of studies did not report effect sizes ( $n = 11$ ). However, Sloan et al.'s (2020) high-quality, large-scale study reported large effect sizes for items across both the Developmental and Diagnostic sections of the Boxall Profile. This is encouraging, particularly due to the inclusion of a control group. Cunningham et al. (2019), another high-quality study, also reported medium and large effect sizes. Key findings will now be discussed in further detail, followed by consideration of the strengths and limitations across studies. This section will then conclude with implications for school staff and educational psychologists.

A finding across studies that measured progress using the Boxall Profile was that improvements were more consistently found on the Developmental section, whilst there were more mixed results for improvements on the Diagnostic profile. Seven studies (Sloan et al., 2020; Cooper et al., 2001; Binnie & Allen, 2008; Reynolds et al., 2009; Scott & Lee, 2009; O'Connor & Colwell, 2002; and Cooper & Whitebread, 2007) found statistically significant improvements in all five sub-strands of the Boxall Profile across both Developmental and Diagnostic sections. However, four studies found that children did not make significant progress on sub-strands or items on the Diagnostic section (Seth-Smith et al., 2010; Shaver & McClatchey, 2013; Sanders, 2007; and Grantham & Primrose, 2017). Additionally, whilst Cooper & Whitebread (2007) found evidence of progress on Diagnostic sub-strands or items between Terms 1 and 2, two out of three were not significant when Time 2 and Time 4 scores were compared whilst both of the Developmental strands remained significant, suggesting that most Diagnostic section improvements were not maintained over time.

The finding that progress in the Diagnostic section of the Boxall Profile was inconsistent across studies was briefly highlighted in Hughes and Schlösser's (2014) review, and the additional studies included within the current review add to the mixed picture of results. This

finding did not appear to be associated with whether the groups adhered to the classic model or had been adapted, although it should be noted that the only two studies of purely classic Nurture Groups both found less evidence for improvement across the Diagnostic section (O'Connor & Colwell, 2002; Seth-Smith et al., 2010). Nor did the finding appear to be related to differential study quality, as higher quality studies (e.g., Sloane et al., 2020; Seth-Smith et al., 2010) found differing patterns of results.

Although the reasons why are unclear, it appears that skills measured by the Diagnostic section of the Boxall Profile may be more difficult to develop through Nurture Group provision. The Diagnostic section measures children's "challenging behaviours that prevent social and academic performance...[which] are directly or indirectly the result of impaired development in the early years", whereas the Developmental section measures children's "cognitive, social, and emotional development that influence how well they are able to learn and function in the classroom" (NurtureUK, 2019). The guidance from NurtureUK (2019) states that behaviours measured by the Diagnostic section can only be supported "once the social and emotional needs are identified and necessary skills developed", suggesting that one might expect to see improvements on the Developmental section *before* seeing improvements on the Diagnostic section. It is possible, therefore, that a longer period of intervention is required for these skills to improve, although this does not appear to be supported by the evidence, as the studies that found consistent improvements in the Diagnostic section did not gather data over longer time periods.

This raises the possibility that characteristics at a group (i.e., group/classroom composition; Buyse et al., 2008), school (i.e., nurturing school culture; O'Farrell et al., 2022), or individual (i.e., teacher-child closeness, teacher sensitivity; Buyse et al., 2011) level that were not measured across the included studies may impact how effectively the skills measured by the Diagnostic section are developed within Nurture Group provision. A second possibility is that the mechanism of change underlying the two sections of the Boxall Profile is different. Much of the literature on Nurture Group provision focuses on the significance of secure attachments for building social and emotional skills, and NurtureUK (2019) emphasises the link between the Diagnostic section and prior experiences. Indeed, the items that explicitly mention 'attachment' are both in the Diagnostic section: 'S: undifferentiated attachment' and 'U: craves attachment'. Interestingly, all four studies that found insignificant results on some Diagnostic sub-strands reported that score changes for these two items were insignificant. This raises the question of whether the formation of secure attachment relationships occurs during Nurture Group provision and whether this is a causal factor in improvements on children's social and emotional outcomes. Whilst evidence suggests that dyadic teacher-child relationships may have an "attachment component" (Cassidy, 2008, p. 14), it is typically not "exclusive" and "durable", key qualities of an attachment bond as defined by Ainsworth (1989, p. 711) and it is, therefore, currently unclear how relationships with non-caregivers operate in the wider context of the classroom, school, and community (Verschuere & Koomen, 2012). This topic warrants further research in order to determine what and how is making a difference to improvements on specific items of the Boxall Profile and why this differs across studies.

