

**THE ROLE OF THE EDUCATIONAL PSYCHOLOGIST IN THE
IMPLEMENTATION AND EVALUATION OF SMALL GROUP SOCIAL SKILLS
INTERVENTIONS IN PRIMARY SCHOOLS**

A thesis submitted to the University of Manchester for the degree of Doctorate in
Educational and Child Psychology
in the Faculty of Humanities

2019

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SCHOOL OF ENVIRONMENT, EDUCATION AND DEVELOPMENT

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Word count: 20,605 (excluding references, appendices, acknowledgements, contents and lists, declaration and copyright statement)

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List of Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
CAMHS	Child and Adolescent Mental Health Service
CoP	Code of Practice
EBD	Emotional Behavioural Disorders
EBP	Evidence-based practice
EFI	Ecological Framework for Implementation
EP	Educational Psychologist
EPS	Educational Psychology Service
LA	Local Authority
LBT	Lego [®] -Based Therapy
MAT	Multi Academy Trust
OT	Occupational Therapy
PATHS	Promoting Alternative Thinking Strategies
PBE	Practice-based evidence
SALT	Speech and Language Therapy
SEAL	Social and Emotional Aspects of Learning
SEMH	Social, Emotional and Mental Health
SEN&D	Special Educational Needs and Disability
SENCO	Special Educational Needs Coordinator
SP	School Psychologist (USA)
TA	Teaching Assistant
TEP	Trainee Educational Psychologist

Thesis Abstract

This thesis focuses upon the implementation of group-level social skills interventions in mainstream primary and elementary schools. Schools must provide additional support for children with social skill difficulties. Therefore, the first paper presents the findings of an international systematic literature review exploring the characteristics of effective small group social skills interventions. Four databases were systematically searched between September 2017 and January 2018 yielding 1,461 hits for screening. Thirty studies met eligibility criteria and were assessed for coherence and integrity, as well as evidence efficacy. Eleven studies were included in the final review.

The second paper explores how two primary schools assimilated and implemented Lego[®]-Based Therapy (LBT), a promising social skills intervention. The study also explores the factors which impact upon the process of assimilation and adoption in order to inform a preliminary model of implementation factors specifically to LBT. The case study sites were two English mainstream primary schools within the researcher's Practice Placement Educational Psychology Service. Data were collected via interviews with the Special Educational Needs Co-Ordinator (SENCO) and LBT facilitator at each school, as well as three structured observations of LBT in each school. Findings from all data sources were triangulated to identify themes, using inductive-deductive hybrid analysis to map the findings onto the Durlak and DuPre (2008) Ecological Framework for Implementation (EFI) model.

A third paper considers the concepts of evidence-based practice and practice-based evidence, dissemination and implementation, applying these concepts to inform a dissemination strategy for the current research.

The literature review found that the area of group level social skills intervention is at an early stage of development with a lack of clarity in the conceptualisation of social skills as well as measuring and judging effectiveness. Very few studies acknowledged the impact of implementation factors upon outcomes. The case study found that implementation factors broadly mapped onto the Durlak and DuPre (2008) model, but 'facilitator factors', 'participant responsiveness', the explicit process of assimilation and 'peer support post-training' were lacking in the EFI, suggesting that a revised model of LBT implementation factors is required.

The third paper considers common and effective dissemination methods and the implications of these for the current research. A dissemination strategy is proposed at different professional and geographic levels, with a range of dissemination purposes taken into account.

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May 2019

Declaration

I declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Acknowledgements

Firstly, I would like to thank my family who have been a much-needed source of advice, humour and emotional support throughout the three years of my training and the research process. To my friends – thank you for checking in when I had my head buried in my laptop, I'll come out of hibernation now. And to Martin, who reassured me that taking the leap from teaching towards Educational Psychology came at the right time, a massive thank you for not letting me doubt myself and for reminding me about the light at the end of the tunnel.

I would also like to thank the school staff, parents and children who participated in the research. Without you, this project would not have been possible. Likewise, huge thanks go to my practice placement supervisor who gave me words of encouragement, advice and enthusiasm throughout the process. Your advocacy for this research, for my professional training and also for my own wellbeing was fundamental to this accomplishment.

Finally, I would like to thank my academic supervisor for her patience, support and expertise. I've developed greatly, both as a researcher and as a psychologist, not to mention learning new levels of perseverance when the topic gets a little abstract or difficult to conceptualise.

Thank you all.

Dedication

I would like to dedicate this thesis in memory of Cynthia Wales, the most inspirational grandmother that anyone could wish for. She taught us to always aim high and not to settle for something we weren't happy with. When I realised the impact that national testing was having on the young children I was teaching, and how I didn't feel able to support those children who didn't find learning easy, I often thought of her. With a gentle nudge in the right direction from a few people, I decided that it was time for a change. I hope that I will show as much grit and determination in my endeavours as an Educational Psychologist as she did throughout her life. She taught me that life is for living and the importance of doing something which we enjoyed and believed in, and now here I am. Thank you, Nana.

Thesis Introduction

This thesis introduction outlines the thesis as a whole, starting with a consideration of how the independence of the research was maintained in the context of research commissioning and outlining the aims and research questions of the individual papers. Following this, an exploration of the researcher's professional background, relevant experience, rationale for engagement, axiological, ontological and epistemological stances are provided.

Maintaining independence in the context of research commissioning

The original commission for this thesis related broadly to a request from an Educational Psychologist (EP) in a Local Authority (LA) Educational Psychology Service (EPS) who had noticed that Lego[®]-Based Therapy (LBT) was being widely used within their schools. A previous review of literature identified that both the implementation and outcomes of LBT warranted further exploration (Lindsay, Hounsell & Cassiani, 2017), which was congruent with the EP's identification that further evidence for the application of LBT in schools was still required in order to most appropriately inform their recommendations. Due to the diversity in LBT development and consequent variability in delivery within the commissioning LA, an evaluative study was not possible. The researcher's own experience and findings of a pilot study (Evans, 2018) also indicated that, despite being popular and designed for children with autism, LBT was often used for children with a much wider range of social skill needs in schools and was often highly adapted from the model suggested by the developer (LeGoff, Gomez de la Cuesta, Krauss & Baron-Cohen, 2014) in order to fit the unique school context. The pilot study also indicated a lack of post-training support and challenges in the assessment and evaluation of LBT.

Accordingly, the researcher highlighted that a thesis exploring the characteristics and implementation of small group social skills, relating this to LBT, would address a significant gap in the existing literature.

Aims and research questions

Whilst the initial aim of the thesis as a whole was to explore how schools were using LBT, an initial exploratory literature search indicated that not only was there no prior research focusing upon the implementation of LBT, but there was no prior literature review or model to guide the implementation of small group social skills more generally. Therefore, the focus of the thesis moved towards the identification of the characteristics of effective small group social skills interventions with an exploration of the process and factors impacting upon the implementation of LBT in two schools for the empirical study. This aimed to inform a preliminary model of implementation factors specific to LBT in order for EPs to support schools when implementing LBT.

The aim of the first paper, submitted to the European Journal of Special Needs Education (Appendix 1), was to identify the characteristics of small group social skills interventions more generally, given that there was insufficient research focusing upon and no model to guide the implementation of small group social skills interventions. Schools are increasingly expected to meet a diverse range of individual needs, with the most recent Code of Practice (CoP) for Special Educational Needs and Disability (SEN&D) (Department of Education [DfE] & Department of Health [DoH], 2015) specifying that, within the category of Social, Emotional and Mental Health (SEMH) needs, some children will require a graduated approach to supporting their social skill needs. As a result, a range of small group

targeted social skills interventions are used, often with varying evidence for efficacy which is difficult for school staff to access, understand and apply. Accordingly, EPs are often requested to recommend interventions and to guide schools in the implementation of these. Being able to adopt a meta-perspective and work at the systems level, EPs are well-positioned to do this. However, there is no current model to guide their work relating to the selection and implementation of small group social skills interventions. Therefore the systematic literature review addressed the following research question; 'What are the characteristics of effective small group social skills interventions for children aged five to 11 in mainstream schools?' Analysis of the literature indicated that the characteristics of effective small group social skills interventions varied and that the area is at an early stage of development with a lack of clarity in conceptualising, measuring and judging effectiveness of skill development. Implications for future evaluative research methods are discussed, including a need for collaboration between schools and researchers in order to develop iterative implementation-based evaluative studies of small group social skills interventions.

The second paper, prepared for submission to *School Psychology International* (see Appendix 2), aimed to address two research questions. Research question one was 'How have two mainstream primary schools assimilated and implemented LBT?', and the second research question was 'What are the factors influencing the implementation of LBT in two mainstream primary schools?' Schools had to meet the following inclusion criteria: the school staff had participated in LBT training from the Educational Psychology Service, the link EP perceived the school to have implemented LBT well, and multiple LBT cycles had been completed. The research

site schools self-identified as using LBT effectively to support children's social skill development, which was triangulated with EP perception of efficacy by the link EP for each school. Therefore, it was posited that both schools could exemplify the assimilation process and factors to consider when implementing LBT in order to result in effective programme outcomes. The Durlak and DuPre (2008) Ecological Framework for Implementation (EFI) was used to frame the data analysis. A cross case analysis allowed for common and unique contextual factors to be identified. The themes largely mapped onto the EFI, except the themes of 'facilitator factors', 'participant responsiveness' and 'peer support' which emerged inductively as well as making the implementation process an explicit focus, suggesting that a revised model of implementation factors is required for LBT. The findings highlight how EPs need to base their implementation support to schools around a model of implementation, ensuring that implementation is viewed as a cyclical, iterative process.

The third paper considered notions of evidence-based practice (EBP) and practice based evidence (PBE) in relation to the EP role as a scientist-practitioner. Evidence relating to effective dissemination strategies and the notion of research impact is also explored, followed by a summary of the research impact. Collectively, these factors informed a dissemination strategy for the research findings.

Ontological and epistemological position

Whilst ontology is concerned with realities and how these may be constructed, epistemology is concerned with what constitutes knowledge and how this might be obtained. The researcher has adopted a critical realist ontological and

epistemological stance which aims to explore the reality of the contemporary phenomenon of LBT delivery whilst acknowledging that the researcher's conceptualisation of this phenomenon is just one way of understanding it (Bryman, 2016). Using a case study approach to examine LBT accepts that there may be other interpretations of the phenomenon, rather than there being one 'truth' to be found. Such interpretations were explored using semi-structured interviews which ensured a balance between the exploration of key research-defined areas of participant experience whilst allowing the flexibility to explore areas other than those defined by the researcher. Critical realism also acknowledges the importance of the context which is expected to interact with mechanisms in the system to produce the observed phenomenon in the social world. The mainstream primary school context is a dynamic and changeable social environment. Therefore, it is expected that there will be many mechanisms occurring within the system which will then impact upon the implementation and delivery of an intervention such as LBT (Pawson & Tilley, 1997). Analysis of interview data using a hybrid inductive-deductive approach (Fereday & Muir-Cochrane, 2006) enabled components of existing models of implementation to be identified within the data, as well as the coding of themes arising inductively. As a critical realist approach supports the identification of the processes which constitute the phenomenon, it will enable the identification of possible changes to alter, adapt and improve the phenomenon in future (Bryman, 2016). Observational data were used to align the researcher's and interviewees' understanding of the processes impacting upon LBT in the settings. The researcher is aware that the case study presents the implementation of LBT within two schools and, if carried out within other settings, the aspects of implementation may be constructed differently.

Axiological position and the researcher's professional background and relevant experience

Axiology is the study of values and the moral positioning underpinning the research (MacDonald, 2004). Because research is value laden, the researcher is likely to be biased by world views and experiences which can impact upon the research findings. Because of this, the researcher's own background and relevant experience will be discussed alongside a reflection of their axiological position and its potential impact upon the research.

The researcher has experience in multiple relevant roles within the education system, having worked as a teacher specialising in early years education (children aged three to seven years) and as an Assistant Educational Psychologist in an LA EPS. During the researcher's most recent position as an Assistant Educational Psychologist, they were often commissioned to run or to support schools with the implementation of small group interventions, including those with a social skill focus. This initiated the researcher's interest in the impact of implementation quality and maintenance. This interest was further developed in the researcher's first placement as a Trainee Educational Psychologist (TEP) as it was noticed that, whilst many schools delivered LBT, a range of professionals and teams had delivered the training using different training models. Additionally, many adaptations had been made, all of which appeared to link to the effectiveness of the programme.

Because of these experiences, the researcher formed the view that the social structure of the school is likely to impact upon the effectiveness of social skills

intervention implementation and delivery and, therefore, upon programme outcomes. The research is also guided by the researcher's value that all children in need of additional support should have access to an effective intervention which will meet their needs in order for them to achieve human flourishing (Maxwell, 2012). Together, these values led to the researcher's aim: to identify the optimal and hindering factors impacting upon the social processes during the implementation and delivery of LBT in order to inform their practice and to enable all children to access effective interventions when required.

Positioning of the data

The research was carried out within schools in the researcher's TEP practice placement EPS. EPs within the researcher's team were asked to indicate whether any of their schools had accessed LBT training from the service and, if so, whether any of these schools self-reported very effective outcomes. From those schools, the EPs were then asked which schools had implemented LBT robustly and had the infrastructure for intervention maintenance. This list of schools were invited to participate by the researcher providing they met the following inclusion criteria: school staff participated in LBT training from the Educational Psychology Service (EPS), the school self-identified that their use of LBT was effective, the link EP perceived the school to have implemented LBT well, and multiple LBT cycles had been completed. Schools were contacted in order until two schools were recruited. Recruitment was complete when two schools confirmed that the parents, Special Educational Needs Coordinator (SENCO), facilitator and pupils had accessed the information sheets, understood the research and had completed the informed consent forms. Neither of the schools were previously well-known to the researcher.

It is possible that the schools' motivations to participate in the research may have impacted upon the research findings, i.e. the schools may have hoped to access further resources, guidance or training in relation to LBT, despite it being explicit within the informed consenting process that this would not be the case, other than updates and dissemination as per the strategy in Paper 3. The case study also presents an idiographic exploration of the implementation of LBT in two schools. Whilst the preliminary model of implementation factors proposed in Paper 2 is informed by the data, it requires more extensive application and evaluation in order to assess impact and reliability.

Specific ethical issues

Informed written consent was obtained from the SENCOs and LBT facilitators. Due to the research involving the observation of participants under the age of 16, the researcher was required to obtain informed written consent from the parents of the pupils and (Appendix 3). Informed assent was obtained from each pupil (Appendix 4). No other specific ethical issues arose.

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Paper 1. Characteristics of Effective Small Group Social Skills Interventions in Mainstream Primary Education: A Systematic Literature Review

Prepared in accordance with the author guidelines for submission to the journal

European Journal of Special Needs Education (Appendix 1)

This project was funded through England's Department for Education (DfE) National College for Teaching and Learning (NCTL) ITEP award 2016-2019.

Word count: 6931

Characteristics of Effective Small Group Social Skills Interventions in Mainstream Primary Education: A Systematic Literature Review

Abstract

Mainstream primary and elementary schools are increasingly involved in delivering small group social skills interventions for pupils with special needs, particularly in light of the evidence indicating the impact of social skill competency on later life outcomes. Despite significant investment by schools in training and resources to implement these interventions, very little is currently understood about the characteristics of effective small group social skills interventions for the five to eleven age phase. The purpose of the current review is to provide a preliminary overview of the characteristics of such interventions. Searches of four key databases were conducted between September 2017 and January 2018. Eleven studies met criteria for inclusion. The review found that the area is at an early stage of development with a lack of clarity in conceptualising, measuring and judging effectiveness of small group social skills interventions for the primary age phase. Implications for future evaluative research methods are discussed, including a need for collaboration between schools and researchers to develop iterative, implementation-based evaluative studies of small group social skills interventions.

Keywords: social skills, group intervention, primary.

Introduction

Teachers are increasingly being asked to deliver interventions for pupils with special educational needs which are evidence-based and take into consideration implementation factors. This review aims to illustrate some of these challenges through a consideration of small group social skills interventions which have become increasingly common. In order to rationalise this literature review, it is necessary to first clarify definitional and conceptual issues, the ‘wave’ model of intervention, the use of small group interventions and the need to bridge the research-practice gap experienced by educational professionals.

It is widely acknowledged that social competence correlates with mental wellbeing, engagement with education, achievement in statutory testing and, ultimately, long term quality of life and social mobility (Collaborative for Academic, Social and Emotional Learning [CASEL] 2018; Deming 2017; EIF 2015; Goodman et al. 2015; Gresham 2018; Spence 2003). This highlights the importance of early intervention during the first years of a child’s education. Despite international consensus regarding the importance of social skills, the field is complex and lacks clear definition and specification of skills (Gresham 2018). In relation to identification, some authors have conceptualised underlying social needs as relating to internalising or externalising behaviours, or as a lack of skills versus a lack of motivation to use learned skills; for a summary, see Gresham (2018). Interventions to date seem to target different groups of children, although this tends to be implicit and there is often a lack of theory linking identified needs to specific programme mechanisms and intended outcomes.

Irrespective of conceptualisation, heightened international understanding around the importance of social skills has driven an increase in support available to pupils. Social skills interventions have tended to be delivered in ‘waves’, with wave one being whole school approaches and universal provision, for example the Promoting Alternative Thinking Strategies (PATHS) (see Greenberg et al. 1995) and the Social and Emotional Aspects of Learning, (SEAL) (see Hallam 2009) curricula. Wave two provides additional targeted support for children who do not respond to the universal provision. These are usually short, small group interventions, often led by a member of school staff, and are commonly used but may not be evidence-based (DfE 2012). Although the benefits of supporting social skill development in schools are clear, a key challenge for educational professionals lies in forming a clear conceptualisation of social skills in order to measure impact (Gresham 2018), with schools reluctant to add social skill assessment to an already high level of assessments (Yeo and Graham 2015). As social skills interventions are often delivered as part of a multi-component approach (Spence 2003), this adds further complexity to assessing the effectiveness of social skills interventions.

The research focus for small group social skills interventions thus far has primarily focused on efficacy for specific populations such as autism (for example Wolstencroft et al. 2018). A recent review exploring what works to enhance social skills found that only two interventions could be categorised as well-evidenced for developing social competence, both of which were implemented as part of the primary SEAL programme (Clarke et al. 2015). However, anecdotal evidence and the researcher’s own experience suggests that a larger range of small group social skills interventions are currently being used in schools which may not have a robust evidence-base (DfE 2012). Kelly (2012) recognises that efficacy trials are just one type of evidence-base needed to implement interventions effectively in real-world

contexts. It is also necessary to identify facilitative and hindering factors which might impact upon implementation in more dynamic and less easily controlled real-world environments. This is implementation science (Kelly 2012).

Exploring both universal and targeted interventions, Clarke et al. (2015) reported the following characteristics of programme effectiveness for school-based social skills interventions; a focus on the explicit teaching of skills, empowering and competence-enhancing approaches, the use of interactive teaching methods, well-defined goals and activities congruent with objectives and the use of teacher training and manuals. The small number of existing studies exploring the implementation of wave two interventions has predominantly explored SEAL programmes (Humphrey et al. 2009) and identifies that interventions are often adapted to the unique context of each school and that specific facilitator skills are required for effective delivery. Although the work by Clarke et al. (2015) and Humphrey et al. (2009) provides a useful starting point, to date there has not been a systematic review specifically identifying the characteristics of effective small group social skills interventions. Furthermore, Clarke et al. (2015) only reviewed evidence for interventions in the United Kingdom and included interventions for participants between four to twenty years of age. Additionally, Clarke et al. (2015) only explored cost effectiveness and indicated whether the facilitator was a member of school staff in their focus upon implementation. This lack of information regarding the characteristics of effective interventions in the international field is likely to be impacting upon the ability of educationalists to allocate resources most effectively in terms of commissioning training and purchasing resources. Therefore, the current review aims to bridge this gap by attempting to answer the following research question: ‘What are the characteristics of effective small group social skills interventions for children aged five to eleven in mainstream schools?’

Review process

A systematic search strategy was used, and the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines adhered to (Moher et al. 2009) (see Appendix 5). Between September 2017 and January 2018, systematic searches were completed in the following databases: Psych Info, British Education Index, Applied Social Sciences Index & Abstracts and Educational Resources Information Center. These databases were selected because they included journals with an educational or psychological focus. Reference harvesting identified further literature. Peer-reviewed empirical studies and doctoral theses published in English language were included.

Due to the aforementioned definitional issues, the search focused specifically upon social skills; preliminary searches using variants of ‘socioemotional’ resulted in many irrelevant hits whilst variants of ‘social skills’ resulted in a representative sample of the area of interest. Additionally, prior to the search the authors were aware of relevant papers which were found using the ‘social skills’ search terms. As a result, the authors refined and agreed four key search terms which were combined, for example ‘primary school AND intervention AND social skills AND group’. A range of search terms were used to include a breadth of studies. For example, alternative search terms were used for the educational setting including ‘elementary’ and ‘primary’ to account for studies located in the USA and the UK. Across the four databases, this initially identified a total of 30,871 hits. Given the large number of hits for one database the first 400 abstracts were screened until no relevant hits were identified. In total 1,461 hits were screened. Relevant studies were then screened by the first author in regular consultation with the second author against the following inclusion criteria; full text access to empirical papers exploring the effectiveness of a social skills intervention in a mainstream primary or elementary educational setting with outcome measures specifically

focusing on social skills. A total of thirty papers fully met the inclusion criteria and were further refined by screening against exclusion criteria in Table 1 below.

Exclusion criterion	Description
1	Study focused on a specific population, e.g. autism
2	Participants were younger than five or older than 11
3	Participants did not access mainstream education
4	Study was hypothetical or opinion based
5	Outcome measures did not focus on social skills
6	Research did not involve school staff
7	Fewer than three or more than 12 target children in the intervention group (excluding typically developing peers)
8	Intervention is multi-level, therefore outcome may not be due to intervention

Table 1: Exclusion criteria.

