Where measurement stops: A review of systematic reviews exploring international research evidence on the impact of staff qualification levels in ECEC on the experiences of, and outcomes for, children and families.

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Glossary of terms

CPD  
Continuing professional development; a broad and diverse range of facilitated learning opportunities for practitioners to enhance their teaching and impact positively on children’s experiences, learning and development.

ECEC  
Early Childhood Education and Care

Practitioner  
Anyone who works with young children in an ECEC setting regardless of their level of education or training (includes teachers, nursery nurses, nursery assistants, child minders, educators etc.)

Quality  
This report adopts the definition used by OECD (2018); ‘ECEC quality is a multidimensional concept and broadly defined aims at promoting children’s well-being and positive developmental outcomes’ (Layzer and Goodson, 2006, cited by Slot, p.8). However, we acknowledge that quality is a contested concept in ECEC.

Setting  
A place attended by young children where they are cared for and educated.

Executive Summary

Background

Qualifications vary widely for those employed within the ECEC sector; this is of particular concern within the English context where questions are raised about sustainability. An inconsistent approach to training and qualifications has contributed to a perception of ECEC as low skilled work. Apprenticeships and part-time distance learning courses have become commonplace, enabling practitioners to work and study concurrently; however, this strategy has blurred the boundaries between initial training and CPD.
There is a persistent concern about how to improve educational attainment for young children. In the English context, the Early Years Workforce Strategy (DfE 2017) acknowledged the impact of specialised graduates. Other evidence notes that better qualified practitioners provide higher quality provision (Mathers et al. 2011) and that such provision is positively associated with children’s attainment and progress throughout primary school (Sylva et al. 2011). More recently, Bonetti and Blanden (2020) found a small positive association between the presence of graduate level staff in private, voluntary, and independent settings and 5-year-olds’ attainment on the Early Years Foundation Stage Profile (EYFSP) (DfE 2018) although the authors note that improved outcomes were modest.

It is widely accepted that quality in ECEC matters to the families of young children. In the context of England, successive governments have committed to the expansion of fully subsidised ‘15-hour’ and ‘30-hour’ provision for 2-4 year olds, not only to promote children’s development, but also to support parental employment, particularly for disadvantaged families. Previous initiatives to support parents and families, such as the Sure Start local programmes, found positive impacts for parents and families yet spending cuts have led to more than 30% of Sure Start Centres (more than 1000) closing since 2009 (Smith et al. 2018). A renewed interest in impact on families has been referenced recently in the enhancement of Family Hubs and a discussion of how they may build on existing Sure Start provision (DHSC 2021).

In 2021, it is impossible to consider the experiences of young children and their families without acknowledging the ongoing context of Covid-19. The pandemic situation has impacted both children and families in many ways, including their access to quality education and care, thus worsening an already precarious situation. A further layer of complexity and concern is the impact of pervasive inequalities on the lives of many young children and their families; around 4.3 million children were noted as living in poverty in the UK in 2020 with numbers rising to include the impact of the pandemic (Hirsch and Stone 2021).
Our findings are based on the analysis of 25 reviews which included over 764 research studies. These reviews focused on research evidence of the relationship between practitioner qualifications/training and their links to better outcomes for young children and their families. Reviews were included in the study following a systematic review process based on protocols established by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) (Gough, Oliver, and Thomas 2012). Internationally published literature (written in English) was searched using EBSCO (to include ASC, BEI, ERC and ERIC) and SCOPUS. The search took place in October 2020 and fields included were titles, abstracts and keywords; the search strategy is set out in Appendix 1. Publications were limited to those published between 2002-2020. Inclusion and exclusion criteria were applied to the initial 18579 articles to arrive at the 25 articles analysed for our report.

Summary of findings

The impact of practitioners’ education and qualification

• There is a small positive association between practitioner level of education and the quality of provision; however, more evidence is needed to understand how this links to children’s learning experiences.
• Specialist ECEC qualifications are positively associated with the quality of provision. There was some evidence that specialist ECEC qualifications are linked to specific developmental outcomes for children.
• Higher levels of education, specialist ECEC qualifications and focused CPD can all have an impact on practitioners’ capacity to engage in more sensitive and responsive interactions with children.
• Practitioners with specialist ECEC qualifications are more likely to engage in practices that promote children’s social and emotional development.

The impact of Continuing Professional Development

• CPD is positively associated with the quality of the learning environment and enhanced developmental outcomes for children. CPD that is sustained over time may further enhance outcomes for children.
• There is some evidence that focused CPD is positively associated with children’s language and aspects of early literacy development.
• CPD interventions have a positive impact on children’s levels of self-esteem and self-regulation.

Missing narratives and voices
• Scant attention has been paid to the impact of practitioner qualification and training on issues of inequalities, children’s health and physical development or play.
• There is some tentative evidence that practitioners with specialist ECEC qualifications have an added positive impact for children who are economically disadvantaged. However, these findings were only presented in three reviews.
• Very little research attention has been paid to the relationship between practitioner qualification/ training and the experiences of families.
• None of the 25 reviews, or indeed the individual studies, included any reference to children’s perspectives on their experiences of their ECEC provision.