Another inconsistent finding was the differential effect of age on the effectiveness of Nurture Group provision. Whilst Scott and Lee (2009) found significant improvements on the Boxall Profile for only the youngest children in the study who were aged 4–5 years old, Sloan et al. (2020) found no effect of age. Scott and Lee's (2009) findings may correspond with an attachment perspective on relationships, as evidence suggests that younger children's attachment systems are more easily activated due to their limited capacity for self-regulation, meaning they are more highly dependent on adult support for survival (Verschuere & Koomen, 2012). However, Sloan et al. (2020) found positive effects of Nurture Group provision regardless of the age of the children. Sloan et al. (2020)'s findings that older children also benefitted from Nurture

Groups may be supported by the results of [Grantham and Primrose's \(2017\)](#) study in secondary settings, as they reported largely positive effects for children over the age of 11 years on the Development section of the Boxall Profile. However, it should be noted that nine of the ten items on the Diagnostic section showed no statistically significant change. This may lend further support to this part of the Boxall Profile, focusing more heavily on attachment related needs, which may be more readily supported in younger children ([Verschuereen & Koomen, 2012](#)).

An interesting finding from [Cooper and Whitebread's \(2007\)](#) study was that children in Nurture Groups only made significantly more progress than matched SEBD controls in the same school when the group had been running for more than two years; newly established groups did not have a significant effect on SDQ scores. The authors suggest that this provides evidence for Nurture Groups increasing in effectiveness over time as the Nurture Group practitioners and school become more knowledgeable about the approach. The importance of the Nurture Group principles becoming embedded in the wider school context is also supported by the finding that control participants in [Cooper and Whitebread's \(2007\)](#) and [Cooper et al.'s \(2001\)](#) studies who attended a school that had a Nurture Group, did make progress, with schools that had Nurture Groups in [Cooper and Whitebread's \(2007\)](#) study making significantly greater improvements for mainstream and Nurture Group pupils than schools without a Nurture Group. This suggests that the presence of a Nurture Group promotes enhanced support for SEMH difficulties at a school-wide level, not just within the group itself; this could be a result of a school's ethos making them more likely to invest in a Nurture Group due to the underpinning values, or it could be due to the communication of Nurture Group principles and strategies from the group to the wider school context. This is supported by findings from a qualitative case study on the effects Nurture Group implementation within a secondary school setting ([O'Farrell et al., 2022](#)). One of the identified themes, 'whole school approach', highlighted the positive ways in which implementation of the Nurture Group had increased school-wide understanding and acceptance of Nurture principles and theory across staff and students.

School size may have an impact on how well Nurture principles impact the school ethos, though. [Sloan et al. \(2020\)](#) reported an inverse relationship between school size and amount of progress. A whole-school approach may contribute to the success of the Nurture Group, which may be more difficult to implement in larger settings. The case study above ([O'Farrell et al., 2022](#)), however reported positive findings in a secondary school setting with 850 pupils, which is encouraging.