Of the thirty papers screened, fifteen were excluded at this stage (see Appendix 6). The most common reasons for exclusion were; the paper focused on a specific population, used outcome measures which did not measure social skills or was multi-component and therefore it was not certain that results were due to the intervention. Although some papers described an intervention as a ‘group’ intervention, having three or more target children in the group was deemed appropriate by the authors in order to make a judgement on effectiveness. Additionally, the studies had to have some involvement of school staff for social validity.

Evaluative frameworks

Each of the fifteen papers which met the inclusion criteria and which passed screening against the initial exclusion criteria were coded using frameworks based upon Gough (2007). Firstly, the generic coherence and integrity of the fifteen papers was coded using an adapted evaluative framework for quantitative evaluative studies developed by Woods et al. (2011) (see Appendix 7). This gave a Weight of Evidence A score for each paper. As described in

Table 2, studies could score a maximum of eight points. Due to the heterogeneous nature of the studies and anticipating a high number of practitioner studies, it was agreed that the ‘low’ band would be weighted more generously than the ‘medium’ and ‘high’ bands. This is due to the nature of practitioner studies generally scoring lower on generic coherence, therefore allowing only more coherent studies through to the final selection. The bands were categorised as low (scoring 0-3.49), medium (3.5-5.49) or high (5.5-8).

Maximum score	Description
1	Use of randomised group design
1	Focus on a specific, well-defined problem or disorder including coherency between selection of participants and outcome measures
1	Comparison with treatment-as-usual, placebo or, less preferably, standard control
1	Use of manuals/protocol/training
1	Fidelity checking procedure/supervision
1	Sample large enough to detect effect
2	Use of outcome measure(s) that has demonstrably good reliability and validity

Table 2: Weight of Evidence A criteria.

Initially, three papers were coded separately by both authors. The initial inter-rater coefficient was 73%. After a process of moderation, the inter-rater coefficient was 100%. The first author then coded the remaining twelve papers in regular consultation with the second author.

Secondly, in a more review-specific phase, each study was coded by the first author according to the evidence for efficacy to give a Weight of Evidence C score (Gough 2007). This coding system was adapted from one developed by the second author and used in a previous literature review (Bond et al. 2016). As described in Table 3 below, studies could score between 0-4 points for WoE C:

Score	Description
0	Results indicate no significant change and therefore no evidence for efficacy
1	Intervention is effective using pre- and post-measures only
2	Intervention is effective against standard control e.g. treatment as usual
3	Intervention is as effective as active control e.g. similar intervention
4	Intervention is more effective than active control e.g. similar intervention

Table 3: Weight of Evidence C efficacy descriptors.

The experimental nature of the studies and the specificity of the inclusion and exclusion criteria enabled the identification of methodologically appropriate studies. Therefore it was not necessary to develop further criteria relating to Weight of Evidence B (methodological appropriateness).

Overview and appraisal of the included studies

To be included in the final analysis, the papers had to meet all initial inclusion criteria, could not meet any exclusion criteria, scored higher than 3.49 for WoE A and scored 1 or more on WoE C. After coding, eleven papers met these requirements and were therefore eligible for final analysis (see Table 4 for descriptive summary).

Table 4: Key details of included studies.

Study	School & country	Design	Target pupils	Group size	Method of selection	Social skills intervention and dosage	Facilitator	Outcome measures	Findings	WoE A	WoE C	Fidelity
Baker, Parks-Savage and Rehfuss (2009)	Elementary, USA	IM	8x 7-10 years	8	Peer rating	Whyville Multi User Virtual Environment 45 minutes x6 weeks	Not specified	Social Skills Rating System (SSRS) teacher, parent, child	Improved measures of problem behaviour, cooperation, responsibility, self-control	3.75, Med	2	None
Berner, Fee and Turner (2001)	Elementary, USA	IM	19x grade 5-6	5	Teacher nomination	Friendship group intervention 60 minutes x6 twice weekly	Therapist and undergraduate assistants	Direct observation of target behaviours. SSRS-teacher	No significant difference on SSRS. Observational categories as a function of treatment and control groups were found to be significant	4.5, Med	2	Integrity - scripts, checklists

Elementary, USA	IM	22x 8-11 years	4-6	Teacher Checklist rating, peer nomination	Best Foot Forward 60 minutes x32 over 12 weeks	Graduate students	Aggressive Beliefs Questionnaire – self. School Attitude Measure – self. Using and honouring accounts, attributions for failure, SSRS, lab maze task, semester grades, teacher comments	Less likely to believe aggression to others is legitimate, reduced perceived peer hostile intent, less likely to attribute failure to external causes, increase in social skills and academic motivation skills, rated by teachers to be more cooperative	6, High	2	Manualised and pilot tested, debriefing, 25% sessions rated
22x Primary, UK	QE	102x 6-11 years	Small group	School staff selection	Going For Goals 45 minutes x8 weeks	Trained school staff	Emotional Literacy Assessment and Intervention (ELAI) child, parent, staff. SDQ staff, parent	Improved social and emotional skills, reduced behavioural and emotional difficulties. No parental support for effectiveness	5.75, High	2	None

Humphrey et al. (2010b)	37x Primary, UK	QE	159x 6-11 years	Small group	School staff selection	New Beginnings 45 minutes x7 weeks	School staff	ELAI child, teacher, parent. Strengths and Difficulties Questionnaire (SDQ) teacher, parent	Pupils reported improved social and emotional competence. No parental or teacher support for efficacy	5.25, Med	2	None
Knowler and Frederickson (2013)	4x Primary, UK	IM	22x 8-9 years	5-6	Peer rating	Emotional literacy intervention 40-60 minutes x12 weeks	Trained teaching assistants	Guess Who - Bullying & Victimization. ELAI pupil. Trait Emotional Intelligence Questionnaire (TEIQ)- Child. SDQ Self-Report	Increased EI associated with decreased bullying and adjustment difficulties	6.5, High	2	TA training, observation, phone support. Discussed session records, observation
Lane et al. (2003)	Elementary, USA	SCED	7x 8-10 years	5	SSRS-teacher	Social skills instruction 30 minutes 2 days a week x10 weeks	Doctoral students	Direct observation measures	Rapid decreases in disruptive behaviour, decreases in negative social interaction suggesting improved social competence	4.25, Med	1	Weekly supervision. Treatment integrity – scripts, first author collected data for 25% of sessions

Maddern et al. (2004)

Newgent et al. (2010)

Primary, UK	QE	8x 9-11 years	8	School staff selection with EP	Cooperative skills and anger management 90 minutes x20 weeks	Child and Adolescent Mental Health (CAMHS) staff supported by school staff and EP	Culture Free Self Esteem (CFSE) child, Spence Children's Anxiety Scale-child. Social Competence with Peers Questionnaire -pupil, parent, teacher. Anger management checklist – teacher. Conners-parent, teacher	Anxiety and oppositional scores significantly decreased. Teacher reported higher anger management scores with lower hyperactivity and ADHD scores. Cooperative behaviour increased	3.75, Med	1	None
Elementary, USA	QE	31x 8-11 years	Not stated	School staff referral	PEGS 30 minutes x6 weeks	Co-facilitated by 4 graduate students	SSRS. Peer relationship measure - teacher, child. Modified Rosenbergs Self Esteem Inventories a, b	Improved self-control in children with behavioural and social skill needs. No statistical change for children with only low social skills. Improved assertion and decreased bullying behaviours in children with no clinical but teacher perceived need	5.5, High	1	Supervision

Prince, Ho and Hansen (2010)	Newgent et al. (2011)	Elementary, USA	QE	15x 9-11 years	11x PEGS, 4x ARK	Referral	Psychosocial Educational Groups for Student (PEGS), At-Risk Kids Group (ARK)	Graduate students	Social Skills Improvement System (SSiS) - teacher, student. Peer Relationship Measure (PRM) - Teacher, Self. Modified Rosenberg's Self Esteem Inventories a, b	No difference pre/post between PEGS and ARK	3.5, Med	3	Supervision
		14x Elementary, USA	IM, 2002-2007	336x 7-11 years	6-8	School staff referral	Living Skills Program 45-60 minutes, 10-12 biweekly classes	Trained Prevention Specialists	Walker-McConnell Scale of Social Competence and School Adjustment - Teacher. IOWA Conners - Teacher	Positive effect for peer and teacher preferred behaviours and school adjustment. Improvement in measures of inattention, overactivity, opposition, defiance	6, High	2	None
<p><i>Note</i> IM - Independent Measures QE – Quasi-Experimental SCED – Single case study design</p>													

Summary of included studies: context

The eleven included studies were published between 2001 and 2014 and consisted solely of articles published in peer reviewed journals. Four studies were located within the UK with the remaining seven from the USA. Although the scope of the current review aimed to include social skills interventions with children aged five to eleven years, the included studies most commonly focused on children aged eight to eleven years. Many studies used a QE design without random allocation or a control condition despite the randomised control trial being widely regarded as the most appropriate design for determining cause and effect (Shavelson et al. 2003). The following analysis aims to capture the qualities of effective small group social skills interventions, including the characteristics of the intervention, programme implementation and programme evaluation.

Characteristics of the intervention

Four of the eleven studies included typically developing peers as role models for the target children in the group (Baker, Parks-Savage and Rehfuss 2009; Humphrey et al. 2010a, 2010b; Lane et al. 2003) with the remaining papers including only target children identified as requiring the intervention. Group sizes ranged from between four to six (Graham, Taylor and Hudley 2015) to eleven (Newgent et al. 2011) with the average being five to eight children (Baker, Parks-Savage and Rehfuss 2009; Berner, Fee and Turner 2001; Knowler and Frederickson 2013; Lane et al. 2003; Maddern et al. 2004; Prince, Ho and Hansen 2010). Three papers reported ‘small group’ delivery but did not specify the group size (Humphrey et al. 2010a, 2010b; Newgent et al. 2010).

A different intervention was explored in each study, with the exception of the PEGS programme, which was evaluated in both a standalone efficacy trial (Newgent et al. 2010)

and in comparison to the efficacy of the ARK (Newgent et al. 2011). The interventions focused on a range of skills such as interpreting intentionality of behaviours and social cues (Graham, Taylor and Hudley 2015), social problem solving skills (Berner, Fee and Turner 2001; Maddern et al. 2004; Newgent et al. 2010, 2011), cooperation (Baker, Parks-Savage and Rehfuss 2009; Lane et al. 2003; Maddern et al. 2004; Newgent et al. 2010), assertiveness (Baker, Parks-Savage and Rehfuss 2009; Lane et al. 2003; Newgent et al. 2010, 2011), self-esteem (Newgent et al. 2010, 2011), empathy (Baker, Parks-Savage and Rehfuss 2009; Knowler and Frederickson 2013; Lane et al. 2003), self-control (Baker, Parks-Savage and Rehfuss 2009; Lane et al. 2003), confidence and self-efficacy (Humphrey et al. 2010b) and self-awareness and self-regulation skills (Humphrey et al. 2010a, 2010b; Knowler and Frederickson 2013; Maddern et al. 2004).

Each intervention appeared to utilise a range of teaching strategies with the most common being group discussion (Baker, Parks-Savage and Rehfuss 2009; Berner, Fee and Turner 2001; Humphrey et al. 2010a, 2010b; Knowler and Frederickson 2013; Lane et al. 2003; Maddern et al. 2004; Prince, Ho and Hansen 2010). Interactive strategies with problem-solving elements such as role play also featured (Berner, Fee and Turner 2001; Knowler and Frederickson 2013; Lane et al. 2003). The facilitator modelling social skills was employed in only two studies (Baker, Parks-Savage and Rehfuss 2009; Berner, Fee and Turner 2001).

Finally, there was variation in the coherence between the target social skill and the outcome measures used; only three studies scored highly for this aspect of Weight of Evidence A (Graham, Taylor and Hudley 2015; Newgent et al. 2010, 2011). The remaining

papers used one measure to identify participants and another to measure outcomes, or had more tentative links between the social skill conceptualisation, measures and the intervention. For example, Humphrey et al.'s (2010a) intervention intended to develop children's social and emotional skills, emotional wellbeing and behaviour, yet teachers identified target children as those who were uninterested in learning. Furthermore, the activities developed goal-oriented behaviours whilst the outcome measure focused on emotional literacy.

Programme implementation

There was wide variation in the methods used to select participants for the interventions across the studies; three studies employed sociometrics or peer rating (Baker, Parks-Savage and Rehfuss 2009; Graham, Taylor and Hudley 2015; Knowler and Frederickson 2013), four studies used teacher identification of children who met a descriptive criterion such as 'those with few friends' (Berner, Fee and Turner 2001; Humphrey et al. 2010a, 2010b; Maddern et al. 2004), two studies employed a teacher checklist (Graham, Taylor and Hudley 2015; Lane et al. 2003) and three studies used a referral system (Newgent et al. 2010, 2011; Prince, Ho and Hansen 2010). Interestingly, only Graham, Taylor and Hudley (2015) used multiple informants to select participants by collecting both teacher rating and peer nomination. All of the studies which utilised a referral system to select programme participants were located within the USA (Newgent et al. 2010, 2011; Prince, Ho and Hansen 2010) where referral to a school-based counselor is common practice.

The interventions also varied in terms of the programme facilitator. Only three studies used a trained member of school staff (Humphrey et al. 2010a, 2010b; Knowler and Frederickson 2013), all of these being located within the UK. Three studies employed

specialist or outside agencies as facilitators, including CAMHS workers (Maddern et al. 2004), therapists (Berner, Fee and Turner 2001) or Prevention Specialists (Prince, Ho and Hansen 2010). Four studies, all in the USA, used doctoral researchers as facilitators (Graham, Taylor and Hudley 2015; Lane et al. 2003; Newgent et al. 2010, 2011). One study (Baker, Parks-Savage and Rehfuss 2009), exploring the use of virtual environments for social skills intervention, did not specify who the programme facilitator was.

Six studies used interventions based upon previously published schemes of work or intervention materials (Berner, Fee and Turner 2001; Graham, Taylor and Hudley 2015; Knowler and Frederickson 2013; Lane et al. 2003; Newgent et al. 2010, 2011). Four implemented a bespoke intervention with no reference to previously published interventions (Humphrey et al. 2010a, 2010b; Maddern et al. 2004; Prince, Ho and Hansen 2010); one was a previously piloted intervention (Graham, Taylor and Hudley 2015) and two studies formed the pilot for the intervention (Baker, Parks-Savage and Rehfuss 2009; Knowler and Frederickson 2013).

Only four of the studies explicitly checked programme fidelity. Knowler and Frederickson (2013) triangulated fidelity using researcher observation, appraisal of session records and a fidelity questionnaire. Lane et al. (2003) monitored delivery against scripts during 25% of the sessions, whilst Graham, Taylor and Hudley (2015) observed 25% of sessions. Both of the Newgent et al. (2010) and (2011) studies stated that facilitators accessed supervision but it was not explicit whether this included fidelity appraisal. None of the studies explicitly discussed whether the intervention had been adapted to the context. Fidelity is only one aspect of implementation (Durlak and DuPre, 2008), therefore there are other

aspects such as dosage, quality, participant responsiveness and adaptations which require consideration. Furthermore, the evaluation of implementation factors was relatively limited across the included studies suggesting a significant gap in the existing literature.

Programme evaluation

There were a broad range of programme evaluation methods employed in the included studies. Three papers demonstrated programme efficacy by comparing outcome measures for the same children pre- and post-intervention (Lane et al. 2003; Maddern et al. 2004; Newgent et al. 2010). Most commonly, outcome scores for target children were compared to a standard control or the treatment-as-usual group (Baker, Parks-Savage and Rehfuss 2009; Berner, Fee and Turner 2001; Graham, Taylor and Hudley 2015; Humphrey et al. 2010a, 2010b; Knowler and Frederickson 2013; Prince, Ho and Hansen 2010). Only Newgent et al. (2011) compared the target intervention with an active control using a similar but different intervention. Only Humphrey et al. (2010a), Lane et al. (2003) and Newgent et al. (2010) carried out a follow-up phase in addition to the pre- and post-test measures.

All studies measured change in multiple dependent variables, using a range of social skill rating scale instruments. Berner, Fee and Turner (2001), Baker, Parks-Savage and Rehfuss (2009), Newgent et al. (2010) and Graham, Taylor and Hudley (2015) used the Social Skills Rating System (Gresham and Elliott 1990). Newgent et al. (2011) used the Social Skills Improvement System (Gresham and Elliott 2008), whilst Maddern et al. (2004) used the Social Competence with

Peers Questionnaires (Spence 1995). Newgent et al. (2010, 2011) used the Peer Relationship Measures (Newgent, unpublished) which was developed for the PEGS

programme whilst Prince, Ho and Hansen (2010) used the Walker McConnell Scale of Social Competence and School Adjustment (Walker and McConnell 1995). Additionally to measuring social skill development, some studies measured the impact of the intervention on emotional development, for example Knowler and Frederickson (2013) and Humphrey et al. (2010a, 2010b) used the Emotional Literacy Assessment and Intervention (Faupeil 2003) and Knowler and Frederickson (2013) used the Trait Emotional Intelligence Questionnaire (Mavroveli et al. 2008).

Direct observation of target behaviours was also used to measure the impact of the intervention on very specific outcomes; whilst Berner, Fee and Turner (2001) used direct observation alongside teacher ratings, Lane et al. (2003) used only direct observation and no standardised rating scales to evaluate outcomes.

Most studies sought measures from multiple informants. Child self-report was utilised in eight studies (Baker, Parks-Savage and Rehfuss 2009; Graham, Taylor and Hudley 2015; Humphrey et al. 2010a, 2010b; Knowler and Frederickson 2013; Maddern et al. 2004; Newgent et al. 2010, 2011), teacher rating was utilised in nine studies (Baker, Parks-Savage and Rehfuss 2009; Berner, Fee and Turner 2001; Graham, Taylor and Hudley 2015; Humphrey et al. 2010a, 2010b; Maddern et al. 2004, Newgent et al. 2010, 2011; Prince, Ho and Hansen 2010), whilst only four included parental rating (Baker, Parks-Savage and Rehfuss 2009; Humphrey et al. 2010a, 2010b; Maddern et al. 2004). Notably, each of the studies which sought parental views on the efficacy of the intervention also sought teacher and pupil self-report data. Furthermore, two of the studies which sought parental outcome measures reported low parental engagement (Humphrey et al. 2010b; Maddern et al. 2004).

One study employed only pupil report (Knowler and Frederickson 2013) and Prince, Ho and Hansen (2010) used only teacher rating methods to measure efficacy.

Only one study (Lane et al. 2003) explicitly sought pupil voice regarding their experience of the intervention or whether it met their perceived needs using the Intervention Rating Profile for teacher and pupil social validity measures. Lane et al. (2003) found that teachers perceived the intervention as favourable and all children rated the intervention as acceptable. In this respect, the participant responsiveness was not fully taken into account across the interventions.

The strength of evidence for programme efficacy was variable. Some studies indicated strong evidence, for example Berner, Fee and Turner (2001) found that a social skills and problem-solving intervention for girls with few friends led to more time spent in conversation and increased initiation of conversation among the intervention group compared to the control group. Meanwhile other studies found that the intervention improved some but not all target skills, for example Baker, Parks-Savage and Rehfuss's (2009) exploration into a virtual environment found efficacy across only four of seven focus skills. Many of the studies' findings suggest that teachers, parents and pupils may perceive the efficacy of the intervention differently. Most notable were the Humphrey et al. (2010a) and (2010b) studies which explored the Going for Goals and New Beginnings interventions respectively. Although target children (not role models) perceived an increase in social competence after New Beginnings, teacher and parent ratings showed no significant impact of the intervention. They found a similar pattern for Going for Goals, although the authors noted that low parental engagement could have negatively impacted upon reported parental perceptions.

Discussion

The results of this review highlight the complexities of conceptualising, measuring and judging the effectiveness of social skills interventions, and that the characteristics of effective social skills interventions vary greatly. The results also identify a need for these interventions to be underpinned by clearer programme theory, which should also take into account implementation science, in order for the intervention to have the intended impact.

With regards to the complexities of measuring effectiveness, the included papers employed predominantly single output evaluations. Whilst helpful in ascertaining whether an intervention *will* work, such studies do not adequately elicit *how* it may work in the context of the ‘wave’ model often used within schools. Wave two intervention must complement wave one provision, be driven by school leadership and fit with school ethos and priorities (Office for Standards in Education, Children’s Services and Skills [OfSTED] 2009) in order to become embedded and deliver impact. Therefore, there is a need for implementation evaluation studies to guide implementation, such as Kam, Greenberg and Wall’s (2003) PATHS implementation study.

Interpreting outcomes is also potentially difficult. Reported efficacy varied between respondents, for example pupils perceiving intervention benefit whilst parents and teachers did not (Humphrey et al. 2010b). Although the assessment of social skills should include behaviours in a range of contexts (Spence 2003), this can increase complexity in interpreting outcome data. De Los Reyes et al.’s (2015) meta-analysis of the validity of multi-informant measures found informants’ reports of observable, externalising behaviours correlated more

strongly than ratings of internalising behaviours. Also, not all included studies reported reliability coefficients for measures used. Therefore, it should not be assumed that the measures were reliable (Thompson et al. 2005). These factors, combined with variation in evaluation design, lead to difficulties when comparing the effectiveness of interventions, particularly given that each study (with the exception of PEGS) was supported by only one empirical study. Furthermore, outcome measures were not always congruent with the programme outcomes; if the outcome measure is not appropriately measuring the skill intended to be developed, then the coherency of programme theories may not be robust enough (Chen and Rossi 1992).

Given that few studies gathered follow-up data in addition to pre- and post-test data, the currently available literature does not yet ascertain the longer term efficacy of social skills interventions. This is pertinent given that social skill difficulties are pervasive and, as such, a challenge in social skills intervention development is the production of long lasting, generalisable results (Spence 2003). The implication is that schools may be implementing interventions with only short-term effects, impacting upon cost-effectiveness of training.