#### 4.2. Strengths and limitations

This review has helpfully built upon [Hughes and Schlösser's \(2014\)](#) work by synthesising evidence included in their review with more recently published literature. It followed robust guidelines and assessed the quality of studies using an appropriate, validated tool. It was limited by the heterogeneity in the methodologies of the included studies, which employed a variety of different outcome measures and reported these in inconsistent ways (e.g., sections, sub-strands, or individual items of the Boxall Profile) across different time periods. This made it more difficult to consider to what extent the results of the studies were consistent. The review is also limited by the compromised quality of some of the studies, which lacked methodological rigour and transparency; two studies provided no statistical analysis, making it impossible to reliably interpret the results, and six studies included no control group, meaning it was difficult to confidently claim that improvements were a result of Nurture Group provision. Relatedly, only one study ([Cunningham et al., 2019](#)) reported on the interventions that control participants were receiving.

Study designs using a waitlist or no comparison group at all may overestimate intervention effects ([Furukawa et al., 2014](#)). The wide use of Nurture Groups ([NurtureUK, 2023](#)) seems in stark contrast with the available evidence base. Whilst the findings are encouraging,

particularly for outcomes of the Developmental section of the Boxall profile, more rigorous, high-quality research designs are lacking. In the 10 years since the systematic review by [Hughes and Schlösser \(2014\)](#), only four studies on the efficacy of Nurture Groups have been published. Three of these did not utilise a comparison group ([Cunningham et al., 2013](#); [Grantham & Primrose, 2017](#); [Shaver & McClatchey, 2013](#)). Strikingly, no randomised controlled trial on the efficacy of Nurture Groups has been conducted. While there are ethical considerations around withholding treatment to children and young people in need, these trials could be run in schools without an existing Nurture Group. The newly established Nurture Group could then be compared to a waitlist or active control condition (e.g., an after-school club) while children would receive care as usual (e.g., SENCO support).

Additionally, all but two studies used teacher-report data, which introduces the possibility that improvements in scores could have been influenced by teacher bias. Some strengths and limitations concern the methodology of the current review. The systematic search was comprehensive as it included multiple data bases covering educational, psychological and medical literature. Screening of studies was reliably conducted through a blinded screening process involving the first author and a voluntary research assistant.

However, the decision to exclude grey literature from the present review means that any unpublished or ongoing studies that may have been relevant were not identified in the search, thereby increasing the risk of publication bias. Future reviews should consider the inclusion of grey literature databases such as ProQuest. Additionally, while the quality rating used highlights specific issues across studies, it does not provide a quality score that allows ranking of individual studies.

#### 4.3. Implications for practice and future directions

The findings of this systematic literature review suggest a number of practical implications for school staff and EPs. Firstly, findings demonstrating differential effects related to school-level and individual-level characteristics could be useful in informing EPs' discussions with school staff around the implementation of Nurture Groups, such as supporting staff to consider children that a Nurture Group might be particularly effective for. Findings that the presence of a Nurture Group may impact children in the wider school community may be useful for EPs who are delivering training on Nurture Group provision or discussing the benefits of setting up a Nurture Group intervention with schools' senior leaders. EPs are also well placed to use a consultative approach to support school staff to engage critically with assessment tools, such as the Boxall Profile, helping them to consider why individual children may be making more or less progress on certain skills based on their strengths, needs, and aspects of the provision in a school's specific context.

It would be beneficial for future research to address the key limitations of the current evidence base. Ideally, future studies should utilise a well-powered randomised controlled trial design with a follow-up period and multi-informant report. Reporting should be transparent, particularly regarding statistical procedures and handling of attrition. Effect sizes should be calculated for all comparisons. Inclusion of follow-up assessments is vital as there is currently limited evidence that the positive effects of Nurture Groups can be maintained long-term due to the small number of studies that have investigated this and the small sample sizes and high attrition rates of those that have. This should include the collection of data at multiple timepoints before, during, and after intervention so that the plausibility of alternative explanations for score changes can be more adequately explored. There is a need for further research on Nurture Groups operating in secondary schools to add to the work of [Grantham and Primrose \(2017\)](#) and [Cunningham et al. \(2019\)](#), as well as Nurture Groups in other educational settings, as to the best of our knowledge, there is no existing literature on Nurture Groups in specialist provisions. Given the findings related to the impact of a Nurture Group on non-Nurture Group children, it would be



pertinent to further examine the school-wide effects of the mere presence of a Nurture Group on a range of outcomes. There is also a need for the school-level and child-level characteristics that were examined thoroughly by Sloan et al. (2020) to be further explored in order to test whether these findings can be replicated. Finally, further theorisation and testing are required to establish how and why the positive effects of Nurture Groups are found and to further investigate the differences observed between effects on the two sections of the Boxall Profile.