Although a range of teaching strategies were used across the interventions in the included studies, it is promising that many of these correlate with previously identified features of programme effectiveness (Clarke et al. 2015). All of the studies focused upon the explicit teaching of skills, with many focusing on at least one of the CASEL competencies. These included self-awareness and self-management through regulation of angry feelings (Maddern et al. 2004), social awareness (Newgent et al. 2011), relationship skills including cooperation (Baker, Parks-Savage and Rehfuss 2009) and responsible decision-making such

as selecting appropriate behaviours (Graham, Taylor and Hudley 2015), as well as interpersonal problem-solving (Berner, Fee and Turner 2001). Furthermore, most interventions utilised interactive teaching approaches such as group discussion, role play and group activities.

One aspect of Clarke et al.'s (2015) programme effectiveness which the included studies did not demonstrate consistently was the presence of well-defined goals. Although each study appeared to have a pre-defined objective, there was no consistent use of selection, assessment or outcome measures. Unclear programme theory could arise from the difficulties in conceptualising social skills described by Gresham (2018); if researchers are not able to clearly conceptualise these skills, this will impact upon their ability to screen and select to select the most appropriate participants, develop an appropriate intervention and to measure efficacy. For example, intervention required by children with a performance deficit is likely to require environmental modification to increase their motivation to use said skills (Gresham 2018; Spence 2003), but screening tools may not yet be sufficiently specific to match children to the most appropriate intervention. Indeed, only Maddern et al. (2004) noted that their study would have benefitted from more carefully considered assessment and selection of participants. Consequently, if the programme theory underpinning the intervention is not clear, it is unreasonable to expect school staff to be able to implement the intervention effectively, impacting upon the extent to which the intended programme effects are brought about (EEF 2018; Lyon 2018).

In addition to clearer conceptualisation of programme theory, a next step could be for researcher-school collaboration on implementation evaluations which take into account

factors such as fidelity and adaptations (see Durlak and DuPre 2008), social validity (see Lendrum 2017) and implementation quality (Lendrum, Humphrey and Greenberg 2016). This would then facilitate more robust programme evaluation and exploration of how a programme operates in ‘real world’ rather than clinically controlled settings. Given that implementation quality impacts upon programme outcomes (Durlak and DuPre 2008) it is arguable that schools require more guidance regarding the effective implementation of interventions. Despite this, the research regarding the implementation of small group social skills interventions is currently sparse and would benefit from further research.

There are several limitations of the current review which warrant consideration. Firstly, a number of good-quality studies, including doctoral theses, were excluded on the grounds that the intervention did not demonstrate programme effectiveness. Exploring the implementation of these programmes could help clarify if this is due to programme- or implementation-failure. Additionally, the search term ‘intervention’ broadened the search to include some interventions which included both a social and emotional element. Further research could more robustly explore programmes supporting emotional development as this was not a focus of the current study.

Conclusion

This review of literature on group social skills interventions indicates that the field is at an early stage of development and that programme developers need to consider the theoretical basis of their interventions and the impact of this on effective implementation in schools. The included studies were single output evaluations rather than context or process driven evaluations, often carried out by a graduate student or external professional. Furthermore,

there was little or no consideration of implementation factors on outcomes. For more thorough programme evaluation there should be improved practitioner-researcher collaboration with a systematic focus upon implementation. Although guidance is available for schools regarding implementation (Education Endowment Foundation [EEF] 2018), it must be recognised that this is a long term and iterative process (Lyon 2018) which would benefit from collaboration between programme developers and school staff. One proposal is for trained school staff to work under the guidance of researchers to implement researcher-developed interventions which have a clear programme theory and are informed by implementation science. Over time, this iterative collaboration could lead to more robust programme evaluation.

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Paper 2. The Implementation of Lego®-Based Therapy in Two Mainstream Primary Schools.

Prepared in accordance with author guidelines for submission to School Psychology International (Appendix 2)

Word length: 5994

This project was funded through England's Department for Education (DfE) National College for Teaching and Learning (NCTL) ITEP award 2016-2019.

Abstract

Small group interventions are often used in schools to support the development of children's social skills. One such intervention, Lego[®]-Based Therapy (LBT) is increasingly popular in schools. Although LBT has an emerging evidence-base, there is limited research exploring effective LBT implementation. An in-depth, exploratory multiple-case study design was used to explore the process of LBT assimilation in two English mainstream primary schools which were considered to have implemented LBT effectively and reported positive program outcomes. Data collection was through structured observations and semi-structured interviews based upon Durlak and DuPre's (2008) established Ecological Framework for Implementation. Transcripts were subjected to hybrid inductive-deductive thematic analysis before triangulation with observation data. The themes largely mapped onto the EFI. However, the themes of 'facilitator factors', 'participant responsiveness' and 'peer support' emerged inductively, suggesting that a revised model of implementation factors is required for LBT. The research highlights the importance of School Psychologists basing implementation support to schools around a model of implementation and ensuring that implementation is viewed as a cyclical, iterative process. Limitations and future research are discussed.

Key words: Lego-Based Therapy, implementation, interventions, schools, school psychology

Introduction

It is widely accepted that social competence correlates with later life outcomes in mental wellbeing, education, employment, crime and substance misuse (Chernyshenko, Kankaraš & Drasgow, 2018). This raises the importance of identification and intervention at an early stage of a child's education. However, there is no agreed definition or conceptualization of social skills (Gresham, 2018), contributing to complexities in measuring, assessing and identifying need and progression in these skills (Wigelsworth, Humphrey, Kalambouka & Lendrum, 2010). Interventions for pupils with social, emotional and mental health needs include universal intervention for all pupils. These are often curricula such as Promoting Alternative Thinking Strategies (PATHS) (see Greenberg, Kusche, Cook & Quamma, 1995) which are delivered as part of the school's standard offer. For most children, this is sufficient. However, a small number require further, targeted support, often delivered to small groups of children based on assessed need. This is supported through use of scientifically valid and reliable tools to monitor progress, forming the Response to Intervention (RTI) approach (Sailor, 2009) in the USA.

A recent systematic literature review (Evans & Bond, 2019) exploring the characteristics of effective small group social skills interventions in the primary age phase (five to 11 years) suggests that, despite being widely used across educational settings, these interventions are often developed independently of schools and very few are adequately informed by implementation models. One such intervention which is becoming increasingly popular in schools is Lego[®]-Based Therapy (LBT).

LBT is a small group, targeted social skills intervention in which an adult facilitates social interactions between pupils, who take one of three set roles. Only by working collaboratively can the model be built (for a more detailed description, see LeGoff, Gomez de la Cuesta, Krauss, & Baron-Cohen, 2014). In summary, LeGoff et al. (2014) describe Lego Therapy as a collaborative play therapy where the successful building of the model is only possible through verbal and non-verbal communication. This communication is fostered by the pupils adopting specific roles, namely the 'Engineer', who gives verbal descriptions of the pieces required to the 'Parts Supplier' who identifies the correct piece, asking for clarification from the Engineer if necessary. Once the Parts Supplier has found the correct piece, they pass this to the 'Builder', who should be prompted by the Engineer to place the piece in accurately on the model. The communication should be facilitated by the group leader, ideally a member of staff who is experienced and qualified in working with young people with autism or social communication difficulties. LeGoff et al. (2014) identify that the motivational and fun characteristic of Lego® promotes intrinsic motivation to communicate with others in children with autism. Other than identifying that using Lego® for social development intervention was based upon Attwood's (1997) constructive application theory, there is little reference to the theoretical underpinnings of LBT by LeGoff et al. (2014), possibly because the intervention developed through professional practice.

LBT is regarded as having growing practice-based evidence but is not yet considered evidence-based practice (Bond et al., 2016). A recent literature review demonstrated that LBT could be effective in developing children's social communication skills and concluded that further research is needed into LBT

implementation and outcomes (Lindsay, Hounsell & Cassiani, 2017). Only three of the 15 papers within the literature review undertaken by Lindsay, Hounsell and Cassiani (2017) assessed integrity and fidelity. Given that two of the three papers which did carry out fidelity checks were doctoral theses (Boyne, 2014; Brett, 2013), only one study published in a peer reviewed journal reviewed by Lindsay et al. (2017) commented upon treatment integrity (Huskens, Palmen, Van der Werff, Lourens & Barakova., 2015). All three of these studies carried out treatment fidelity checks such as the facilitator completing tick lists or researcher observations, but no studies explicitly explored the impact of implementation factors.

The researcher's own practice experience indicates that LBT is being utilized to promote skill development in children with an increasing range of needs. Even within Lindsay et al.'s (2017) review which focused on LBT use for children with autism, LBT had been delivered in clinics, schools, in the community, by parents and by robots. Given that LBT is being used in an increasingly diverse way, and because there is increasing evidence for the efficacy of LBT, there is clear need for research into the implementation of LBT. Although Lindsay et al. (2017) identify that both LBT outcomes and implementation warrant further research, the current study focuses upon the significant gap regarding LBT implementation. This is to better inform how the intervention should be implemented to achieve the positive program results suggested by the current evidence-base.

A challenge in terminology and definition arises; as Greenhalgh et al. (2005) explain, definitions vary and labels such as 'implementation', 'adoption' and a host of other are often used in the literature. Furthermore, definitions tend to be context

dependent and influenced by sociocultural traditions. For the purpose of clarity, this research defines implementation as the process of putting interventions into practice, with implementation science exploring and attempting to explain how interventions work in real-life contexts (Kelly, 2012). Furthermore, the term 'assimilation' in this research is used to describe the complex adjustments that are often required prior to and during the implementation of an intervention (Greenhalgh et al. 2005). The term 'delivery' is used to describe how the intervention is carried out on a day-to-day basis which contrasts with the broader and longer term notion of implementation. Much research interest has studied implementation and assimilation in other services, including the healthcare sector (see Greenhalgh et al., 2005) and, in recent years, interest has also grown in education. This has focused particularly upon implementation of whole-school interventions, for example the PATHS (see Greenberg et al., 1995) and Social and Emotional Aspects of Learning (SEAL) curricula (see Lendrum, Humphrey & Wigelsworth, 2013), with barriers being found at the program, teacher and school levels. Similarly, Greenberg, Domitrovich, Craczyk and Zins (2005) identify classroom, school, district and community level factors impacting upon implementation of interventions. Building on this, Durlak and DuPre (2008) carried out a literature review on the implementation of universal interventions and developed the widely accepted Ecological Framework for Implementation (EFI). Durlak and DuPre (2008) identified a range of key implementation factors including characteristics of the provider, characteristics of the intervention and factors relating to training and capacity.

In comparison, there is a scarcity of research into implementation of targeted interventions, though these are often used in schools. Because implementation

quality impacts upon outcomes (Snow & Juel, 2005) and variability in implementation relates to variability in outcomes (Lendrum & Humphrey, 2012), it is essential to understand how small group interventions should be implemented. One study by Humphrey, Lendrum, Wigelsworth and Kalambouka (2009) did evaluate implementation factors of small group SEAL interventions and devised a model of factors specific to this intervention. This discrepancy in research between the implementation of universal and targeted interventions is possibly due to the nature of universal interventions being more straightforward and 'one size fits all', whilst targeted interventions must meet varying and unique needs of children with additional needs and are, potentially, more complex.

As a result, a clear research-practice gap emerges. Although research indicates that implementation matters, no such model is being used to guide practice in relation to LBT. This is surprising given that school psychologists (SPs) and educational psychologists (EPs) must work in evidence-informed ways (British Psychological Society [BPS], 2015; National Association of School Psychologists [NASP], 2010). Recommending evidence-based interventions alone is insufficient without a consideration of implementation. The implementation of interventions in unpredictable and dynamic real-world contexts very much varies from the carefully controlled environments of empirical studies from which evidence-based interventions arise (Kelly, 2012). Variability of implementation has a significant effect on outcomes (Durlak & DuPre, 2008) leading to calls for greater attention to implementation in educational research (Lendrum & Humphrey, 2012) and LBT specifically (Lindsay et al., 2017). Therefore, the current study aims to address the following research questions:

- How have two mainstream primary schools assimilated and implemented LBT?
- What are the factors influencing the implementation of LBT in two mainstream primary schools?

Method

The theoretical framework underlying the current study is primarily based upon Durlak and DuPre's (2008) EFI, a widely accepted model of implementation which posits that various contextual factors impact upon intervention implementation in each context, which may overlap and interact. The factors impacting implementation at each level are outlined in more detail in Figure 1 and Table 5 and were used to guide data collection during the current research.

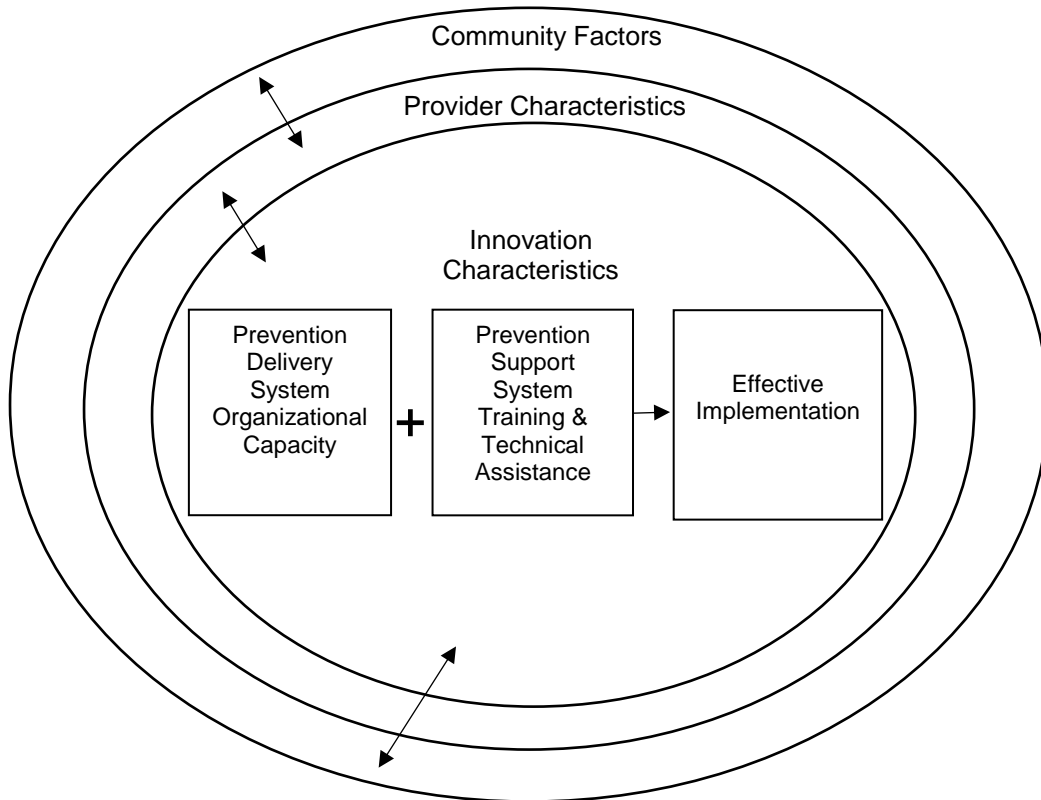


Figure 1: Ecological Framework for Implementation (Durlak & DuPre, 2008: 335).

1. Community	A. Prevention theory/research	
	B. Politics	
	C. Funding	
	D. Policy	
2. Provider Characteristics	A. Perceived need	
	B. Perceived benefit	
	C. Self-efficacy	
	D. Skill proficiency	
3. Characteristics of the intervention	A. Compatibility	
	B. Adaptability	
4. Factors relevant to Prevention Delivery System	A. General organizational factors	i. Positive work climate
		ii. Norms regarding change
		iii. Integration of new programming
		iv. Shared vision
	B. Specific practices/processes	i. Shared decision-making
		ii. Coordination with other agencies
		iii. Communication
		iv. Formulation of tasks
	C. Specific staffing	i. Leadership
		ii. Champion
		iii. Managerial/supervisory
	5. Factors relating to Prevention Support System	A. Training
B. Technical assistance		

Table 5: Factors affecting implementation (Durlak & DuPre, 2008: 337-8).

Although to date there has been very little research focusing on LBT implementation, related research informed the following propositions:

- Children with a diagnosis of autism or other social communication difficulty may be participants.
- Children engage in a structured activity, taking prescribed roles.
- A trained facilitator supports social interactions.
- Factors will impact upon LBT implementation.
- Adaptations will have been made to the intervention.

The research adopted a critical realist epistemology, analyzing the context and mechanisms relating to LBT implementation. An exploratory multiple-case study

design with embedded units of analysis (UoA) was used, informed by Yin (2014).

Figure 2 illustrates the overall case study design and each UoA:

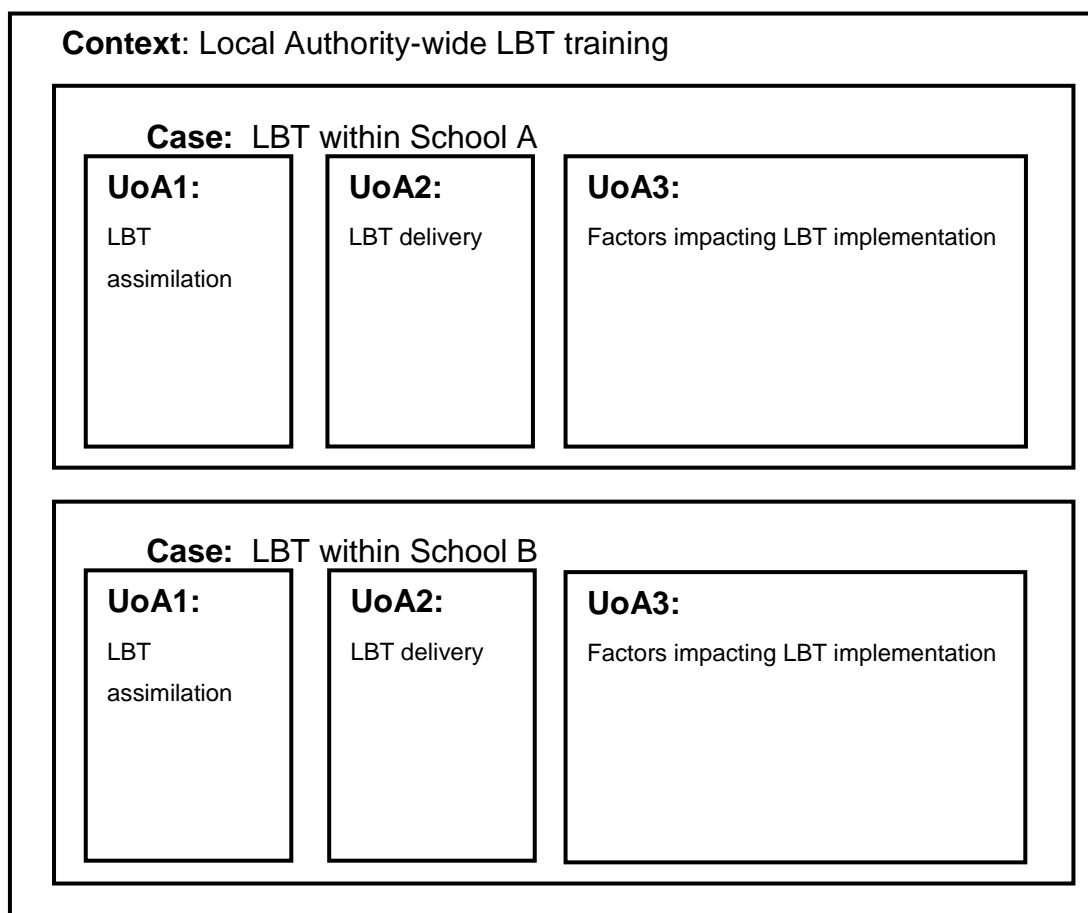


Figure 2: Units of analysis

Table 6 identifies how the units of analysis relate to the research questions and identifies the methods of data collection linking to these.

Research question	Unit of analysis	Data gathering method
RQ1 How have two mainstream primary schools assimilated and implemented LBT?	UoA1: Process of adoption of Lego Therapy	<ul style="list-style-type: none"> • Staff interviews • Direct observation
	UoA2: Direct delivery of Lego Therapy	<ul style="list-style-type: none"> • Staff interviews • Direct observation • Researcher field notes
RQ2 What are the factors influencing the implementation of LBT in two mainstream primary schools?	UoA3: Factors impacting upon the implementation of Lego Therapy	<ul style="list-style-type: none"> • Staff interviews • Direct observation • Researcher field notes

Table 6: Linking data gathering methods to the research questions

Ethical approval from the host institution was received on 7th December 2017 (Appendix 8). Schools were selected on the basis of meeting specific inclusion criteria: school staff participated in LBT training from the Educational Psychology Service (EPS), the school self-identified that their use of LBT was effective, the link EP perceived the school to have implemented LBT well, and multiple LBT cycles had been completed. Schools self-selected and were invited to participate until two schools were recruited. School A was a one-form entry primary school² of approximately 200 children. The school had well-developed nurture provision with an allocated nurture room. School B was a 1.5-form entry primary school of approximately 300 children and was part of a multi-academy trust (MAT).

Semi-structured interviews (Appendix 9) and researcher observations (Appendix 10) of LBT were used to explore the UoAs and propositions. The Special Educational Needs Coordinator (SENCO) and LBT facilitator were interviewed at each school to explore LBT implementation and delivery. In order to maintain a critical realist stance, freedom was permitted within the interviews by utilizing more open questions complimented by prompts to explore specific aspects of assimilation and implementation. Three structured observations, based upon criteria by Brett's (2013) and LeGoff et al.'s (2014) criteria, of an established LBT group were carried out in each school to inform the interviews. Observations took part during the latter half of the intervention cycle to ensure that the participants were familiar with the intervention. Observation dates were agreed with the facilitator. The researcher observed from a seat located near the table which had been placed by the facilitator in a location which was deemed by them to be least intrusive for the participants.

² UK primary school is for pupils aged 5-11 years.

Observation data was not analyzed separately but was used to inform the interviews in order to promote a rich and detailed description from the interviewee. Written informed consent was provided by school staff and parents (Appendices 3, 11-14). Children provided written informed assent (Appendices 4, 15). In this way, the case study synthesized data from multiple streams, incorporating a range of variables and triangulating common units of analysis.

The semi-structured interviews were directly informed by the EFI, requiring the interviewee to consider the process of assimilation and implementation of LBT as well as factors which facilitated and hindered this process. The interview schedule was piloted in a school in a neighbouring LA, ensuring that the questions were easily understood and coherent with the study's aims. Interviews were recorded, transcribed verbatim and subjected to hybrid inductive-deductive analysis (Fereday & Muir-Cochrane, 2006) using a codebook derived from the EFI (see Table 5). This process integrated data-driven and theory-driven codes and themes, allowing for deductive data analysis whilst also allowing themes to emerge from the data (Appendices 16-18).

Blind coding of a portion of the data by the second author showed broad consistency in coding between the researchers. Data not adequately represented in the EFI was coded inductively by both authors. This process facilitated discussion regarding the requirement to extend the analysis to include aspects of the Greenhalgh et al. (2005) model of implementation in order to more accurately reflect the data-set. Interview and observation data from each school formed individual case reports before a cross-case synthesis (Yin, 2014) was carried out.

Results

The results suggest that many EFI elements were also implementation factors at the case study schools, with additional factors arising inductively. This summary presents the themes following the EFI structure in Table 7, highlighting inductively generated themes (shaded in grey in Table 7) and discrepancies between the data and the EFI accordingly. No data was coded for EFI level 1 (community level factors) therefore the analysis starts with EFI level 2, provider characteristics.

2. Provider characteristics	A and B. Tension for change	
	C. and D. Facilitator factors	
3. Characteristics of the intervention	A. Compatibility	
	B. Adaptability	
4. Factors relevant to Prevention Delivery System	A. General organizational factors	Positive work climate which welcomes change
		Integration of new programming
		Shared vision
	B. Specific practices and processes	Shared decision-making and autonomy
		Coordination with other agencies
		Communication
		Formulation of tasks
	C. Specific staffing considerations	Leadership and advocacy
		Managerial, supervisory, administrative
Champion		
5. Factors relating to Prevention Support System	A. Training	
	B. Technical assistance	General post-training technical assistance
		Peer support
	C. Process of assimilation	Informal diffusion
		Planned dissemination
6. Participant responsiveness	N/A	

Table 7: Analysis structure following the EFI elements with inductively arising factors highlighted.

2. Provider characteristics.

2A and B. Tension for change.

Data relating to the “perceived needs” and “perceived benefits” components of the EFI were inextricably linked, possibly due to the school staffs’ perceptions of LBT efficacy causing perceived benefits to match perceived needs. Accordingly, this is

summarized as ‘tension for change’. Although staff identified that LBT met ‘the needs of the school’ [Facilitator, School A], this was less specific than the perceived needs for individual children. A broad range of needs were identified including social communication skills, motor skills, emotional and language needs. Although this needs-led approach gave flexibility in participant identification, its breadth may contribute to difficulties evaluating impact. Perceived benefits were a broad fit with perceived needs and enabled further identification of support strategies. For example, the facilitator at School A explained that ‘it’s a good platform to see skills that children need to practice and then it’s a good platform to practice them on.’

2C and 2D. Facilitator factors.

Referred to as “self-efficacy” and “skill proficiency” in the EFI, the current data suggests that these are highly linked in schools which implement LBT well. Both facilitators were confident, reflective and demonstrated high-quality delivery during observations. However, they did question their ability to deliver the intervention with fidelity. For example, the facilitator at School B explained: ‘I think it was a confidence thing ... like ‘am I doing this right?’’ They also needed to facilitate LBT through skillful mediation by trying ‘not to [intervene] because they’ve got to do it themselves haven’t they? Unless they get very, very frustrated and then you can step in maybe a little bit’ [Facilitator, School B].

3. Characteristics of the intervention.

3A. Compatibility.

LBT was reported to be compatible with the schools’ missions and ethos of enjoyable learning. The facilitator at School A commented that ‘it’s good fun for

them, I mean what intervention can you go and say to the children “it’s Lego group” [and they respond] “Yes! It’s Lego group!”?’

The facilitators liked the low complexity of LBT and its generalizability. For example, the facilitator in school A suggested that the ‘whole point...is to take it back to the classroom’. LBT was perceived to be socially valid because children could be prompted to use LBT skills outside the group. Conversely, creating awareness of social validity amongst all staff could be ‘a battle’ [SENCO, School B] with some staff perceiving LBT to be a reward rather than an intervention.

3B. Adaptability.

A key proposition suggested that, although designed for children with autism, children with a range of needs may participate in LBT. This proposition was supported; the target population varied in both schools, possibly due to the varied reported benefits of LBT. The schools also tailored LBT to fit the children’s differing interests and needs, for example the facilitator in School P explained that she ‘wouldn’t say that every Lego group [she had] done has worked exactly the same because some of them we’ve used the Lego points and other children haven’t wanted to use things like that. We just go off the majority of what they want so it’s adapted to what they like.’

4. Factors relevant to the prevention delivery system: organizational capacity.

4A. General organizational factors.

Positive work climate which welcomes change.

High levels of trust in the facilitator were described by the SENCOs. In School B, the SENCO adopted a more managerial role, stating 'I trust what she [facilitator] does', whilst the SENCO at School A advocated for the facilitators. This could reflect their different work contexts; a single school (School A) and a MAT (School B). Staff in both schools also identified that they were open to change; '...we're always up for trying something new.'

Integration of new programming with current provision.

Financial implications seemed more significant in School A where the SENCO reported that, following cuts, she required a strong rationale for an experienced teaching assistant (TA) to be out of class. In contrast, School B's SENCO emphasized ease of resourcing rather than a limited budget, possibly because the MAT benefitted from pooled resources.

Resources relating to time and space were also identified. A nurture room enabled School A to access space. However, timetabling was reported to interfere with classroom activities. The SENCO at School B described the learning mentors having LBT 'built into their timetable' although with classroom TAs 'it's also the class teacher being on board'. Preparation of resources and time-efficient working were highlighted by both schools.

Shared vision.

Although no reference was made to a shared vision of the implementation process, staff at both schools referred to developing a shared vision regarding outcomes for children. Reframing misconceptions with staff and parents about the purpose of LBT was essential; 'are they going just to play with Lego?' So it's explaining...how it's going to help them' [Facilitator, School B].

4B. Specific practices and processes.

Shared decision making and autonomy.

Differing from the EFI, which emphasized shared decision-making, the schools sought to balance shared decision-making with autonomy. Whilst both SENCOs described giving the facilitators autonomy, promoted by regular liaison, this perception was not always reciprocated. School A's SENCO commented that the facilitator had been 'given ownership of it [LBT] and she's managing that...she feeds back to me all the time', and the SENCO in School B described how the facilitator had 'taken control of it. Obviously she meets with me and we discuss the children and we talk to the teachers'. Conversely, the facilitator in School A reported 'I think [SENCO] will decide that', appearing at odds with the SENCO's perception. School A's SENCO also collaborates with parents to make decisions; 'I put it back to the parents and they said yes'.

Coordination with other agencies.

Few references were made to this theme, and then only by the SENCOs who described EPs enquiring about LBT and another support service recommending LBT in School B.

Communication.

Communication was linked to shared decision-making and autonomy at both schools. Regular ad-hoc as well as formal communication between the facilitator and SENCO was described in School A, whilst in School B this was more formalized, possibly due to the SENCO role spanning multiple schools. Both schools linked communication with evaluation. School A's SENCO described how 'any situation has to be communicated...we pupil progress every child with teachers'. Communication with teachers appeared important in facilitating the generalization of skills to the classroom, promoted further by communication with parents. Communication with pupils appeared to be lacking, with the facilitator in School A stating that not all children were aware of their targets.

Formulation of tasks.

Accountability, monitoring and evaluation were commonly cited by staff at both schools as essential in implementing LBT effectively. Two foci of evaluation emerged for the SENCOs: children's progress and evaluating implementation, whilst both facilitators commented on the day-to-day evaluation of the groups.

Both schools expressed a lack of confidence in their current evaluation systems. The SENCO in School A referred to a lack of criteria for withdrawing LBT but planned to improve this by involving TAs in intervention reviews. Similarly, the SENCO at School B identified a 'need to look at a better way of recording.'

Both schools described a fluid process of participant identification, a process of 'picking out' [Facilitator, School B] children observed to have social skill needs or needs highlighted on the Boxall Profile (Bennathan & Boxall, 1998). In both schools these decisions might also be informed by discussions with class teachers and parents and, in School B, a specialist teacher. It is possible that such a fluid process of identification makes the evaluation of outcomes more difficult. However, positive program outcomes were reported, such as improved Boxall scores, increased tolerance and improved peer interactions.

In School A, a shared responsibility developed through regular liaison between the SENCO, facilitator, class teachers and parents to decide on focus skills, to review progress and to promote skill generalization.

4C. Specific staffing considerations.

Leadership and advocacy.

Whilst the EFI highlighted the importance of leadership, the data suggests that SENCOs advocating for facilitators was also important. In School A, this bridged the senior leadership team (SLT), who make systemic decisions, with the facilitators, who make day-to-day decisions; 'unless you've got a voice in SLT in order to provide time for you, then it doesn't happen' [SENCO, School A]. This also linked with social validity; enabling the SENCO to attend LBT training alongside facilitators, free of charge, ensured that they could relay the importance of LBT to SLT.

Managerial, supervisory, administrative.

In contrast, School B's SENCO adopted a predominantly managerial role, line managing the learning mentors and ensuring all staff were 'on-board with the fact that you need to do [LBT] regularly'. The SENCO in School A occasionally referred to managerial aspects of her role including assessing 'which TA is best for which intervention [in response to] the needs of the school'.

Champion.

Both facilitators assumed a champion role, with the facilitator in School A summarizing 'I'm very enthusiastic about it, I think it's very good'. This was supported by the SENCO's description of the importance of the champion: '[facilitator] believes in it and she drives it for me'. Likewise, the SENCO in School B reported that the facilitator 'manages it really well...she's great at delivering it'.

5. Factors relating to the prevention support system.

5A. Training.

Both schools reported receiving high quality, experiential LBT training to promote skill-proficiency and self-efficacy. Both facilitators highlighted the importance of experiencing 'how hard it was to communicate without actually being able to point' [Facilitator, School B].

5B. Technical assistance.

General post-training technical assistance.

All interviewees highlighted post-training support in relation to skill-proficiency and the process of assimilating LBT. School A referred to reviewing LBT implementation with the school EP, balancing dosage with timetabling; 'in

consultation with the EP, she said once a week is OK, so we adopt once a week now' [SENCO, School A]. Linking to their management roles, both SENCOs reflected upon the need 'to do another round' (SENCO, School B) of training due to staff turnover. As mentioned earlier, a common theme of uncertainty in evaluation and monitoring arose. Potentially, this could form a further role for the EP when reviewing LBT implementation.

Role of peer support.

Not reflected within the EFI, both schools referred to peer support post-training. The SENCO in School A reported staff feeling 'nervy...because they need a bit more practice' and viewed her role as encouraging them to support each other. In School B, peer support developed between the learning mentors in the MAT being able to 'fall back' on each other.

5C. Process of assimilation.

This subtheme, including the processes of diffusion and dissemination, arose inductively within the data and was not represented explicitly within the EFI.

Informal diffusion.

Both SENCOs were introduced to LBT at an LA inclusion conference. The SENCO in School A described LBT to the facilitator and, together, they decided to 'give it a go' whilst the SENCO in School B 'thought this would be great for our kids and we then asked [EP] to come in and run some sessions for us'.

Planned dissemination.

All interviewees referenced the carefully planned process of assimilating LBT into their school provision. The SENCO at School A described the cyclical process; 'phase one - get [LBT] established, workable. Phase two - bring some more TAs on board.' Both schools referenced 'trialing' LBT with different groups of children in order to refine their own skills, and a phase of 'practising on each other' [SENCO, School A] which allowed staff to build skill-proficiency.

6. Participant responsiveness.

Both schools highlighted the need to consider children's responses to LBT when planning, delivering and evaluating the intervention. The facilitator in School B commented that 'most importantly the children enjoy it and they don't see it as work' but she did have to consider the dynamics of the group; 'on paper you think, "that group would work well together," but knowing the children and how they react and things like that, it's completely different'. However, some pupil disagreement was required in the day-to-day group experience for social problem-solving opportunities; 'they'll have a little argument...but eventually they decide between themselves what they're going to call the different colors' [Facilitator, School A].

Although participant responsiveness forms one aspect of implementation (Dane & Schneider, 1998), Durlak and DuPre (2008) specified that it was not a focus of their literature review, therefore was not represented in the EFI, possibly being more pertinent for group rather than universal interventions.

Discussion

This exploratory case study examined the assimilation and implementation of LBT for social skills development in two schools which reported positive outcomes. The results are discussed in response to the research questions, before discussing implications, limitations and directions for future research.

RQ1. How have two mainstream primary schools assimilated and implemented LBT?

Implementation in both schools was a carefully planned process, encompassing informal diffusion and carefully considered assimilation through training, piloting and evaluation (Greenhalgh et al., 2005; Rogers, 2003). The current study is unique in that it offers a retrospective exploration of effective assimilation and ongoing implementation, whereas most previous LBT studies consist of solely outcome evaluations. In response to the theory-driven propositions, common themes arose relating to the implementation of LBT. Children with social skill and other identified needs, including autism, participated in a structured cooperative activity requiring them to use distinct roles. This differs to the findings of previous research, given that all 15 studies reviewed by Lindsay et al. (2017) and in Cheng's (2016) doctoral thesis included participants with autism or features of autism. In each case study school, a trained member of staff facilitated LBT. However, only five of the 15 studies in Lindsay et al.'s (2017) review were facilitated by a member of staff. Although fidelity measures were not sought in the current study, both facilitators referred to adapting LBT. Similarly, Brett (2013) reported the omission or reduction of the freestyle component. Although no core aspects of LBT have been identified at the time of writing, adaptations are inevitable (Durlak & DuPre, 2008) and the quality

of implementation should be monitored, given that schools are increasingly encouraged to address implementation (Lyon, 2018).

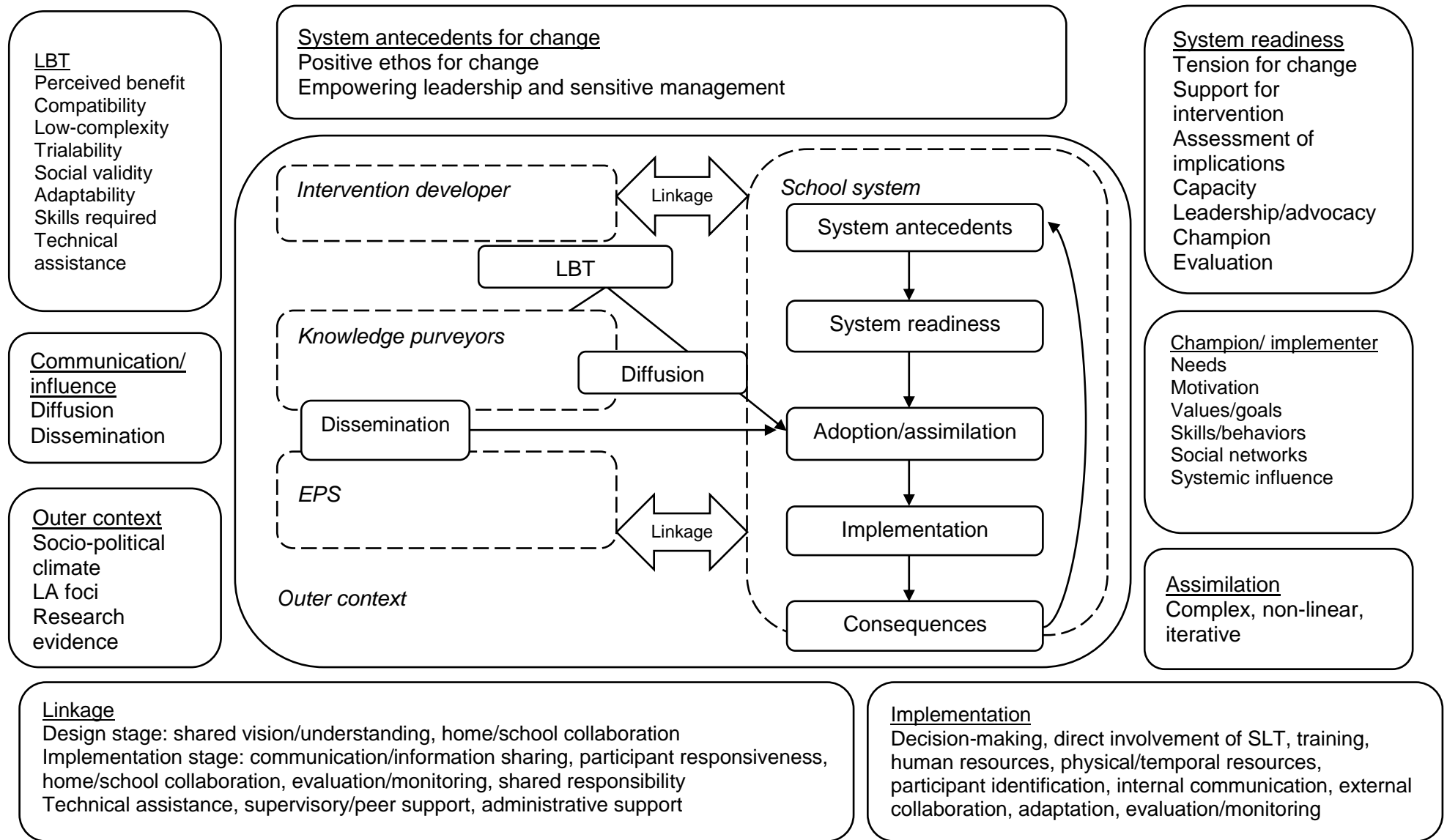
RQ2. What factors influenced the implementation of LBT in two mainstream primary schools?

The careful selection of schools which prioritized the delivery and implementation of LBT, with established infrastructures to support this, enabled identification of implementation factors with minimal interference from competing factors. Similarly to Greenberg et al. (2005) and Lendrum et al. (2013), a range of factors at different levels interacted to influence the implementation of LBT. These include characteristics of LBT, relationships and communication between staff, home-school collaboration and, similarly to Humphrey et al. (2009), the importance of LA support in training and technical assistance. The interviewees described staff and parents perceiving LBT to be effective, as found by LeGoff (2004) and Evans, Sanders and Knight (2014) respectively, facilitating the maintenance of LBT. There also appeared to be a careful balance between autonomy and shared decision-making, and between empowering leadership and sensitive management, contributing to a positive ethos for change and intervention maintenance. This has not been found in prior LBT literature, possibly because most studies have focused on quantitative outcome measures. The SENCO and champion roles appear to be key, supporting Rogers's (2003) notion of opinion leadership exerting frequent influence on others' opinions. The data predominantly mapped onto the EFI, but there were some inductively emergent themes which require consideration. These included facilitator factors, participant responsiveness, the process of assimilation and peer support post-training. In summary, the process of implementation must be

done with consideration (Lendrum & Humphrey, 2012). However, this has cost implications for schools which can be a challenge for sustaining group interventions (Bond, Cole, Fletcher, Noble & O'Connell, 2011).

The lack of absolute fit with the EFI could be attributable to the EFI's derivation from literature exploring *universal* level implementation, omitting factors pertinent to *group* interventions. Hence, the authors tentatively suggest that an amended Greenhalgh et al. (2005) model of implementation factors, Figure 3 below, may be suitable in guiding schools' LBT implementation:

Figure 3: A preliminary model representing factors affecting LBT implementation. Adapted from Greenhalgh et al. (2005: 201).



With amendments to the core to reflect application in an educational context (see Appendix 19 for original model), this model accounts for all factors within the EFI as well as the missing aspects of participant responsiveness, facilitator factors and peer support. It also makes explicit the nature of program implementation as a complex, multifactorial and iterative process, congruent with the findings of the current study. However, it is important to bear in mind that this model was developed following a literature review of health intervention implementation and therefore may not capture factors relevant to an educational context. Furthermore, complexities in assessing social skills will impact upon ease of program evaluation (Wigelsworth et al., 2010), evident in the schools not yet having a specific tool for measuring social skills progress.

The findings indicate that implementation models do not inform the adoption of LBT in mainstream primary education. This is surprising given the SP/EP role as a scientist-practitioner (BPS, 2015; NASP, 2010), in systems-level work and their understanding of the impact of relationships within organizations (Farrell et al., 2006). Although validated procedures for developing and evaluating social skills interventions exist (Lane, Menzies, Barton-Arwood, Doukas & Munton, 2005), these are procedurally focused and not explicitly guided by models of implementation. Therefore, the proposed tentative model for LBT factors is suggested as a way of guiding SPs/EPs to support schools in implementing LBT over time. The current model implies key roles for SPs/EPs in this process, including developing optimal training delivery models and post-training technical assistance in areas such as participant selection and longitudinal evaluation with schools (Evans & Bond, 2019)

which should include evaluating the impact of adaptations (Lendrum & Humphrey, 2012).

There are two clear foci for future research. Firstly, given that the Greenhalgh et al. (2005) model is not education-specific, further exploration of the adapted model for LBT in educational settings would be pertinent. Secondly, research is needed to further explore the relationship between skill proficiency and self-efficacy, particularly given the importance of facilitator self-efficacy in positive outcomes (Higgins & Gulliford, 2014) and, in a community setting, the competence of the staff was believed by parents to be important in LBT success (MacCormack, Matheson & Hutchinson, 2015). The case study schools represented the 'ideal situation'. Therefore, these two aspects were inextricably linked which may not be the case in less ideal circumstances.