## 5. Conclusion

Quantitative data from 14 studies was analysed using a narrative synthesis approach to provide evidence that Nurture Group provision is effective overall at improving the social and emotional outcomes of children identified as having SEMH needs. There were no clear differential effects regarding type of Nurture Group (i.e., classic, part-time, secondary). However, differential effects in relation to some pupil-level characteristics were found for age, baseline score; and gender. Improvements were consistently found on the Developmental section of the Boxall Profile, whereas there was less consistent evidence of progress on the Diagnostic section. Caution must be used when interpreting and generalising from results due to the heterogeneity and variable methodological rigour. The current evidence base points towards the usefulness of Nurture Groups, particularly for improving outcomes measured by the Diagnostic section of the Boxall profile. Conclusions are limited by methodologically weak pre-post research designs without comparison groups and follow-up periods. Randomised controlled trials are urgently needed to improve the evidence base of this widely used intervention. High-quality research into Nurture Group provision is further required to explore school- and individual-level characteristics, school-wide impact; and the underlying mechanisms of change. Process measures are needed to further inform and develop the underlying theory of change. The findings from this systematic review may be relevant to EPs advising staff or working collaboratively to implement Nurture Group provision in schools.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chilyouth.2025.108278>.

## Data availability

No data was used for the research described in the article.