Although multiple-case studies utilizing a literal replication design are considered robust (Herriott & Firestone, 1983), only two cases were explored. Six replications using a two-tail design might offer more certainty (Yin, 2014). A lack of member checking and the lack of objective outcome measures relating to the effectiveness of LBT are further limitations of the research. Finally, despite positive participant responsiveness being described, pupil voice was lacking in the data. Brett (2013) explicitly sought pupil voice, suggesting modifications to promote motivation based upon their views. Given that children have the right for their opinions to matter in decisions which impact them (Lansdown, 2011), it could be argued that pupil participation in the proposed model, through amending it to reflect their opinions, is a first step.

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Paper 3. The Dissemination of Evidence to Professional Practice

Word count: 5,353 excluding tables

Introduction

This paper examines the concepts of evidence-based practice (EBP), practice-based evidence (PBE) and research impact, and how these are relevant to the field of applied educational psychology. Following this is a discussion of the concept of dissemination. Finally, and with consideration to these concepts, a dissemination strategy for the Systematic Literature Review (SLR) (Paper 1) and the empirical findings of the case study (Paper 2) is proposed.

Concepts of evidence-based practice and practice-based evidence

Definitions of evidence-based practice (EBP) and practice-based evidence (PBE)

As scientist practitioners, Educational Psychologists (EPs) must 'be able to engage in evidence-based and evidence-informed practice, evaluate practice systematically and participate in audit procedures' (Health and Care Professionals Council [HCPC], 2015: 12). EBP is defined as 'a movement in psychology and education to identify, disseminate and promote the adoption of practices with demonstrated research support' (Kratchowill, 2007: 829). Before the implications and dissemination of the research findings are summarised, a discussion regarding the problematic application of EBP in educational psychology (Miller & Frederickson, 2006) is presented.

EBP was developed to ensure that healthcare patients received safe and effective treatment, based upon scientific research, with a key feature being randomised

control trials (RCTs) (Bennett, 2012). RCTs have become the gold standard in EBP across many disciplines because they indicate whether an intervention is more likely to be helpful than not intervening in the majority of cases; without this the intervention cannot be recommended, particularly in the United States of America (USA) where EBP is a legal requirement (Frederickson, 2002).

Despite widespread use, there are challenges when drawing on an established research hierarchy which prioritises research evidence from RCTs. Whilst RCTs allow a causal inference to be found, if one exists, they do not allow exploration of processes or mechanisms of change. Furthermore, there has been criticism that reliance on RCTs has neglected to take account of the reliability and applicability of experimental findings, derived from highly controlled environments, to diverse and dynamic real-world settings (Cowen, Virk, Mascarenhas-Keyes & Cartwright, 2017). Indeed, the American Psychological Association (APA) (2006) does also acknowledge that other research methods besides RCTs bring their own merits for EBP. For example, whilst RCTs allow a causal inference to be obtained, process-outcome studies enable examination of the mechanisms of change and case studies illuminate causal relationships in individual contexts. Such challenges of relying upon RCTs has led to a growth in a complementary field of practice-based evidence (PBE) using alternative smaller scale research methods whilst still contributing to knowledge and the evidence-base.

PBE aims to develop an inclusive, practitioner-led research evidence-base from the safe trialling of interventions by practitioners (Barkham & Mellor-Clark, 2010). As a practitioner-led and bottom-up model, school practitioners such as teachers and

teaching assistants, as well as intervention developers and wider professionals, could have valuable contributions to the development of PBE. Barkham and Mellor-Clarke (2010) highlight that practitioner evidence could help to extend experimental designs to more naturalistic settings, acknowledge the complexities within the design and evaluation of psychological interventions, and to promote the role of measurement and evaluation of psychological interventions. Instead of a hierarchy, Barkham and Mellor-Clarke (2010) propose that evidence runs along a continuum. Given that efficacy trials can illuminate the extent to which an intervention causes change under controlled conditions, forming a baseline to which the results of field experiments in naturalistic settings may be compared. Consequently, field experiments must be rigorous, with high quality data collection and analysis. Placing such importance upon collection of high quality field data indicates the necessity of developing the field of PBE as complementary to EBP.

Congruent with the Sackett, Straus, Scott-Richardson, Rosenberg and Haynes's (2000) model of EBP in the medical field and Spring's (2007) model representing evidence-based clinical psychology practice, the APA (2006) also recognises that EBP in psychology (EBPP) consists of integrating research evidence with clinical expertise to take into account patient characteristics as well as culture and client preferences. As Haynes, Devereux and Guyatt (2008) highlight, it is people who make decisions, not evidence, and the focus is upon *integrating* professional expertise with research evidence to ensure that the research is applicable to the context in question. This point is pertinent for EPs due to the nature of their work in dynamic and variable school contexts which do not have the strict controls

necessary to produce programme outcomes demonstrated in RCTs, particularly in the field of social skills interventions.

Changing school practice

In operationalising EBP in education, the emphasis has focused on which evidence-based interventions to select for assimilation, often through the use of SLRs. Whilst SLRs provide a synthesis of the available research for interventions, which can aid practitioners in making a judgement regarding whether the intervention is likely to lead to effective outcomes and can be helpful for educational staff in choosing which intervention to implement, there remain inherent limitations in their use. Cowen et al. (2017) argue that narrowing a large selection of potentially relevant studies to a small number of so-called *high quality* studies may limit the identification of the conditions in which the intervention is likely to work (or not work). Instead, a large range of so-called *lower quality* studies may be more informative. Furthermore, Harlen and Deakin Crick (2004) highlight that there are key points in the SLR process which are crucial to the success of the review but which may not be consistently met in all SLRs. These are; the identification of an appropriate review question which is meaningful across the practitioner, policy-maker and research fields, the inclusion of studies exploring the complex and interpretative concerns rather than a focus upon only RCTs and empirical studies, and a considered synthesis and interpretation of the data in order to guide both policy and practice.

Efficacy trials can demonstrate that an intervention is likely to work in highly controlled environments. However, it cannot be assumed that the intervention can be directly transferred into the unique and dynamic school context. Therefore, it is also

important to understand the mechanism underlying the intervention (Hughes, 2000). Using this information, EPs can support schools in selecting the most appropriate intervention in terms of applicability and adaptability to their unique context. Although EBP does consider the context, there has been less consideration of systematic management of change in school practice, although this systemic role is arguably a key aspect of the role of the EP (Farrell et al., 2006). Only in recent decades has there been a focus upon the development of frameworks to inform and help manage the implementation of interventions in schools, for example Durlak and DuPre's (2008) Ecological Framework for Implementation (EFI). These frameworks have the potential to be a useful addition to the toolkit of an EP. However, only very recently has the EP role in implementation been discussed in the literature. One example is Cline's (2012) psychologically enriched evaluation for supporting the development of an evidence-base for EP practice. This model proposes that rather than focusing only upon 'what works', which is risky due to potentially contradictory evidence, EPs should also focus upon intervention *processes* as well as the more traditional means of measuring outcomes. Such an approach welcomes practitioner judgement through reflective practice regarding intervention modification and adaptation to specific contexts, linking to the use of practice-based evidence as a beneficial process in both the application of research findings and in evaluating intervention impact.

The evidence-base specific to group level social skills interventions

The research aiming to establish evidence-bases for specific interventions have predominantly emphasised RCTs and SLRs to demonstrate 'what works', following a more traditional model of intervention development and research hierarchy. For

example, a recent scoping review exploring specifically the role of Lego[®]-Based Therapy (LBT) in promoting social skills and inclusion for children with autism summarised that whilst the early LBT literature appears to indicate that LBT may be promising for promoting social skills for children with autism, more rigorous studies are required to explore the impact of LBT, focusing upon both programme outcomes and implementation (Lindsay, Hounsell & Cassiani, 2017). Only five of the 15 studies included within the review were led by school staff with the majority being led by clinicians, highlighting a further barrier to EBP; a lack of engagement with school staff and consideration of wider contextual factors when undertaking school-based research.

Research into social skills interventions is vast and complicated by difficulties in conceptualising and reaching agreed definitions (Gresham, 2018; Wigelsworth, Humphrey, Kalamouka & Lendrum, 2010). Much of the research has focused upon promoting social skill development in specific populations. There has been much research interest into identifying evidence-based interventions for children with Autism (see Bond et al., 2016) and children with Attention Deficit Hyperactivity Disorder (ADHD) (see de Boo & Prins, 2007). However, the researcher's own experience in education indicates that a needs-led rather than diagnosis-led approach is often used for providing intervention in schools. A challenge to EPs applying EBP, therefore, lies in the necessity to assess whether the evidence relating to intervention efficacy for children with a particular diagnosis will be applicable on a case-by-case and school-by-school basis, when children without formal diagnoses could require additional intervention but for whom evidence for efficacy is often lacking.

Gresham (2015) provides a recent and comprehensive summary of the literature pertaining to evidence-based interventions for students at risk of emotional and behavioural disorders (EBD) in the USA, highlighting that 65% of students at risk of EBD will improve following social skills intervention. This indicates the importance of intervention in a child's early education, particularly given the long term impact of social skills difficulties on later life outcomes (Chernyshenko, Kankaraš & Dragow, 2018). Gresham (2015) further argues that methodological issues arise in group level social skills intervention research. He highlights that important next steps in the social skills intervention research must focus upon forming evidence-based means of assessing performance deficits (whereby the child has the skill but does not use it) or acquisition deficits (whereby the child never acquired said skill). Therefore, EPs must exercise caution and use professional judgement when applying the results from such studies to social skills interventions in schools. One way in which EPs can do this is by informing their work with schools, when assimilating an intervention, upon the evidence-base regarding implementation science, or the exploration of what works, how and why (Kelly, 2012).

There is growing acceptance that implementation quality impacts upon outcomes. For example, Durlak and DuPre's (2008) EFi attempts to provide a structure for implementing universal interventions in schools. However, such a positivist approach may not be helpful for EPs who are required to consider the more unique factors in each school which are likely to vary. An alternative approach posited by Pawson and Tilley (1997) takes a more contextual and idiographic approach at the site level. Implementation, in general, remains a significant gap for EPs, with educational

researchers rarely measuring fidelity or implementation (Killerby & Dunsmuir, 2018) and very few studies seeking to measure or assess the impact of implementation upon programme outcomes (Lendrum & Humphrey, 2012). This section has highlighted the complex range of intervention-specific and process factors which EPs need to consider when using evidence-based interventions with schools.

The evidence on effective dissemination of research and notions of research impact

Dissemination

It has been suggested that research-practice and research-policy gaps are, in part, due to ineffective dissemination (Brownson, Eyer, Harris, Moore & Tabak, 2018). Therefore, this section summarises approaches to effective dissemination which will be used to inform the dissemination strategy.

Promoting the transfer of research into practice and dissemination of research findings are essential in order for the broader profession to work in evidence-based and evidence-informed ways. Despite this, an agreed definition of dissemination is lacking, highlighting the complex nature of attempting to create organisational or systemic change, with varying professional, sociocultural and disciplinary traditions working in different contexts (Greenhalgh et al., 2005). Mowatt, Thomson, Grimshaw and Grant (1998: 669) developed a definition of dissemination as a result of a systematic literature review of diffusion and implementation of health technologies: 'dissemination is actively spreading a message to defined target groups'. This planned process of 'making it happen' (Greenhalgh et al., 2005: 82) is in contrast to Rogers's (2003) notion of diffusion as a more passive process, or 'letting it happen'

(Greenhalgh et al., 2005: 82). The aspect of dissemination in which most definitions agree is that it is an active process, requiring a carefully planned and systematic approach in order to maximise the impact of the research in terms of translation into practice. In contrast, passive dissemination strategies are less likely to be effective as stakeholder uptake is rarely spontaneous (Brownson et al., 2018).

Despite the importance of optimising the translation of research into policy and practice, this has been somewhat troublesome in the education field (Slavin, 2002). Although many funding agencies require a plan for dissemination for both academic and non-academic audiences, there is a scarcity of clear guidance advising how to achieve effective dissemination (Brownson et al., 2018). One attempt was made by Wilson, Petticrew, Calnan and Nazareth (2010) who carried out a scoping review to identify conceptual and organising frameworks in dissemination, finding a high level of theoretical convergence between the frameworks. Out of twenty studies meeting their inclusion criteria, three dominant underlying theoretical frameworks emerged. These were the diffusion of innovations (Rogers, 2003), the persuasive communication matrix (McGuire, 1969) and social marketing (Kotler & Zaltman, 1971). Brownson et al. (2018) highlight a further model which remains relevant today with significant parallels to McGuire's persuasive communication matrix, namely the mathematical theory of communication (Shannon & Weaver, 1963). This theory posits that dissemination is a process with multiple inputs and feedback loops, taking account of the source, the key message, the target audience and channels of dissemination. Wilson et al. (2010) argue that, whichever dissemination framework is employed, researchers should avoid a linear researcher-messenger model, instead

emphasising the need for the researcher to interact with the end users of the research findings.

Table 8 below summarises a range of dissemination purposes, approaches and both unidirectional and multidirectional activities elicited by the National Children's Bureau (NCB) (2017) following a systematic review of literature and consultation. The table proposes that dissemination occurs in tiers. The most basic purpose of dissemination, Tier 1, is awareness raising. This involves the least research-user engagement and tends to be unidirectional, with the researcher aiming to transmit the research findings to an appropriate audience. Tier 2, the next level of engagement, aims to increase the research-user's understanding of the findings, transferring information through more interactive methods. Finally, Tier 3 involves the highest levels of engagement between researchers and research-users. This is possible through transformative activities, such as action research, which hope to involve educational staff as partners in the research.

Purpose of dissemination	Dissemination approach	Brief description	Dissemination activities
Awareness raising	Transmission	Involves telling teachers about an initiative/best practice through policy documents or professional development resources.	Reports/publications Training (one-way) Conferences (one-way)
For increasing understanding/engagement	Transfer	Involves the transfer of knowledge through cascade approaches. Those trained then train others where good practice cascades down from the top. As the word spreads, the practice is adopted by each level until it ripples across the final level, the whole community of teachers.	Coaching/mentoring Training (interactive) Conferences (interactive) Networking (active participants)
For action/ to generate change	Transformative	Involves engagement of teachers in the process of transforming their practices, often through action research. Emphasises that for real change, individuals need to take control of what they are being asked to do. They need to make sense of it through reflection and sharing with others until new ideas become internalised.	Action research Transformative model – combination of methods used in a strategic manner

Table 8: Tiered model of dissemination (National Children’s Bureau [NCB], 2017).

Notions of research impact

As with dissemination, the notion of research impact is receiving increasing interest in the literature, but many definitions of research impact exist which presents a challenge given that researchers are increasingly expected to measure research impact for accountability. The range of definitions is discussed by Greenhalgh, Raftery, Hanney and Glover (2016) and includes the effect of research beyond academia including in the economic, societal, cultural, policy or environmental domains locally, nationally or internationally (Research Excellence Framework, 2014), and a recorded or auditable influence from research to another actor or organisation (London School of Economics, 2011). Meanwhile, the UK Research and Innovation (2019) define research impact as demonstrable contribution of research to society and the economy in a range of ways including jobs and public services,

products and innovation as well as policy change, health and quality of life improvements. Clearly, measuring research impact is complex and vast.

Slavin (2002) and Oliver and Cairney (2019) argue that creating research impact at the policy level is challenging and requires a funding and a long-term commitment on the part of the researcher. Furthermore, Greenhalgh et al. (2016) identify that the labour intensity of sophisticated approaches to measuring research impact are often costly and therefore are not always feasible in terms of the required economic and time commitments, and the more indirect researcher-impact links are often overlooked or more difficult to measure, despite being of importance to the wider assessment of impact. Because of these challenges, EPs may be best situated to assess research impact at the local level. Despite the HCPC (2015) expectation upon EPs to work in evidence-based and evidence-informed ways, it could be argued that this is 'high on importance but low on urgency' (Frederickson, 2002: 109), requiring a significant shift towards evaluating interventions and pupil outcomes in order to work in evidence informed ways (Dunsmuir, Brown, Iyadurai & Monsen, 2009).

Curran, Grimshaw, Hayden and Campbell (2011) posit that for research to impact upon practice in a meaningful way, professionals must adopt their findings into their practice and further disseminate these findings, measuring the impact of this, in order to optimise knowledge transfer across the profession. The following section presents a dissemination strategy which takes into account the tensions between EBP and PBE, principles of effective dissemination and assessing research impact.

Summary of the policy practice/research development implications of the research at: the research site, organisational level, professional level.

Summary of the research

Schools have an obligation to meet the social, emotional and mental health (SEMH) needs of all children as outlined in the Code of Practice (CoP) for Special Educational Needs and Disability (SEN&D) (DfE and DoH, 2015). The findings of Paper 1 demonstrates that, currently, there is a lack of strong evidence for social skills interventions and a lack of models or frameworks to guide the installation and maintenance of these interventions in schools. The findings of Paper 2, the case study, explored this concept in more depth using an intervention which has been shown in the literature to have promising early evidence for supporting the development of children's social skills. This section will consider the implications of the research at the school, organisational and professional levels.

Implications of the research at the research (school) site level

Schools are increasingly expected to take a greater role in implementation; the Education Endowment Foundation published a guide to support schools in using implementation science evidence to improve intervention efficacy (Sharples, Albers & Fraser, 2018). The findings of Paper 2 indicate that both case study schools considered the process of implementation to be important, possibly due to the emphasis on implementation in the Local Authority (LA). However, the SLR indicated that few social skills interventions explicitly discuss the impact of implementation factors. Therefore, a first implication for the research site schools is to continue to work alongside the Educational Psychology Service (EPS) to continue refining the model proposed in Paper 2 to guide the implementation of LBT.

A further implication for both schools arises from the nature of their fluid system of participant selection and evaluation of programme outcomes. No robust, valid or reliable assessment tool was used for either process. For example, School A reported uncertainty around the appropriate time to withdraw the intervention. Such difficulties in the assessment of social and emotional skills have been identified previously in the research (Wigelsworth et al., 2010), possibly due to difficulties conceptualising (and therefore measuring with validity) social skills (Gresham, 2018). The SLR also identified a lack of coherency between assessments used, if any, for participant identification and to assess programme outcomes. As such, both schools must liaise with the EPS and, in partnership, work to develop a more robust means of evaluating LBT, both in terms of programme outcomes and the implementation process. A co-production approach to developing interventions could be beneficial over a theory or evidence-only based approach, for example, because it takes into account what people do, rather than what they say they do, and allows solutions to be customised to individual contexts. However, there has been very little attention paid to the outcomes of co-creation research so far (O’Cathain et al., 2019).

Furthermore, the schools should aim to work alongside programme developers (Dusenbury, Brannigan, Falco & Hansen, 2003) and consider requesting technical assistance in developing their initial screening and programme outcome assessments to develop greater coherency between these. This is particularly pertinent given the statutory duty on schools to ensure that outcomes relating to the benefit of staff training are detailed on individual children’s educational support plans (DfE & DoH, 2015).

Implications of the research at the organisational level

The implications of the research for the researcher's organisation, the Educational Psychology Service (EPS), sit alongside their statutory duty outlined in the CoP which requires LAs to train the wider workforce to support children with SEN&D. This includes specialist level training, specific to different types of SEN, and ensuring that assessment and evaluation of provision for children with SEN occurs, including for children with SEMH difficulties. Given that high quality training, technical assistance and difficulties with evaluation and monitoring were identified as implementation factors in Paper 2, the EPS must actively ensure that their training offer takes account of the best available research, which can then be disseminated to schools, and promote the uptake of post-training technical assistance.

The EPS must work in partnership with schools in the borough to develop a more formal, valid and reliable means of assessment to be used for participant selection and evaluating programme outcomes. Developing and using the same assessments on an authority-wide basis would ensure greater consistency in the borough. It could also contribute to more effective implementation because these assessments would then be introduced to new schools during initial training. Furthermore, this liaison will promote an optimal balance of prescription and adaptability to each school context (Dusenbury et al., 2003). Given the nature of this implication being authority-wide, it will also be necessary to evaluate the impact of said changes in order to ensure that they are effective. Collecting meaningful follow-up evaluation data, generated through best-practice work with schools and university-service collaboration, has been highlighted as an opportunity for educational psychology services to contribute

to EBP (Frederickson, 2002). One potential model for further research is community partnered participatory research (CPPR) (Jones & Wells, 2007) which Brunner, Sankare and Kahn (2015) argue is supportive of increased research-to-practice translation of knowledge through an equitable community and researcher relationship throughout the process.

Indeed, the researcher has noticed that carrying out the current research has impacted upon their day-to-day practice as a Trainee Educational Psychologist (TEP). Because implementation is a salient topic, the TEP now routinely enquires into the fidelity, dosage, implementation process, adaptations to interventions and training currency in their link schools. This suggests that active engagement in the research process has enabled the researcher to fully implement the salient principles into their practice, leading to the highest level of impact upon their practice by causing observable results (Kirkpatrick, 1994).

Implications of the research at the professional level

The research has multiple implications for the EP profession. Given that EPs are required to work in evidence-informed ways (HCPC, 2015), and given that the literature indicates that quality of implementation impacts upon programme outcomes (Durlak & DuPre, 2008), the research indicates that EPs must take a greater role in supporting schools by informing their work upon models of implementation.

A major difficulty for the EP profession arising from this research is the issue of conceptualisation and definition of social skills and, as a result, core components of

interventions. The results of the SLR (Paper 1) indicate that there is no clear conceptualisation of the social skills being targeted, whilst the results of Paper 2 indicate that the staff made adaptations to LBT, including omitting the freestyle component, the impact of such changes were difficult to evaluate. This is possibly because no core components of LBT were suggested by LeGoff, Gomez de la Cuesta, Krauss and Baron-Cohen (2014), and a critical component analysis is yet to be completed. Therefore, there is no clear guidance for schools or other professionals, including EPs delivering LBT training to schools, regarding which components must be present in order to achieve positive programme outcomes. Humphrey et al. (2016) developed a guide to Implementation and Process Evaluation (IPE) for the Education Endowment Foundation, and proposed that a 'critical component analysis' is a crucial factor, allowing informed adaptations to occur and reducing costs associated with implementation by identifying which features and resources are optional.