## References

- Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, 44, 709–716.
- Allegrini, A. G., Cheesman, R., Rimfeld, K., Selzam, S., Pingault, J. B., Eley, T. C., & Plomin, R. (2020). The p factor: Genetic analyses support a general dimension of psychopathology in childhood and adolescence. *Journal of child psychology and psychiatry*, 61(1), 30–39.
- Baldwin, J. R., Caspi, A., Meehan, A. J., Ambler, A., Arseneault, L., Fisher, H. L., & Danese, A. (2021). Population vs individual prediction of poor health from results of adverse childhood experiences screening. *JAMA Pediatrics*, 175(4), 385–393.
- Baldwin, J. R., Sallis, H. M., Schoeler, T., Taylor, M. J., Kwong, A. S., Tielbeek, J. J., & Pingault, J. B. (2023). A genetically informed registered report on adverse childhood experiences and mental health. *Nature Human Behaviour*, 7(2), 269–290. <https://doi.org/10.1038/s41562-022-01482-9>
- Beier, J. S., Gross, J. T., Brett, B. E., Stern, J. A., Martin, D. R., & Cassidy, J. (2019). Helping, sharing, and comforting in young children: Links to individual differences in attachment. *Child Development*, 90(2), e273–e289.
- Bennathan, M., & Boxall, M. (1998). *The Boxall profile: Handbook for teachers*. Nurture Group Network.
- Bennathan, M., & Boxall, M. (2012). *Effective Intervention in Primary Schools: Nurture Groups* (2nd ed.). David Fulton Publishers.
- Binnie, L. M., & Allen, K. (2008). Whole school support for vulnerable children: The evaluation of a part-time nurture group. *Emotional and Behavioural Difficulties*, 13(3), 201–216.
- Boland, A., Cherry, G., & Dickson, R. (2023). *Doing a systematic review: A student's guide* (2nd ed.). SAGE Publishing.
- Bowlby, J. (1969). *Attachment and loss* (Vol. 1). Attachment. Basic Books.
- Boxall, M. (2002). *Nurture groups in schools: Principles and practice*. Sage.
- British Medical Association. (2022, October 13). *Shameful statistics show a mental health crisis that is spiralling out of control as demand far outweighs capacity, warns BMA*. <https://www.bma.org.uk/bma-media-centre/shameful-statistics-show-a-mental-health-crisis-that-is-spiralling-out-of-control-as-demand-far-outweighs-capacity-warns-bma>.
- Bureau, J. F., Deneault, A. A., & Yurkowski, K. (2020). Preschool father-child attachment and its relation to self-reported child socioemotional adaptation in middle childhood. *Attachment & Human Development*, 22(1), 90–104.
- Burnett, P. C. (1998). Measuring behavioral indicators of self-esteem in the classroom. *The Journal of Humanistic Education and Development*, 37(2), 107–116.
- Buyse, E., Verschueren, K., Doumen, S., Van Damme, J., & Maes, F. (2008). Classroom problem behavior and teacher-child relationships in kindergarten: The moderating role of classroom climate. *Journal of school psychology*, 46(4), 367–391.
- Buyse, E., Verschueren, K., & Doumen, S. (2011). Preschoolers' attachment to mother and risk for adjustment problems in kindergarten: Can teachers make a difference? *Social Development*, 20(1), 33–50.
- Cassidy, J. (2008). The nature of the child's ties. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 3–22). The Guilford Press.
- Commodari, E. (2013). Preschool teacher attachment, school readiness and risk of learning difficulties. *Early Childhood Research Quarterly*, 28(1), 123–133.
- Commodari, E. (2013). Preschool teacher attachment and attention skills. *Springer Plus*, 2(1), 673.
- Cooke, J. E., Racine, N., Plamondon, A., Tough, S., & Madigan, S. (2019). Maternal adverse childhood experiences, attachment style, and mental health: Pathways of transmission to child behavior problems. *Child Abuse & Neglect*, 93, 27–37. <https://doi.org/10.1016/j.chiabu.2019.04.011>