Given that many different professionals in addition to EPs promote the implementation of interventions such as LBT in schools, including speech and language therapists (SALT) and occupational therapists (OTs), there may also be implications of the research for a broader range of professionals than EPs alone. These professionals, working in the United Kingdom, are also bound by HCPC (2015) regulations to ensure that work is only delegated to appropriately skilled members of staff and to ensure that they make evidence-informed decisions. As such, the dissemination strategy must plan to reach a broad audience.

A specific strategy for promoting and evaluating the dissemination and impact of the research

EPs work at various levels, namely the individual, group or family and organisational levels (Scottish Executive Education Department [SEED], 2002) as well as working nationally and internationally. The dissemination strategy outlined in Table 9 below incorporates the three tiers regarding the purposes and approaches to dissemination as identified by the NCB (2016) with the target audience and channels of dissemination identified by Wilson et al. (2010), considering the impact at the different levels in which EPs work identified by SEED (2002). In addition, the nature of the activities will be discussed, given that activities could consist of unidirectional research-to-practice knowledge transfer, or multidirectional activities involving feedback loops between the researcher and the research-user (Bauer & Fischer, 2007; Wilson et al., 2010).

Purpose	Approach	Activities/channels of dissemination	Target audience	Level
Tier 1. Awareness raising	Transmission	ISPA Conference (one-way)	EPs	International
		Publications peer review journal (one-way)	EPs/ school based professionals	International
		Publication in education magazine	Teachers/TAs and wider professionals	National
		Stakeholders day	EPs	Regional
		Leaflets	Families	Local/site
Tier 2. Increasing understanding/ engagement	Transfer	Centralised training (interactive)	School staff/facilitators	LA
		Feedback staff meetings for research schools	School staff	School/site
		Collaboration to develop LBT training	LBT trainers	National
		SENCO network meeting	SENCOs	LA
Tier 3. For action/ to generate change	Transformative	Planned evaluation of two-phase training model for LBT	EPs School staff	LA with further dissemination
		Explicit discussions with schools regarding the direct transformation of school and professional practice resulting from Tier 2 dissemination activities	EPs School staff	LA
		Dissemination of results to EPS team	EPs	LA
		Production of a guide to LBT implementation	EPs	LA, national

Table 9: Dissemination strategy

Tier 1 dissemination

The findings of the pilot study were presented at the International School Psychology Association (ISPA) conference in 2017 (Appendix 20) as part of a symposium of research into provision for children with Autism. Although this dissemination activity

was unidirectional knowledge transfer from the researcher to educational and school psychologists, the presentation promoted the importance of implementation research focusing upon social skills interventions across an international domain. Similarly, but focusing upon the regional domain, a presentation will be given at the University Stakeholders day in July 2019.

Focusing more upon the wider relevant audiences, awareness-raising dissemination activities for parents and children will also be carried out. Given that these audiences require less technical or theoretical advice, the key message must be appropriate. Summary leaflets will be produced which outline the key findings of the research and how it might impact upon the child's education. For example, including a text box summarising '...so what does this mean for me?' will emphasise the importance of communication and liaison with school staff as well as ensuring opportunities for the child to generalise the social skills to other contexts. Similarly, a leaflet for school staff will be produced which focuses upon the contextual factors which must be considered prior to, during and after implementing an intervention, with slightly more specialist information than the leaflet for families. The researcher is also planning to write a summary article to be published in a teaching magazine in order to raise awareness of the findings to a national audience of school staff and wider educational professionals.

Tier 2 dissemination

To increase understanding and engagement through knowledge transfer, a range of Tier 2 dissemination activities will be carried out. The researcher has made amendments to the EPS LBT training for school staff (Appendix 21). Although the two-phase model of training was already in place, which allowed an opportunity in the second session to explicitly reflect upon their experiences of implementation thus far, the amendments have made clearer the importance of implementation.

Interactive activities are provided which provide a model for the school staff to reflect in a structured way on their experience when implementing LBT, including a range of implementation factors. The researcher hopes that, through this interactive opportunity and by facilitating school staff to share their own experiences, that further examples of implementation factors might arise which could either confirm or enhance the preliminary model for LBT implementation factors proposed in Paper 2.

Similarly, feedback meetings and interactive presentations are planned for the Autumn term 2019 for the research site schools and at a LA-wide SENCO network meeting. Besides the SENCO and facilitators in the schools, the notion of implementation is likely to be novel to many of the staff. Therefore, the researcher must ensure that an overview of implementation is given. Once the findings are presented, the researcher will then facilitate an interactive activity which hopes to provide the staff in each school an opportunity to collaborate and develop an action plan for further refining their implementation and maintenance of LBT in the school, as well as providing an opportunity to reflect upon where else they might be able to apply this learning in their practice, for example to other interventions. In this way,

Tier 2 dissemination activities should lead into Tier 3 dissemination which aims to generate change.

Tier 3 dissemination

Tier 3 activities to generate change will be initiated firstly as a direct result from the above activities. Change will continue to be generated through this collaboration to develop LBT training. This has the potential to transform practice, particularly if the school-based feedback sessions are highly interactive and enable staff to plan next steps in key areas relating to their implementation practice. Further change will be initiated through the researcher regularly providing updates to their EP colleagues regarding the implementation model and best practice. These colleagues will then be empowered to have discussions in their link schools regarding the effectiveness of the implementation, more broadly than focusing upon only LBT. The development of a complementary guide to the model in Figure 3 is a possibility within the LA; this would be used by EPs to inform their work throughout the process of adoption and assimilation of LBT in schools. A final Tier 3 dissemination focus lies in promoting further research, involving the active participation of schools, in enhancing the model proposed in Paper 2 to guide the implementation of LBT implementation in schools. This may include ongoing and long-term collaboration with the university.

The research is already having direct implications and creating change within the researcher's own EPS. Following the dissemination of preliminary results with the researcher's practice placement supervisor, it has been agreed in a team meeting that all LBT training occurring in schools should now follow the two-phase format. Whilst the first session provides a theoretical overview of LBT, gives experiential

learning opportunities and provides staff with a 'how to' guide to set LBT up, the second session focuses upon implementation. Carried out six to 12 weeks after the first session, with the intention that between the sessions the attendees set up and implement one LBT cycle, the second session allows an opportunity for the EP to model reflecting upon both the implementation process as well as children's outcomes, paying particular attention to facilitating and hindering factors, as well as the impact of adaptations. A key aspect of implementation is technical or post-training assistance (Durlak & DuPre, 2008; Greenhalgh et al., 2005), therefore by promoting this model of working, school staff will become accustomed to seeking post-training support from external professionals. A potential barrier to this model of working lies in the tension between reduced schools budgets for SEN&D and the traded-service nature of many educational psychology services. Schools commissioning post-training technical support *in addition* to the initial training will mean that the whole training package is more costly which could deter schools from commissioning this model of working. The financial implication of sustaining interventions was also found by Bond, Cole, Fletcher, Noble and O'Connell (2011).

Summary

Social skill competency is a key factor in the later life outcomes of the children and young people in education, therefore children with social skill difficulties must have access to safe and effective interventions in order to support their development in this area. To date, social skill research is dominated by more traditional concepts of EBP. The current research challenges this model by exploring the more idiographic nature of implementation and the factors which contribute to the efficacy of small group social skills interventions. The research provides a novel contribution based

upon the role of the EP in promoting, assimilating and maintaining EBP and contributing to PBE in order to narrow the research-practice gap.

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Appendices

Appendix 1: Author guidelines – European Journal of Special Needs Education

Aims and scope

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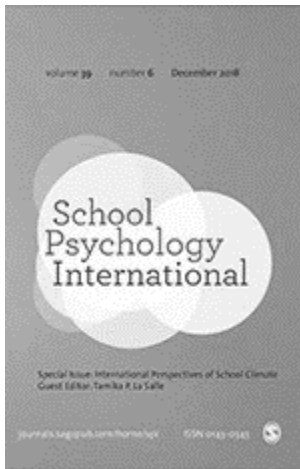
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1. What do we publish?

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Appendix 3: Consent form, parent/carer

How is LBT Implemented in a Mainstream Primary Context?

If you are happy for your son/daughter to participate please complete and sign the consent form below.

Please initial box

1.	I confirm that I have read the attached information sheet on the above project and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.	
2.	I understand that my child's participation in the study is voluntary and that they are free to withdraw at any time without giving a reason and without detriment to their attendance at Therapeutic Lego	
3.	I understand that data will remain confidential	
4.	I understand that the researcher will take notes from an observation the Therapeutic Lego which my child attends	
5.	I agree that any data collected may be published in anonymous form in academic books or journals, presented at conferences or used for further research.	
6.	I agree for my child to take part in the above project	

Name (CAPS)


Date

Signature

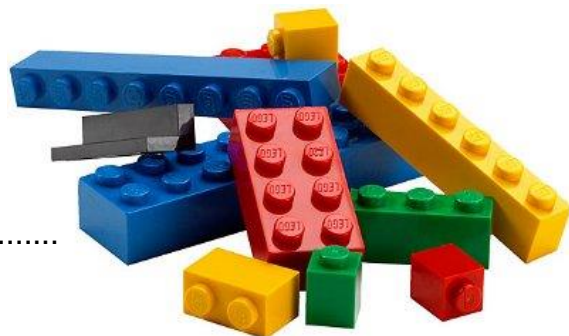
Name of child (CAPS)

Appendix 4: Assent form, young person

How is LBT Implemented in a Mainstream Primary Context?

	 (Young Person to tick)
Has an adult talked about the project with you?	
Do you understand that it is your choice to take part in the study?	
Do you understand that your name will not be used?	
Are you happy for Vanessa Evans to come and watch some Lego Club?	

Name:



Date:.....

Appendix 5: PRISMA diagram

PRISMA framework

Search terms:

primary school OR elementary school

AND

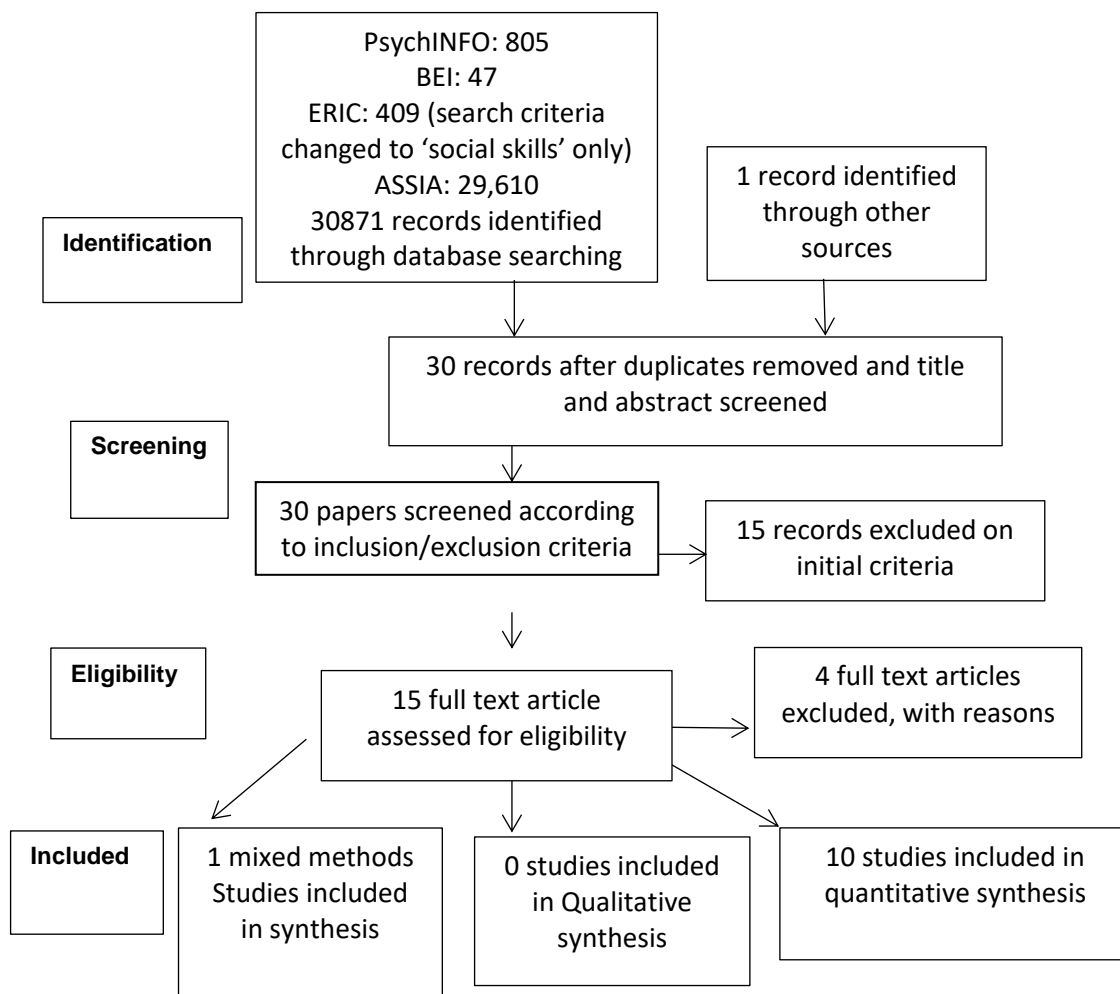
Intervention OR program*

AND

Social group work OR social skills OR social learning OR social skills training

AND

Group OR tier 2 OR tier ii



Reference

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G. (2009). Preferred reporting items for systematic reviews and meta-analyses. *PLoS Medicine*, 6(7), 1-6.

Appendix 6: Table of excluded studies

Excluded studies with reasons

Author/date	Not primary data	Low rating WoE A	Zero rating on WoE C (not effective)	Targets specific population	<3 target children in group	Multi-component	Opinion paper	No involvement of staff	After school	No social skills foci
Aurelio (2003)			X							
Bernat, August, Hektner and Bloomquist (2007)						X				
Brigman, Webb and Campbell (2007)										X
Collins, Gresham and Dart (2016)					X					
Cottone, Chen and Brock (2013)						X			X	
Cuccaro and Geitner (2007)		X								
Dill (2000)			X							
Hood (2011)				X						
Humphrey, Lendrum, Wigelsworth and Kalambouka (2009)							X			
Hutchings et al. (2011)			X							

Institute of Education Sciences (2011)	X							X		
Kaldi, Filippatou and Anthopoulou (2014)										X
Lavallee, Bierman and Nix (2005)						X				
Liddle and Macmillan (2010)										X
Rahill and Teglas (2003)				X						
Ross and Sabey (2015)					X					
Steen (2011)										X
Webster-Stratton and Reid (2003)							X			
Wu, Lo, Feng and Lo (2010)					X					

Appendix 7: Evaluative framework for quantitative studies



D.Ed.Ch.Psychol. 2017

Review framework for quantitative evaluation research

Author(s):

Title:

Journal Reference:

Criterion	Score	R1	Comment
Use of a randomised group design	1 0		
Focus on a specific, well-defined disorder or problem	1 0		
Comparison with treatment-as-usual, placebo, or less preferably, standard control	1 0		
Use of manuals/ protocol/ training	1 0		
Fidelity checking procedure/ supervision of intervention	1 0		
Sample large enough to detect effect (from Cohen, 1992)	1 0		
Use of outcome measure(s) that has demonstrably good reliability and validity <i>(2 points if more than one measure used).</i>	2 1 0		
Total	<i>Max 8</i>		

Appendix 8: Ethical approval



The University of Manchester

Environment, Education and Development School Panel PGR

School for Environment, Education and Development
Humanities Bridgeford Street 1.17

The University of Manchester

Manchester

M13 9PL

Email: PGR.ethics.seed@manchester.ac.uk

Ref: 2017-2640-4249

07/12/2017

Dear Miss Vanessa Evans, , Dr Caroline Bond, Dr Ann Lendrum

Study Title: Thesis: Implementation of Lego Therapy in mainstream primary schools

Environment, Education and Development School Panel PGR

I write to thank you for submitting the final version of your documents for your project to the Committee on 13/11/2017 08:50 . I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form and supporting documentation as submitted and approved by the Committee.

Please see below for a table of the titles, version numbers and dates of all the final approved documents for your project:

Document Type	File Name	Date	Version
Letters of Permission	DBS	02/10/2017	1
Consent Form	Appendix F Educational staff consent form v2	03/11/2017	2
Consent Form	Appendix G Parent Carer consent form v2	03/11/2017	2
Participant Information Sheet	Appendix A, Information booklet, SENCO v2	03/11/2017	2
Participant Information Sheet	Appendix B, Information booklet, Group leader v2	03/11/2017	2
Participant Information Sheet	Appendix C, Information booklet, parent v2	03/11/2017	2
Participant Information Sheet	Appendix E, Information booklet, EP v2	03/11/2017	2
Consent Form	Appendix H Young person assent form v2	03/11/2017	2
Participant Information Sheet	Appendix D, Information booklet, Pupil v2	03/11/2017	2
Additional docs	Appendix I School staff interview schedule v2	03/11/2017	2
Additional docs	Appendix J EP interview schedule v3	03/11/2017	3
Additional docs	Appendix K Observation checklist	03/11/2017	2
Additional docs	Ethics letter revisions	11/11/2017	1

This approval is effective for a period of five years and is on delegated authority of the University Research Ethics Committee (UREC) however please note that it is only valid for the specifications of the research project as outlined in the approved documentation set. If the project continues beyond the 5 year period or if you wish to propose any changes to the methodology or any other specifics within the project an application to seek an amendment must be submitted for review. Failure to do so could invalidate the insurance and constitute research misconduct.

You are reminded that, in accordance with University policy, any data carrying personal identifiers must be encrypted when not held on a secure university computer or kept securely as a hard copy in a location which is accessible only to those involved with the research.

For those undertaking research requiring a DBS Certificate: As you have now completed your ethical application if required a colleague at the University of Manchester will be in touch for you to undertake a DBS check. Please note that you do not have DBS approval until you have received a DBS Certificate completed by the University of Manchester, or you are an MA Teach First student who holds a DBS certificate for your current teaching role.

Reporting Requirements:

You are required to report to us the following:

1. Amendments
2. Breaches and adverse events
3. Notification of progress/end of the study (if applicable)

We wish you every success with the research.

Page 1 of 2

Yours sincerely,

Dr Sarah Marie Hall

Appendix 9: Semi-structured interview schedule

Introduction and aim:

To collect information about how LBT is used at school, to support me in researching LBT. I will audio record the interview - consent form.

Confidentiality – Interviews will be audio recorded, transcribed and analysed. They will be anonymized so that nobody can be identified from quotes. Information will be kept on password protected and encrypted devices, only those requiring access will see the data. Findings will be presented in a research report for publication and sharing with professional and academic communities.

Format of interview – should last around 45 mins. No right or wrong answers – interested in your understanding and implementation of LBT. Let me know if you would like to take a break or miss a question.

Exploring implementation

1. How was it decided to run LBT at school? (prompts: leadership, joint decision making, planning with the recommending professional, aims for the pupils)
2. Could you tell me about the process of setting LBT up? (prompts: recommendation, planning, training, resources, frequency (dosage))
3. How has LBT evolved over time? Does it look the same as it did when you first started? (prompts: retraining, technical assistance from recommending professional, adaptation to context/pupils e.g. challenges)
4. Tell me about how you evaluate the use of LBT at school? (prompts – which pupils, how they progress through the levels, when they 'graduate' from LBT, how you know it's being effective at developing social communication, what's working well/challenges)
5. What are your plans for LBT going into the future?
6. Would you recommend LBT to other settings as an intervention? (prompts – why, facilitators/hindering factors, working with children with different needs)
7. How do you feel the children respond to LBT?
8. Is there anything else regarding LBT that you feel would be important or useful for me to know?

Thank you for your time and participation in this study.

Appendix 10: Researcher observation format

Adapted from Brett (2013) and LeGoff et al. (2014). To be supported by LA documentation and monitoring methods, researcher field notes/diary.

Date: _____

Session number: _____

<u>Activity/element</u>	<u>Present?</u>	<u>Comments</u>
Session structure		
Names recorded – check-in		
Rules displayed and referred to		
Roles – assigned		
Role cards on display		
30 mins structured building		
15 mins freestyle building		
Pupils tidy up		
Summary, praise, certificates		
Group activities		
Children in a group of 3		
Children sitting around a table		
Adult facilitates		
Children use roles appropriately		
Interactions between pupils		
Activity leader		
Praises good building		
Praises social skills		
Encourages pupils to help each other		
Facilitates (not directs)		
Supports children with difficulties		
Identifies social problem to pupils		
Supports children to problem solve		
Asks pupils to role play positive social behaviours		
Reminds pupils of previously used strategies		
Identifies rule break to pupils		
Prompts pupils to remind group on rule break		
Highlights successes to group		

Confidentiality

Observation data will take the form of researcher notes and a checklist. No names will be recorded and any references which make either staff, family or pupils potentially identifiable will be removed. Data will be analysed at the University of Manchester by Vanessa Evans to look for themes which describe how Therapeutic Lego is used by a mainstream school and what helps and challenges the use of the intervention.

All anonymous data will be stored securely on an encrypted drive at the University of Manchester. Data will be archived at the University of Manchester for a period of five years and then destroyed. Summaries of project outcomes can be posted directly on request. Data will be aggregated and anonymised.

Any questions or need further information? Contact:

Vanessa Evans

Manchester Institute of Education
School of Environment, Education and Development (SEED)
Ellen Wilkinson Building
The University of Manchester
Oxford Road
Manchester
M13 9PL

Vanessa.evans@postgrad.manchester.ac.uk
Supervising tutor: Caroline.bond@manchester.ac.uk

What if something goes wrong?

If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Governance and Integrity Manager, Research Office, Christie Building, University of Manchester, Oxford Road, Manchester, M13 9PL', by emailing: Governance@manchester.ac.uk, or by telephoning 0161 275 7580 or 275 8093

Many thanks for taking the time to read this booklet. If you agree to take part, please sign the enclosed consent form and return to Vanessa Evans



**Research project:
The implementation of
Therapeutic Lego in English
mainstream primary schools**



SENCO Information Booklet

Ethical approval reference:
2017-2640-4249

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.



What is the aim of the research?

This study attempts to understand how 'Therapeutic Lego' is used by exploring school based professionals' and young peoples' experiences of 'Therapeutic Lego'. This is in order to better understand the factors which support and challenge the successful use of Lego Therapy in schools and to inform future recommendations for it as an intervention.

Why have I been chosen?

Your school has been identified as delivering 'Therapeutic Lego' which is embedded as part of your school practice, the intervention is delivered by a school based practitioner and to a small group of pupils.

Do I have to take part in the research?

You are under no obligation to participate. Please note that because data will be anonymised and aggregated, it may not be possible for all data to be retrieved and discarded after data analysis has commenced.

What will taking part involve? When will it happen?

You would be asked to supply documentation relating to Lego Therapy Lego and interventions and to participate in a face to face interview at a mutually convenient time at school. The interview should take approximately 45 minutes. The questions will explore your understanding of Therapeutic Lego and how it has been implemented at your school.

Are there any advantages or disadvantages to taking part?

There are no direct advantages or disadvantages to and your participation will be voluntary. It will help professionals to understand the factors affecting how 'Therapeutic Lego' is run and will help to guide recommendations made regarding 'Therapeutic Lego' in the future to ensure that pupils receive the best support possible.

Will the outcomes of the research be published?

Findings will be collated to form the basis of an academic paper which may be published in a journal or presented to colleagues.

Who has reviewed the research project?

The project has been reviewed by the School of Environment, Education and Development (reference 2017-2640-4249). The researcher is in possession of a full DBS check.



Confidentiality

Observation data will take the form of researcher notes and a checklist. No names will be recorded and any references which make either staff, family or pupils potentially identifiable will be removed. Data will be analysed at the University of Manchester by Vanessa Evans to look for themes which describe how Therapeutic Lego is used by a mainstream school and what helps and challenges the use of the intervention.

All anonymous data will be stored securely on an encrypted drive at the University of Manchester. Data will be archived at the University of Manchester for a period of five years and then destroyed. Summaries of project outcomes can be posted directly on request. Data will be aggregated and anonymised.

Any questions or need further information? Contact:

Vanessa Evans
 Manchester Institute of Education
 School of Environment, Education and Development (SEED)
 Ellen Wilkinson Building
 The University of Manchester
 Oxford Road
 Manchester
 M13 9PL
 Vanessa.evans@postgrad.manchester.ac.uk
 Supervising tutor: Caroline.bond@manchester.ac.uk

What if something goes wrong?

If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Governance and Integrity Manager, Research Office, Christie Building, University of Manchester, Oxford Road, Manchester, M13 9PL, by email: Governance@manchester.ac.uk, or by telephoning 0161 275 7580 or 275 8093

Many thanks for taking the time to read this booklet. If you agree to take part, please sign the enclosed consent form and return to your school
 SENCO



**Research project:
 The implementation of
 Therapeutic Lego in English
 mainstream primary schools**



**Group Leader
 Information Booklet**

Ethical approval reference:
 2017-2640-4249

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.



What is the aim of the research?

This study attempts to understand how 'Therapeutic Lego' is used by exploring school based professionals' and young peoples' experiences of Therapeutic Lego. This is in order to better understand the factors which support and challenge the successful use of Therapeutic Lego in schools and to inform future recommendations for it as an intervention.

Why have I been chosen?

Your school has been identified as delivering Therapeutic Lego which is embedded as part of your school practice, the intervention is delivered by a school based practitioner and to a small group of pupils.

Do I have to take part in the research?

You are under no obligation to participate. Please note that because data will be anonymised and aggregated, it may not be possible for all data to be retrieved and discarded after data analysis has commenced.

What will taking part involve? When will it happen?

You would be asked to participate in a face to face interview with the researcher which should take around 45 minutes, at a mutually convenient time at school. The questions will explore your understanding of Therapeutic Lego and how it has been implemented at your school. You would also be asked to carry out at least two Therapeutic Lego sessions which the researcher could observe—the focus of the observation will be on the implementation of the intervention (not the teaching approach).

Are there any advantages or disadvantages to taking part?

There are no direct advantages or disadvantages to and your participation will be voluntary. It will help professionals to understand the factors affecting how Therapeutic Lego is run and will help to guide recommendations made regarding its use in the future to ensure that pupils receive the best support possible.

Will the outcomes of the research be published?

Findings will be collated to form the basis of an academic paper which may be published in a journal or presented to colleagues.

Who has reviewed the research project?

The project has been reviewed by the School of Environment, Education and Development (reference 2017-2640-4249). The researcher is in possession of a full DBS check.



Appendix 13: Information sheet, parent/carers

Confidentiality

Observation data will take the form of researcher notes and a checklist. No names will be recorded and any references which make either staff, family or pupils potentially identifiable will be removed. Data will be analysed at the University of Manchester by Vanessa Evans to look for themes which describe how Therapeutic Lego is used by a mainstream school and what helps and challenges the use of the intervention.

All anonymous data will be stored securely on an encrypted drive at the University of Manchester. Data will be archived at the University of Manchester for a period of five years and then destroyed. Summaries of project outcomes can be posted directly on request. Data will be aggregated and anonymised.

Any questions or need further information? Contact:

Vanessa Evans
Manchester Institute of Education
School of Environment, Education and Development (SEED)
Ellen Wilkinson Building
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M13 9PL
Vanessa.evans@postgrad.manchester.ac.uk
Supervising tutor: Caroline.bond@manchester.ac.uk

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Many thanks for taking the time to read this booklet - let. Please read the enclosed pupil booklet with your child and, if you agree to take part, return the consent forms to school.



Research project: The implementation of Therapeutic Lego in English mainstream primary schools



Parent/Carer Information Booklet

Ethical approval reference:
2017-2640-4249

Your son/daughter is being invited to take part in a research study. As they are under the age of 18, your consent is required for their involvement. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with your son/daughter. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish your child to take part.



What is the aim of the research?

This study attempts to understand how 'Therapeutic Lego is used by exploring school based professionals' and young peoples' experiences of Therapeutic Lego. This is in order to better understand the factors which support and challenge the successful use of Therapeutic Lego in schools and to inform future recommendations for its use as an intervention.

Why has our family been chosen?

Your son/daughter has been identified as attending Therapeutic Lego, delivered by a member of staff, which aims to develop children's social and communication skills.

Do we have to take part in the research?

Your child is under no obligation to participate. Please note that because the data will be anonymised and aggregated, it may not be possible for all data to be retrieved and discarded after data analysis has commenced.

What will taking part involve? When will it happen?

Your child would participate in their Therapeutic Lego sessions as normal. The researcher, Vanessa Evans, would observe at least two Therapeutic Lego sessions, taking note of the actions and interactions of the group leader and the pupils. She would not interact with the group; your child may not notice her presence.

Are there any advantages or disadvantages to taking part?

There are no direct advantages or disadvantages to you or your child and their participation will be voluntary. It will help professionals to understand the factors affecting how Therapeutic Lego is run and will help to guide recommendations made regarding Therapeutic Lego in the future to ensure that pupils receive the best support possible.

Will the outcomes of the research be published?

Findings will be collated to form the basis of an academic paper which may be published in a journal or presented to colleagues.

Who has reviewed the research project?

The project has been reviewed by the School of Environment, Education and Development (reference 2017-2640-4249). The researcher is in possession of a full DBS check.



Appendix 14: Consent form, school staff

How is LBT Implemented in a Mainstream Primary Context?

If you are happy to participate please complete and sign the consent form below.

Please initial box

1.	I confirm that I have read the attached information sheet on the above project and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.	
2.	I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason and without detriment to myself.	
4.	I understand that my data will remain confidential	
4.	I understand that the interviews will be audio-recorded.	
5.	I agree to the use of anonymous quotes.	
6.	I agree that any data collected may be published in anonymous form in academic books or journals, presented to professional colleagues or form a pilot for future research	
7.	I agree to take part in the above project	

Name of participant

Date

Signature

Name of researcher

Date

Signature

Appendix 15: Information sheet, young person

What happens to the data?

Vanessa will write notes about what she sees. She will look at this at the University of Manchester.

She won't need to use your name, and nobody will be able to find out that you took part in the research. The data will be kept safe and it might be used to write a report.



How can I contact you?

Vanessa Evans
Manchester Institute of Education
School of Environment, Education and Development
(SEED)
Ellen Wilkinson Building
The University of Manchester
Oxford Road
Manchester
M13 9PL
Vanessa.evans@postgrad.manchester.ac.uk
Supervising tutor: Caroline.bond@manchester.ac.uk



**Research project:
Therapeutic Lego**



**Pupil
Information Booklet**

Ethical approval reference:
2017-2640-4249



You have been invited to help with a research study. It is your choice to take part or not, but this sheet will tell you about the research so that you can decide. Please talk to your mum, dad or Therapeutic Lego leader if you aren't sure. Thank you for reading this!

What is the aim of the research?

Vanessa would like to see what happens in a Therapeutic Lego to find out how it works and how it might be made better.

Why have I been chosen?

Your school has said that you might be helpful because you go to Therapeutic Lego.

What happens if I change my mind?

It is your choice whether you take part or not. Because we won't use names, we might not be able to remove all data once Vanessa has started to look at it.

What would I have to do?

All you would need to do is go to Therapeutic Lego! Vanessa would like to come and watch some Therapeutic Lego sessions. She won't need to speak to you and you won't need to do anything different.



Where will it happen?

Vanessa will come to school to watch the Therapeutic Lego in the normal time and place two or three times.

Appendix 16: Coding process, NVivo

Click to edit

School M SENCO

Respondent: Yeah, just kind of putting the positives, negatives...if we viewed any and the impact. So the impact was need to train up, I couldn't do it...I couldn't fulfil that with the children, so the impact was...we'd need to train up some more, the positives was, we've got children who've got barriers to learn in, whether it's emotional barriers, whether it's classroom situation barriers...whether it's a learning need...social turn-taking... cause the Boxall profile we use in school...and...that identifies a need in a child, so like a turn-taking need or a disappointment need or an acceptance of disappointment...so one of the children you'll meet does have autism...and his target for a long time was accepting disappointment. So the Lego group because you are naturally disappointed if you're not the builder, to begin with...so how do we...enable you to have skills to cope with that? So we feel that...Lego group really benefitted that child and he's...academically, excelling in most things.

Interviewer: What do you feel it is about the Lego group that facilitated that change within him?

Respondent: There's a maturity as well, he's moved from Key Stage 1 to Key Stage 2, there's an understand...a parental understanding of the child's got to enable themselves to be able to cope...and...there is...the need to have to articulate what you're trying to say and you're not the builder and you can't do it for somebody else and so you have to really develop resilience and patience...This particular child with the autism...has a friendship clash...a love friendship clash and on occasions we've brought...him into the Lego group and then they...XXX [nurture lead] will have the

Timetabling

4Ci. Leadership, advocacy

5B. Technical Assistance

4Biv, b. Autonomy and management balanced with collaboration

4Biv, d. Shared responsibility

3Bii. Social validity

2Aii, Needs of individual children

5A. Training

4Bi. Shared decision making

3A. Adaptation, programme modification and reinvention, can it be modified to fit values and cultural norms

5D. Process (carefully planned) of dissemination more formally

4Aiiib. Fit with available resources inc with other interventions, physical space, practical resources, timetable

4C. Specific staffing considerations

4Aiii. Integration of new programming

4Biii. Communication

3B. Compatibility with mission, priorities and values, social validity, generalisable, target specific skills, need:

2Bii, Perceived benefit at individual level

2B. Perceived benefit and impact at the local level

4A. General organisational factors

5. Factors relating to Prevention Support System

4Biv, a. Accountability, monitoring and evaluation

2. Provider Characteristics

3. Characteristics of the intervention

4Biv. Formulation of tasks, workgroups etc to enhance strategic planning, roles and res

4B. Specific practices and processes

4. Factors relevant to Prevention Delivery System, Organisational Capacity

Coding Density

2 Items Codes: 47 References: 771 Read-Only Line: 99 Column: 96

Appendix 17: Organising codes into nodes

Create Explore Share

Nodes Search Project

Name	Files	References	Created	Modified
1. Community Level Factors		1	03/01/ VE	03/01/ VE
1A. Prevention theory and research		1	03/01/ VE	27/01/ VE
1B. Politics		0	03/01/ VE	27/01/ VE
1C. Funding		0	03/01/ VE	27/01/ VE
1D. Policy		0	03/01/ VE	27/01/ VE
2. Provider Characteristics		2	03/01/ VE	27/01/ VE
2B. Perceived benefit and impact at the local level		2	05/12/ VE	27/01/ VE
2Bi. Perceived benefit at local schoolwide level		2	06/01/ VE	27/01/ VE
2Bii. Perceived benefit at individual level		2	06/01/ VE	27/01/ VE
2A. Perceived need for innovation		0	03/01/ VE	27/01/ VE
2Ai. Need at the local schoolwide level		2	03/01/ VE	27/01/ VE
2Aii. Needs of individual children		2	03/01/ VE	27/01/ VE
2C. Self efficacy, do providers feel able to do what is required		2	03/01/ VE	27/01/ VE
2D. Skill proficiency, possession of necessary skills for implementation		2	03/01/ VE	27/01/ VE
3. Characteristics of the intervention		2	03/01/ VE	11/01/ VE
3A. Adaptation, programme modification and reinvention, can it be modified to fit values and cultural norms		2	05/12/ VE	27/01/ VE
3B. Compatibility with mission, priorities and values, social validity, generalisable, target specific skills, needs led		2	03/01/ VE	27/01/ VE
3Bii. Social validity		2	14/01/ VE	27/01/ VE
3Bi. Fit with mission, priority and purpose inc flexibility to work on different skills		2	14/01/ VE	27/01/ VE
4. Factors relevant to Prevention Delivery System, Organisational Capacity		2	03/01/ VE	14/01/ VE
4A. General organisational factors		2	03/01/ VE	27/01/ VE
4Ai. Positive work climate, empowering		1	03/01/ VE	09/02/ VE
4Aii. Organisational norms regarding change inc perception of LA norms		1	03/01/ VE	27/01/ VE
4Aiii. Integration of new programming		2	03/01/ VE	27/01/ VE
4Aiiia. Financial		1	05/12/ VE	27/01/ VE
4Aiiib. Fit with available resources inc with other interventions, physical space, practical resources, timetable		2	02/01/ VE	27/01/ VE
Timetabling		2	05/12/ VE	14/01/ VE
Practical resources		2	02/01/ VE	14/01/ VE
Fit with other interventions		1	14/01/ VE	14/01/ VE
Physical space		1	14/01/ VE	14/01/ VE
4Aiv. Shared vision		2	03/01/ VE	27/01/ VE
4B. Specific practices and processes		2	03/01/ VE	27/01/ VE
4Bi. Shared decision making		2	05/12/ VE	27/01/ VE
4Biii. Communication		2	05/12/ VE	27/01/ VE
4Bii. Coordination with other agencies		1	03/01/ VE	27/01/ VE
4Biv. Formulation of tasks, workgroups etc to enhance strategic planning, roles and responsibilities		2	03/01/ VE	27/01/ VE
4Biv. c. Identification of participants		2	05/12/ VE	27/01/ VE
4Biv. b. Autonomy and management balanced with collaboration		2	05/12/ VE	27/01/ VE
4Biv. a. Accountability, monitoring and evaluation		2	05/12/ VE	27/01/ VE
4Biv. d. Shared responsibility		2	05/12/ VE	27/01/ VE
4C. Specific staffing considerations		2	03/01/ VE	27/01/ VE
4Cii. Champion		2	05/12/ VE	27/01/ VE
4Ci. Leadership, advocacy		1	02/01/ VE	27/01/ VE
4Ciii. Managerial, supervisory, admin support		1	03/01/ VE	27/01/ VE
5. Factors relating to Prevention Support System		2	03/01/ VE	14/01/ VE
5D. Process (carefully planned) of dissemination more formally		2	05/12/ VE	27/01/ VE
5A. Training		2	03/01/ VE	27/01/ VE
5B. Technical Assistance		2	03/01/ VE	27/01/ VE
5Bii. Technical Assistance, Post training support, technical assistance internal and external		2	05/12/ VE	27/01/ VE
5Bi. Technical Assistance, Peer support for staff		2	05/12/ VE	27/01/ VE
5C. Diffusion informally		2	14/01/ VE	27/01/ VE
6. Participant responsiveness inc dynamics		2	03/01/ VE	27/01/ VE

Appendix 18 - Cross case synthesis extract

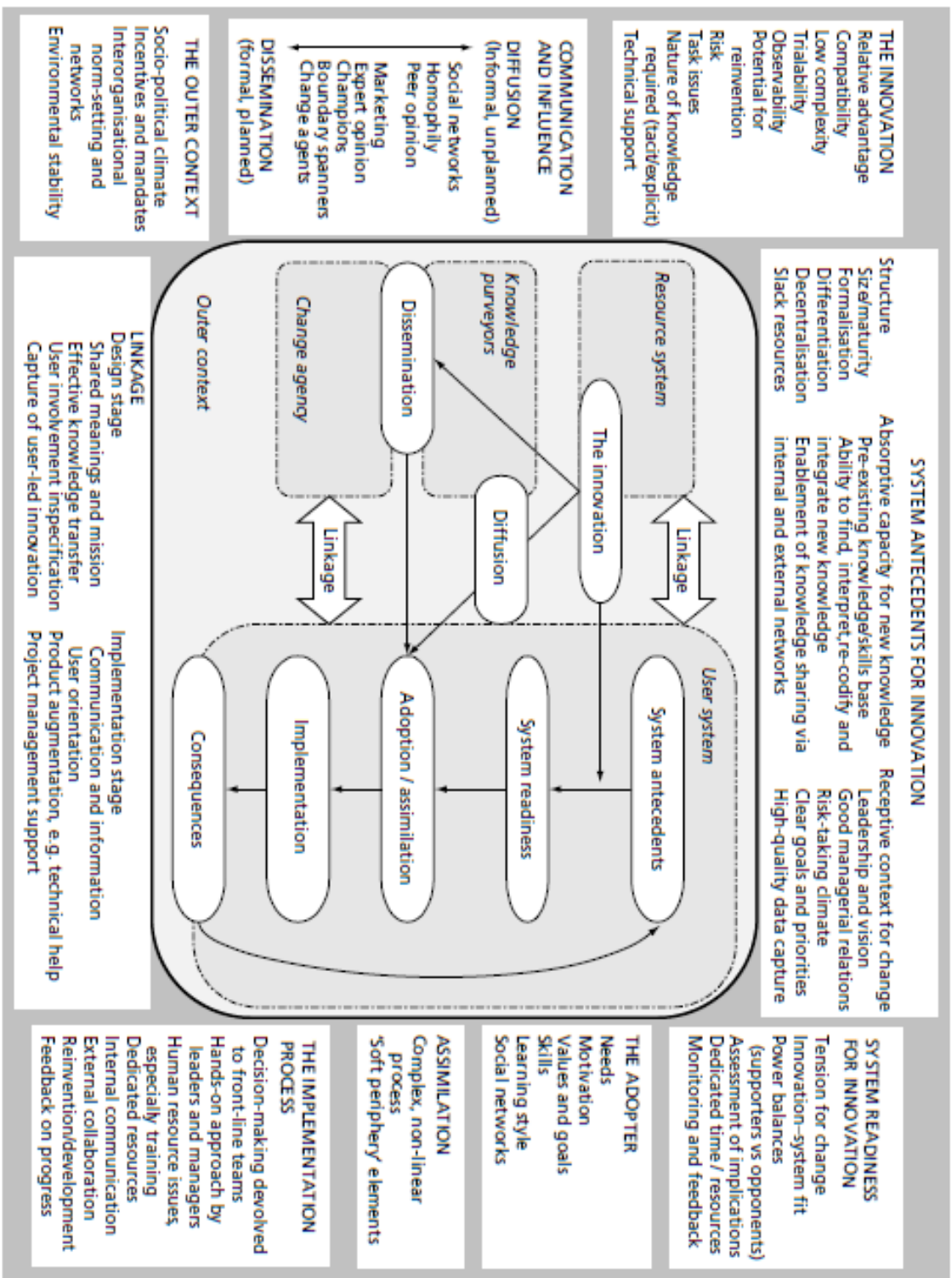
Subtheme	Microtheme	School M (facilitator , SENCO)	School P (facilitator , SENCO)	Notes/observations
4Ai. Positive work climate, empowering		<ul style="list-style-type: none"> I said, 'right, what are the main needs of this?' And they say, '3 times a week it has to happen...' because XXX [staff?] said about Fischer Family Trust...5 times a week is brilliant...but not really successfully managed through...4 times a week has to happen. If you can only dedicate 3 times a week to it, you may as well not bother, so for a SENCO to hear that...rather than the TA come back and say, 'if we're going to do this intervention, you have to do it at least 4 times a week.' So the SENCO, me, being there, I know that you've got to timetable...that... are we creating a realistic timetable for XXX [nurture lead] or are we cramming it and she's not achieving? we'll regroup as the 4 of us...on Lego, I'll have to facilitate that. 	<ul style="list-style-type: none"> If you're sitting there with a miserable face, then they're not going to get what you want from it are they? she manages it really well...and I trust what she does. I mean she's great at delivering it. 	The SENCO at school M appeared to set up a very empowering ethos which seemed to link to her role as supervisor/overseer. This was more managerial in school P
4Aii. Organisational norms regarding change including perception of LA norms		<ul style="list-style-type: none"> invite your SENCO to do the training alongside your teaching assistants is fabulous. It can't happen with every intervention but...you have a...you have like...I have a big overview now of what...the needs of the school are, what your budget is and how you're going to manage it when you get back to school 	<ul style="list-style-type: none"> At first it felt like it was pushed upon us because it was something new...let's give it a go, let's...because we're always up for trying something new They were really enthusiastic because I think probably they're fans...a lot of people are fans...a lot of teachers are fans of Lego aren't they? 	Not as much about attitude to change but it links to leadership/management as this is essential for change to occur. It needs to have people on board (social validity) as well as leadership.
4Aiii. Integration of new programming	Financial	<ul style="list-style-type: none"> I have a big overview now of what...the needs of the school are, what your budget is and how you're going to manage it when you get back to school because budget cuts and things like that, I've had to be very clear with my rationale about why I want XXX [nurture lead] as a level 3 teaching assistant...not in class. So an implication is budget...so I...I budgeted for some more Lego...only the catalogue was rubbish so....it's how I move forward with that because the supermarket is the best place to get it from! 	<ul style="list-style-type: none"> I think you've got to bear in mind the initial cost because if you haven't got the right equipment, you can't really cobble it together, it's too much to ask people. 	Financial implication was more of a concern for school M - maybe school P benefitted from being MAT? Finances only commented on by SENCOs.