- Cooke, C., Yeomans, J., & Parkes, J. (2008). The Oasis: Nurture group provision for Key Stage 3 pupils. *Emotional and Behavioural Difficulties*, 13(4), 291–303.
- Cooper, P., Arnold, R., & Boyd, E. (2001). The effectiveness of nurture groups: Preliminary research findings. *British Journal of Special Education*, 28(4), 160–166.
- Cooper, P., & Whitebread, D. (2007). The effectiveness of nurture groups on student progress: Evidence from a national research study. *Emotional and Behavioural Difficulties*, 12(3), 171–190.
- Cunningham, L., Hartwell, K. B., & Kreppner, J. (2019). Exploring the impact of Nurture Groups on children's social skills: A mixed-methods approach. *Educational Psychology in Practice*, 35(4), 368–383.
- Department for Children, Education, Lifelong Learning and Skills. (2010, November). *Nurture groups: A handbook for schools*. Crown. <https://www.gov.wales/sites/default/files/publications/2018-12/nurture-groups-a-handbook-for-schools.pdf>.
- Department for Education (2022). *Special educational needs and disability: an analysis and summary of data sources*. [https://assets.publishing.service.gov.uk/media/64930eef103ca6001303a3a6/Special\\_educational\\_needs\\_and\\_disability\\_an\\_analysis\\_and\\_summary\\_of\\_data\\_sources.pdf](https://assets.publishing.service.gov.uk/media/64930eef103ca6001303a3a6/Special_educational_needs_and_disability_an_analysis_and_summary_of_data_sources.pdf).
- Department for Education (2023). *Children looked after in England including adoption: 2021 to 2022*. <https://explore-education-statistics.service.gov.uk/find-statistics/children-looked-after-in-england-including-adoptions/2022>.
- Department for Education and Department of Health. (2015). *Special educational needs and disability code of practice: 0 to 25 years: Statutory guidance for organisations which work with and support children and young people who have special educational needs or disabilities*. [https://assets.publishing.service.gov.uk/media/5a7dcb85ed915d2ac884d995/SEND\\_Code\\_of\\_Practice\\_January\\_2015.pdf](https://assets.publishing.service.gov.uk/media/5a7dcb85ed915d2ac884d995/SEND_Code_of_Practice_January_2015.pdf).
- Department of Education. (2020). *Nurture group provision: Guidance for schools*. <https://www.education-ni.gov.uk/sites/default/files/publications/education/Nurture%20Group%20Provision%20-%20Guidance%20for%20Schools%20JANUARY%202023.PDF>.
- Dodge, K. A., McClaskey, C. L., & Feldman, E. (1985). Situational approach to the assessment of social competence in children. *Journal of Consulting and Clinical Psychology*, 53(3), 344–353.
- Downs, S. H., & Black, N. (1998). The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *Journal of epidemiology & community health*, 52(6), 377–384.
- Egan, M., Daly, M., & Delaney, L. (2015). Childhood psychological distress and youth unemployment: Evidence from two British cohort studies. *Social Science & Medicine*, 124, 11–17.
- Forster, M., Gower, A. L., Borowsky, I. W., & McMorris, B. J. (2017). Associations between adverse childhood experiences, student-teacher relationships, and non-medical use of prescription medications among adolescents. *Addictive Behaviors*, 68, 30–34.
- Furukawa, T. A., Noma, H., Caldwell, D. M., Honyashiki, M., Shinohara, K., Imai, H., & Churchill, R. (2014). Waiting list may be a nocebo condition in psychotherapy trials: A contribution from network meta-analysis. *Acta Psychiatrica Scandinavica*, 130(3), 181–192.