	Fit with available resources	<ul style="list-style-type: none"> • XXX [child] comes into the nurture as well, it's sort of combined with that that his target for nurture is compromising, so he likes to...you know, sort of...integrate that with the Lego as well. • it's been fine, it's been absolutely fine, yeah and it's nice having this space in here to be able to do that...and I'm lucky like that because I work in here as well as in class, but...some of the other TAs sometimes...have trouble, you know, getting the time to do the intervention or getting the space to do the intervention. • Timetabling is a constant battle! And when it's timetabled and it's got a fixed slot it happens here at XXX [school] • and what 3 things can be put in place? So even she's put piloting, 'small groups of children to be piloted through school.' You know at dinnertime, break time group, wet play...well, she was trying to think of creative ways for me to do it and I just said we've got to sort this within a curriculum time that's least intrusive of the needs of the classroom • What we've found helpful and I would probably pass that on, is those little boxes of Lego are really successful... • because that big box of Lego and I think, 'you're supposed to make a whale out of that!' But those little boxes, they've got the instructions in there...yeah...and they're perfect, so they're my favourite. 	<ul style="list-style-type: none"> • Ordering the Lego first was the main thing! • It's all the behind the scenes bit that...takes most time, so it was printing off all the instructions for different...different things that they were building, very simple ones to start off with, like the numbers, 1, 2, 3...and the very basic instructions to building a dragon so...went through all the different...levels of difficulty with the things they were making, printed the instructions, laminated them...separated all the Lego blocks to make sure they were there...labelled everything • You don't realise actually how much is going into something before...you actually run the group. • I sat there with all the Lego all over the floor...sorting all the pieces out myself first...to then build them to make sure they built as following the instructions, so I must have spent weeks building...just little Lego things myself and then making sure all the pieces of the instructions were there and it matched up, yeah! • the thing we struggle with...with the learning mentors it's not so bad because it's built into their timetable. With our TAs who are in class...when we ask them to do it, it's time and it's also the class teacher being on board...because there's so many other demands...sometimes I think they think, well...yeah, that's you know...that can go to the side because we need to be doing this for an assessment or we need to be doing such and such • I think a lot of the Year 3s would be able to access it. It's just having the time though as well... • I think you've got to bear in mind the initial cost because if you haven't got the right equipment, you can't really cobble it together, it's too much to ask people. • I just think it's just making sure that you've got all of the stuff that you need....and you're well-prepared. 	Common themes between the two schools
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4Aiv. Shared vision		<ul style="list-style-type: none"> she mentioned about using it and...and then...eventually we had somebody come in and do a bit of training with the teaching assistants, in here. And we all sat round and we made a model, in fact, I think we made the sheep one and realised, you know, that it was great, you know, it was going to be a good thing to do and then from there...we decided on different children to use. so...in the summer term, I'll have a meeting with his parents even though they're not on our special educational needs, meeting with them and saying, 'he's fulfilled and he's done and he's exceeded in this...we won't continue it into Year 3 unless you feel there's a conversation you need to have and we're noticing friendships or disagreements,' because then that's a barrier to learning...and then we may think about having another consultation meeting with parents. 	<ul style="list-style-type: none"> obviously you had the...some at first that was like, 'well, why are they going just to play with Lego?' So it's explaining...the meaning behind it and how it's going to help them and...obviously getting staff on board as well That's quite important, getting the parents on board and I think it's... one of the reasons I think this leaflet's really, really good [...] one parent in the past has said, 'they don't need to just play with Lego, what's that going to achieve?' So...actually having those open conversations with parents to explain what we're actually aiming to get and how it's going to help them. it's also the class teacher being on board...because there's so many other demands...sometimes I think they think, well...yeah, that's you know...that can go to the side because we need to be doing this for an assessment or we need to be doing such and such most of our staff are quite on board with the fact that you need to do it regularly, but we've had a few who kind of see it as a reward....so...if you haven't behaved then you can't do your Lego. So that's been a bit of a battle. 	<p>Not many references for School M: LBT at School M appears to have been initiated by the SENCO, then introduced to the staff who realised it would be helpful. From then, the shared vision is for individual children rather than being a shared vision of the intervention. References to shared vision for School P also suggests that it's the shared vision for the children, rather than a shared vision of the intervention, but does include importance of shared vision between all staff and parents. Links to social validity for school P.</p>
4Bi. Shared decision making		<ul style="list-style-type: none"> I think XXX [SENCO] will decide that, the SENCO, yeah. ...talking to the teachers and whatever they think they're doing so...for example, with XXX [child], it was the teacher that said to me, 'he's having real trouble with this, can we change, you know, change his group for a little bit?' And then...you know, so we could work on a different skill...yeah. I brought it back, discussed it with the head...discussed it with XXXXXXXX [staff] who is the nurture lead she'll then...feedback briefly to me just so I've got the big picture but she's then knowing and noting down in her notebook how then to best set up the next session she's been given ownership of it by myself, she's managing that. she manages that very well, but feeds back all the time to me. would you like XXX [child] to continue with the Lego?' I put it back to the parents and they said yes, so then now, as a result of this, we've brought it back up because what'll come out is the ownership of that group, 'well I need more time,' or...'actually I feel like I want a bit more skill practice or something,' or...'do you know what, for these children, they've kind of expired,' ...yeah...so that's it, right, that's what we do, plan, do, assess, review XXX [nurture lead] because she's on the...she's the nitty gritty, I'm kind of just the big kind of controller I think...or the overseer or... 'is it working? Is it not? Have you had time? Have you not? I discuss it each time...each time we review [with the EP, yearly]. 	<ul style="list-style-type: none"> here it's XXX [learning mentor], the learning mentor who's done it and she's kind of taken control of it...obviously she meets with me and we discuss the children and who's going to be doing it each half term or each term. And we talk to teachers about why they think they need it...and...kind of identify that way. 	<p>School M - there seems to be shared decision making with parents, and there is some reference to shared decision making between staff, but then there's another narrative of autonomy for the facilitator to make her own decisions with the SENCO as 'big controller'. Links to autonomy/management and leadership. School P - only one reference by SENCO for shared decision making, where she infers that she has an overview whilst the leader has autonomy and 'ownership', though references having discussions and deciding participants each half term, as well as talking to teachers.</p>

4Bii. Coordination with other agencies		<ul style="list-style-type: none"> We were doing it twice a week to begin with and we've realised with conversation with XXX [school EP] that actually once a week is OK so we do it once a week. I discuss it each time...each time we review... 	<ul style="list-style-type: none"> it started really with...XXX [school EP] – she kind of introduced the idea to us. But since then...a lot of meetings that we've had, kind of EP consultations and reviews, it's been recommended for various children so we've been able to kind of go at it straight away. An educational support service team recommends it sometimes in their reports...but I think they're aware of it like us, through the EP service. I think with the...children who are under the EP, you get your review meeting so you can kind of take it apart then can't you? But...yeah, some of the kids... 	School M - only the EPS is referenced and only by the SENCO. Other than training, this is only to review, with only one incidence of technical assistance. Similarly only SENCO referenced this at School P, but also referenced specialist teacher service. Links to ID of ppts and evaluation/monitoring.
4Biii. Communication		<ul style="list-style-type: none"> Interviewer: So do all the children know the targets that they're working on at the time? Respondent: Not particularly, no. I think XXX [SENCO] will decide that, the SENCO, yeah. sort of talking to the teachers and whatever they think they're doing we were thinking, 'oh, shall we changing our groups around a little bit? And I did one the other day and it was just horrendous...and I came out...and XXX [SENCO] went, 'was that awful?' I said, 'oh yeah, it was awful!' fed back to me all the time we've realised with conversation with XXX [school EP] that actually once a week is OK so we do it once a week. she'll then...feedback briefly to me just so I've got the big picture but she's then knowing and noting down in her notebook how then to best set up the next session in the summer term, I'll have a meeting with his parents even though they're not on our special educational needs register because what'll come out is the ownership of that group, 'well I need more time,' or...'actually I feel like I want a bit more skill practice or something,' or...'do you know what, for these children they need... I discuss it each time...each time we review... any situation has to be communicated...and then we'll look at...we pupil progress every child with teachers...and what I...would like as an action is that...teaching assistants...they are involved, but I would like to make that more formal...so like, not performance management because it's not, but like an appraisal of your role in that. 	<ul style="list-style-type: none"> it was discussed in our learning mentor meeting as well of why we thought it would be helpful in the school Boxalls on the children...that we identified already that we knew had these kind of skills...spoken to class teachers parents' feedback as well. We always ask parents, 'how do you...have you see a difference at home?' That's quite important, getting the parents on board and I think it's... one of the reasons I think this leaflet's really, really good [...] actually having those open conversations with parents to explain what we're actually aiming to get and how it's going to help them moving forward sometimes parents have come in and raised issues obviously she meets with me and we discuss the children and who's going to be doing it each half term or each term. And we talk to teachers about why they think they need it...and...kind of identify that way. 	Many references by both at School M. Refers to communication with other agencies, parents and staff. Some communication with children but their voice seems to be missing in comparison. Links to identification of participants and evaluation.

Appendix 19: Original Greenhalgh et al. (2005) model



Appendix 20: ISPA presentation of A1 findings

Background

- Founded by Daniel LeGoff after chance interaction between children in his clinic waiting room
- Use of Lego as motivational tool to engage children in social communication intervention
- Social competence programme using Lego
 - 1: initiation of social contact with peers, reflective of social interest and motivation for social contact
 - 2: duration of social interaction, which reflects the development of communication and play skills
 - 3: decreases in autistic aloofness and rigidity, with development of age-appropriate social and play behaviours
- Research so far suggests an improvement in social competence as well as additional improvements

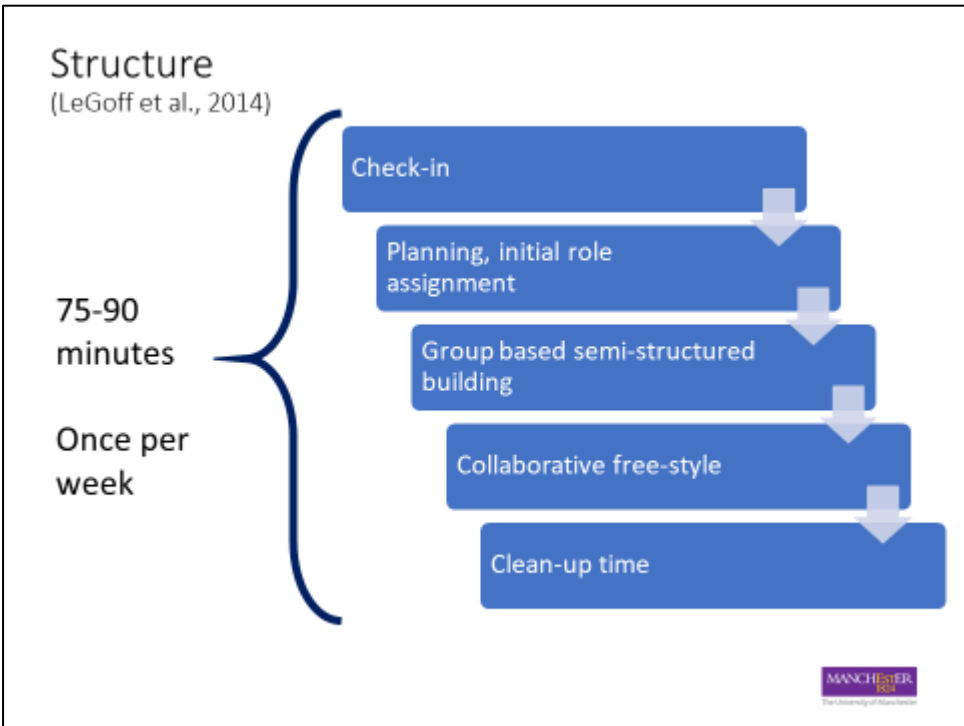
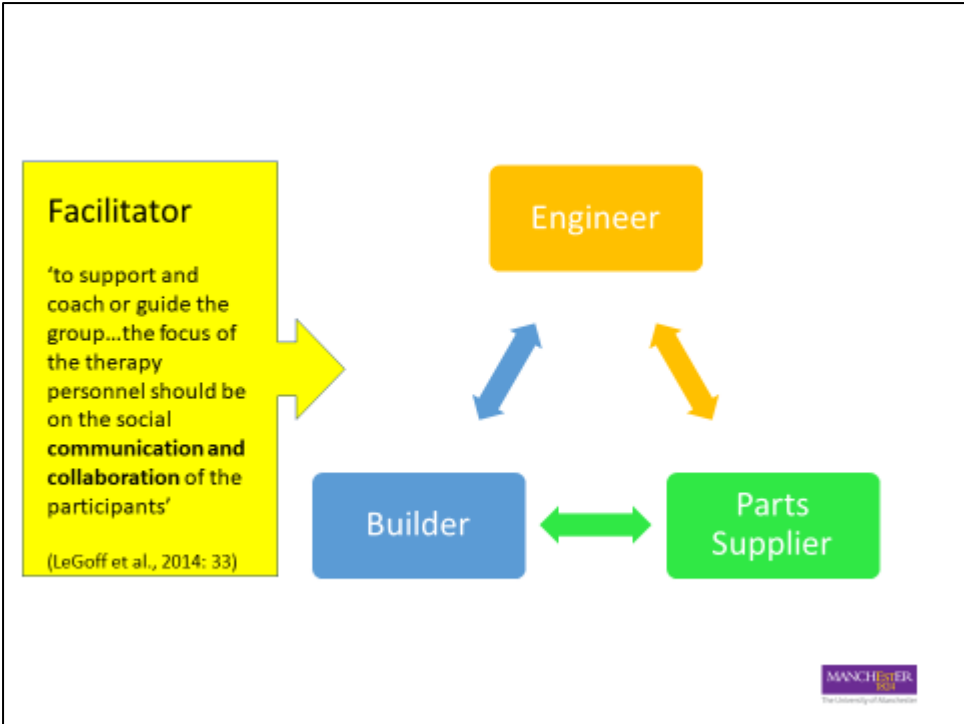
(LeGoff, D B., Gomez De La Cuesta, G., Krauss, D. W. and Baron-Cohen, S.,2014)



What is Lego Therapy?

- Social communication intervention
- Focuses on the use of Lego to motivate children
- Adult facilitates child communication in order to build a model
- Rough rules
- Structured roles
- Often called “Lego Club”





Where is Lego Therapy research up to?

- Potential to improve social and communication skills in young people with ASC (Lindsay, Hounsell and Cassiani, 2017)
 - Group based, trained clinician/educator, 3-18 hour total, session length 1 hour, dosage once per week
- Promising evidence of transfer of social skills (Boyne, 2004)
- Positive reception from parents (Peckett et al., 2016)
- Not yet an evidence-based intervention (Bond et al., 2016).

- Our research is:
 - Implementation of Lego Therapy (Vanessa)
 - EP Use and Perceptions of Lego Therapy (Ellie)



Implementation of Lego Therapy in an English mainstream primary school: a case study

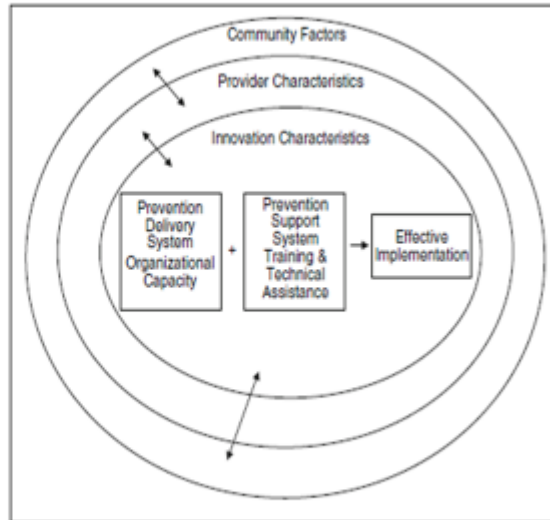
Findings from an exploratory qualitative study

Vanessa Evans



Implementation (Durlak and DuPre, 2008)

- ‘...what a program consists of when it is delivered in a particular setting’ (Durlak and DuPre, 2008: 329)
- Implementation impacts upon outcomes
- For good outcomes in Lego Therapy, need to understand implementation
- Framework for effective implementation



Pilot study

- Exploratory single-case study design
 - RQ1: How is Lego Therapy implemented in a mainstream primary context?
 - RQ2: What factors impact upon the implementation of Lego Therapy?
- Primary school in the North-West
- Data collection:
 - 2x session observations
 - Interview with SENCO
 - Interview with group leader
- Analysis:
 - Hybrid inductive-deductive TA

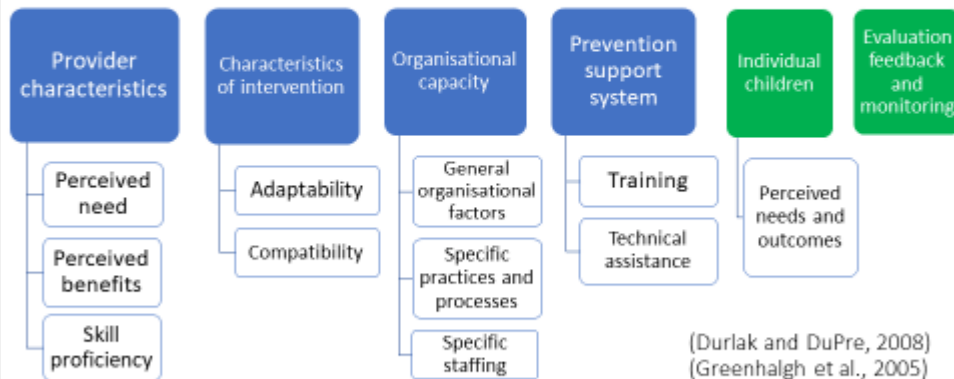


Findings – RQ1 - How is LT implemented in a mainstream primary context?

- Diffusion and dissemination
 - Social validity
 - Recommendation from professional
- Adapted from original model
 - Range of needs
 - TA facilitated
- Contextual factors



Findings – RQ2 - What factors affect the implementation of Lego Therapy?



Implications for professional practice

- Social validity and need
- Consider contextual factors
- Adaptations – impact?
- Training and support
- Evaluation, feedback, monitoring



Appendix 21: Local Authority LBT training taking into account research findings (relevant slides only)

**Building social competence
through Lego[®]-Based Therapy groups**

Welcome back: Session 2

Ness Evans
Trainee Educational Psychologist
Educational Psychology Service

Session aims

- To share our experiences so far of running LEGO groups
- To reflect upon the implementation of Lego groups
- To further understand how to support emotional development (through 'emotional validation')
- To further understand how to support social development within LEGO groups
- To extend skills by evaluating sessions

Think, Pair, Share:

Think (on own), Pair (discuss with person next to you), Share (with group):

How have you used Therapeutic LEGO Groups so far?

1. Who? Why?
2. Where?
3. When?
4. How?

What went well?

(e.g. success of individual children, process of setting it up, comments from parents/staff/children, timetabling...)

**Any challenges you faced?
What did you do?**

What are your next steps?

Evaluate the film clips

- What went well?
- What could be developed further?
- How would you have done it – any changes?

<https://www.youtube.com/watch?v=Er2CgqmU6aw>

<https://www.youtube.com/watch?v=tAMdCLhDVEA> from 1:40



Enhanced practice

Once you are familiar with the LEGO Group format, and have used it for a few weeks, try some of these ideas for enhanced practice:

- Greetings can be more natural and 'like real life'; notice how typically developing peers greet each other, and support the group in developing this informally.
- The group can be involved in choosing projects. They may bring ideas with them.

- Delegate project management to the Engineer, so you can fully concentrate on social coaching
- Prompt other group members to prompt appropriate behaviour, e.g. 'Is he doing your job, Ben? Politely tell him that's your job.' (i.e. teach/prompt appropriate assertiveness)
- Remember to get the children to solve their own social problems (don't automatically jump in with solutions!)

- Gather informal evaluation feedback as you progress, and display (with the child's permission) in speech bubbles near to the group photographs

**Thank you for your time,
attention and participation**



- During freestyle building, subtly facilitate pair/group building projects
- Once a situation has been resolved, ask the group to review which strategies were successful, e.g. 'OK, we got through that. What did we learn about how to handle that situation, Hannah?'
- Emphasise the sense of group identity (e.g. group photographs with models and use of 'we'). If anyone is absent, mention them to keep them in the group's mind.