- Gerrard, B. (2006). City of Glasgow nurture group pilot scheme evaluation. *Emotional and Behavioural Difficulties*, 10(4), 245–253.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.
- Grantham, R., & Primrose, F. (2017). Investigating the fidelity and effectiveness of Nurture Groups in the secondary school context. *Emotional and Behavioural Difficulties*, 22(3), 219–236.
- Groh, A. M., Fearon, R. P., Bakermans-Kranenburg, M. J., Van Ijzendoorn, M. H., Steele, R. D., & Roisman, G. I. (2014). The significance of attachment security for children's social competence with peers: A meta-analytic study. *Attachment & Human Development*, 16(2), 103–136.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72(2), 625–638.
- Howes, C., & Ritchie, S. (1999). Attachment organizations in children with difficult life circumstances. *Development and Psychopathology*, 11(2), 251–268.
- Hughes, J. N., Cavell, T. A., Meehan, B. T., Zhang, D., & Collie, C. (2005). Adverse school context moderates the outcomes of selective interventions for aggressive children. *Journal of Consulting and Clinical Psychology*, 73(4), 731.
- Hughes, N. K., & Schlösser, A. (2014). The effectiveness of nurture groups: A systematic review. *Emotional and Behavioural Difficulties*, 19(4), 386–409.
- Kerr-Davis, A., Hillman, S., Anderson, K., & Cross, R. (2023). Introducing routine assessment of adverse childhood experiences for looked-after children: The use and properties of the trauma and adverse life events (TALE) screening tool. *Journal of Child & Adolescent Trauma*, 16(4), 981–994.
- Kesner, J. E. (2000). Teacher characteristics and the quality of child–teacher relationships. *Journal of School Psychology*, 38(2), 133–149.
- Kim, B. R., Stifter, C. A., Philbrook, L. E., & Teti, D. M. (2014). Infant emotion regulation: Relations to bedtime emotional availability, attachment security, and temperament. *Infant Behavior and Development*, 37(4), 480–490.
- Lanier, P., Maguire-Jack, K., Lombardi, B., Frey, J., & Rose, R. A. (2018). Adverse childhood experiences and child health outcomes: Comparing cumulative risk and latent class approaches. *Maternal and Child Health Journal*, 22, 288–297.
- Lerner, D. G., & Kruger, L. J. (1997). Attachment, self-concept, and academic motivation in high-school students. *American Journal of Orthopsychiatry*, 67(3), 485–492.
- Lebrun-Harris, L. A., Ghandour, R. M., Kogan, M. D., & Warren, M. D. (2022). Five-year trends in US children's health and well-being, 2016–2020. *JAMA Pediatrics*, 176(7), Article e220056. <https://doi.org/10.1001/jamapediatrics.2022.0056>
- Lopes, J. A. (2014). *International perspectives in EBD: Critical issues*. The SAGE Handbook of Emotional and Behavioural Difficulties (2nd ed.).
- Ma, L. L., Wang, Y. Y., Yang, Z. H., Huang, D., Weng, H., & Zeng, X. T. (2020). Methodological quality (risk of bias) assessment tools for primary and secondary medical studies: What are they and which is better? *Military Medical Research*, 7, 1–11.
- Markiewicz, D., Doyle, A. B., & Brendgen, M. (2001). The quality of adolescents' friendships: Associations with mothers' interpersonal relationships, attachments to parents and friends, and prosocial behaviors. *Journal of Adolescence*, 24(4), 429–445. <https://doi.org/10.1006/jado.2001.0374>
- Miller-Lewis, L. R., Searle, A. K., Sawyer, M. G., Baghurst, P. A., & Hedley, D. (2013). Resource factors for mental health resilience in early childhood: An analysis with multiple methodologies. *Child and Adolescent Psychiatry and Mental Health*, 7, 1–23.
- Mulraney, M., Coghill, D., Bishop, C., Mehmed, Y., Sciberras, E., Sawyer, M., & Hiscock, H. (2021). A systematic review of the persistence of childhood mental health problems into adulthood. *Neuroscience & Biobehavioral Reviews*, 129, 182–205.
- NurtureUK. (2019a). *Nurture Groups for all educational settings*. <https://www.nurtureuk.org/wp-content/uploads/2021/10/Nurture-Groups-Booklet-Dec-2019.pdf>.
- NurtureUK. (2019b). *The Boxall Profile: For the assessment of children and young people's social emotional wellbeing*. <https://www.nurtureuk.org/wp-content/uploads/2021/11/Boxall-Profile-Leaflet-2019.pdf>.
- NurtureUK. (2023). *Nurture Groups*. <https://www.nurtureuk.org/supporting-you/nurture-groups/>.
- O'Connor, T., & Colwell, J. (2002). Research Section: The effectiveness and rationale of the 'nurture group' approach to helping children with emotional and behavioural difficulties remain within mainstream education. *British Journal of Special Education*, 29(2), 96–100.
- O'Farrell, K., Cunningham, L., Hartwell, B., & Kreppner, J. (2022). How the implementation of a secondary school nurture group relates to whole school approaches and ethos: A case study. *International Journal of Nurture. Education*, 8.
- Ofsted. (2011). *Report summary: Supporting children with challenging behaviour through a nurture group approach*. Crown. [https://assets.publishing.service.gov.uk/media/5a8095f8ed915d74e33fb44e/Report\\_summary\\_-\\_Supporting\\_children\\_with\\_challenging\\_behaviour\\_through\\_a\\_nurture\\_group\\_approach.pdf](https://assets.publishing.service.gov.uk/media/5a8095f8ed915d74e33fb44e/Report_summary_-_Supporting_children_with_challenging_behaviour_through_a_nurture_group_approach.pdf).
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, n71.
- Parker, C., Whear, R., Ukoumunne, O. C., Bethel, A., Thompson-Coon, J., Stein, K., & Ford, T. (2015). School exclusion in children with psychiatric disorder or impairing psychopathology: A systematic review. *Emotional and Behavioural Difficulties*, 20(3), 229–251.
- Paulus, F. W., Möhler, E., Festag, L., & Joas, J. (2022). Preschool Temperament as a Factor of Risk and Protection for Later Childhood Psychopathology. *Frontiers in Psychiatry*, 13, Article 803959. <https://doi.org/10.3389/fpsyt.2022.803959>
- Pianta, R. C. (1992). *Beyond the parent: The role of other adults in children's lives*. Jossey-Bass.
- Pinquart, M., Feußner, C., & Ahnert, L. (2013). Meta-analytic evidence for stability in attachments from infancy to early adulthood. *Attachment & Human Development*, 15(2), 189–218.
- Reynolds, S., Mackay, T., & Kearney, M. (2009). Nurture groups: A large-scale, controlled study of effects on development and academic attainment. *Educational and Child Psychology*, 27(3), 100–110.
- Sanders, T. (2007). Helping children thrive at school: The effectiveness of nurture groups. *Educational Psychology in Practice*, 23(1), 45–61.
- Scott, K., & Lee, A. (2009). Beyond the 'classic' nurture group model: An evaluation of part-time and cross-age nurture groups in a Scottish local authority. *Support for Learning*, 24(1), 5–10.
- Seth-Smith, F., Levi, N., Pratt, R., Fonagy, P., & Jaffey, D. (2010). Do nurture groups improve the social, emotional and behavioural functioning of at risk children? *Educational and Child Psychology*, 27(1), 21.
- Shaver, I., & McClatchey, K. (2013). Assessing effectiveness of nurture groups in Northern Scotland. *Support for Learning*, 28(3), 97–102.
- Sheffler, J. L., Stanley, I., & Sachs-Ericsson, N. (2020). ACEs and mental health outcomes. In G. J. Asmundson, & T. O. Afifi (Eds.), *Adverse childhood experiences* (pp. 47–69). Academic Press.
- Shin, S. H., Lee, S., Jeon, S. M., & Wills, T. A. (2015). Childhood emotional abuse, negative emotion-driven impulsivity, and alcohol use in young adulthood. *Child Abuse & Neglect*, 50, 94–103.
- Simkiss, D. (2019). The needs of looked after children from an adverse childhood experience perspective. *Paediatrics and Child Health*, 29(1), 25–33.
- Sloan, S., Winter, K., Connolly, P., & Gildea, A. (2020). The effectiveness of Nurture Groups in improving outcomes for young children with social, emotional and behavioural difficulties in primary schools: An evaluation of Nurture Group provision in Northern Ireland. *Children and Youth Services Review*, 108, Article 104619.
- Smith, C. L., Calkins, S. D., & Keane, S. P. (2006). The relation of maternal behavior and attachment security to toddlers' emotions and emotion regulation. *Research in Human Development*, 3(1), 21–31.
- Tarren-Sweeney, M. (2008). The mental health of children in out-of-home care. *Current Opinion in Psychiatry*, 21(4), 345–349.
- The Children's Society. (2022). *The Good Childhood Report 2022*. <https://www.childrensociety.org.uk/sites/default/files/2022-09/GCR-2022-Full-Report.pdf>.
- Tufanaru, C., Munn, Z., Aromataris, E., Campbell, J., & Hopp, L. (2020). Chapter 3: Systematic reviews of effectiveness. In E. Aromataris, & Z. Munn (Eds.), *JBI manual evidence synthesis* (pp. 3–10). Joanna Briggs Institute.
- Vaillancourt, T., Brittain, H. L., McDougall, P., & Duku, E. (2013). Longitudinal links between childhood peer victimization, internalizing and externalizing problems, and academic functioning: Developmental cascades. *Journal of Abnormal Child Psychology*, 41(8), 1203–1215.
- Verschueren, K., & Koomen, H. M. (2012). Teacher–child relationships from an attachment perspective. *Attachment & Human Development*, 14(3), 205–211.
- Ward, H., Jones, H., Lynch, M., & Skuse, T. (2002). Issues concerning the health of looked after children. *Adoption & Fostering*, 26(4), 8–18.
- Young, S., Taylor, E., & Gudjonsson, G. (2016). Childhood predictors of criminal offending: Results from a 19-year longitudinal epidemiological study of boys. *Journal of Attention Disorders*, 20(3), 206–213.