Conclusion and recommendations

The aim of this review was to identify, analyse and synthesise international evidence on the impact of staff qualifications/training on young children’s experiences of ECEC, on young children’s development and learning outcomes, and on the experiences of families. The large-scale studies included in this review of reviews have much to contribute to knowledge on ECEC. Yet our findings have highlighted the mixed and sometimes contradictory research evidence and surfaced some of the tensions and difficulties of research in this area. The relationship between practitioner qualifications / training and outcomes for children is complex and nuanced. All too often, quantifiable measures of specific aspects of learning are simply too narrow to fully capture the intricacies of children’s development.

This review offers a synthesis of international research findings, although inconclusive in many respects. In addition, this study makes two further contributions. Firstly, a revised model of change is presented, illustrating that the relationship between qualification/training and developmental
outcomes for children is two-steps removed and further complicated by multiple barriers and enablers. Secondly, it has surfaced some of the missing narratives and voices in this field of research. The lack of attention to children’s play, the absence of children’s and parents’ voices, the disregard for issues of wider inequalities in society, such as poverty or special educational needs, raises questions about ‘who’ and ‘what’ research in this area is really for.

From these findings, the authors offer some key recommendations for policy and research.

1. **Investment in specialist qualifications and CPD that focus specifically on the care, development, and education of birth to five year olds is likely to have a positive impact on the quality of ECEC provision, enhance adult-child interactions and may have a positive impact on children’s learning and development.**

We join with the call of others (e.g., Nutbrown 2021) for an enhancement of both initial and continuing training to ensure that those working with young children are specialists in the key knowledge that distinguishes an early years practitioner from a general primary teacher; this knowledge should include broad theoretical perspectives of child development and understandings of lived experiences of childhood. Practitioners also require continued opportunities for reflection to enhance their interactions with the unique child and the unique family. It is particularly relevant, given current difficulties imposed by the Covid-19 pandemic, that practitioners can confidently support children in contexts that their training will certainly not have covered. Practitioner reflection should then be used as a means of course development for both initial training and CPD.

2. **There is a need for research to consider a broader range of research methods in evaluating quality in ECEC.**

Consideration needs to be given to ways of measuring the impact that practitioner qualifications and training can have on young children and their families in the ECEC setting. This is part of wider conversations about what quality in ECEC looks like and links to a suggestion made by Early et al. (2018) that the tools used to measure outcomes for children are too narrowly focused. In addition, research is required which can capture a plurality of variables that influence both the quality of provision (such as group size, staff–child ratios, the physical environment, resources and the culture and leadership of the organisation) and children’s development and learning (such as the diversity of
children’s life experiences outside of the early years settings) including their pattern of attendance in ECEC.

3. **The voices of children, their parents and their families should be included in research and policy discussions about quality in ECEC.**

The voices of both children and their families are notably absent from the research reviewed; consideration must be given to these voices to develop an understanding of how practitioner qualifications impact children’s lives. These key voices could provide a more detailed picture of quality in ECEC. It is well documented that parents and families who work closely with the ECEC setting report positive experiences for themselves and for their children; therefore, they should be included in both research and policy discussions of quality. Children’s voices can also provide an important account of what quality means to them in terms of their ECEC experience.

4. **A greater emphasis on play should be included in research and policy discussions about quality in ECEC.**

Play is considered an important pedagogy; therefore, it should have prominence in both research and policy conversations with a specific focus on its impact for both children and their families. Addressing this significant gap in the systematic review literature would contribute to an important understanding of the impact of play pedagogies for learning and development.

5. **Greater emphasis should be given to issues of equality, diversity and inclusion in research and policy discussions about quality and workforce development in ECEC.**

To compliment narratives around closing the gap in terms of young children’s achievement, and therefore their life trajectories, a focus is needed on the specific children and families who are seen in any way as marginalised; children living in poverty, issues around racism (whether structural or more blatant), issues around gender, children with additional or special educational needs and dual language learners. We need to find out what it is that practitioners do and know that contributes to better experiences for these children and their families. There is an alignment here with Recommendation 3; child and parental contributions to what constitutes quality in early childhood, could feed back into specialised training and CPD material (see Figure 6).
1. Introduction

It is widely accepted that quality matters in Early Childhood Education and Care (ECEC). Whilst there is continuing debate about what constitutes quality in this provision and how it could be measured, there is general agreement that ‘well-educated educators’ (Nutbrown 2021, p.3) are a key factor. This report focuses on international research evidence of the relationship between ECEC workforce qualifications and training, the quality of provision, and outcomes and experiences for children and their families.

1.1 Quality of provision

There is consensus that the quality of the ECEC provision young children attend has an impact on their learning, development and early experiences; however, research studies have reported some mixed findings. In England, two prominent studies have reported a relationship between setting quality and outcomes for children. The Effective Provision of Pre-School Education (EPPE) Project (Sylva et al. 2003; 2004; 2010) and the National Evaluation of Sure Start (NESS) (Melhuish et al. 2010) found a small positive association between setting quality and benefits for children, both immediate and longer term. These studies also suggested that the benefits are greater for children from disadvantaged backgrounds. More recently, Blanden, Hansen, and McNally (2017) found a weak association between staff qualifications, setting quality ratings and outcomes for children. The longitudinal Study of Early Education and Development (SEED) which commenced in 2013 in England found no clear evidence of a positive association between the quality of provision children attend between the ages of two and four years and their developmental outcomes at age five and six (Melhuish and Gardiner 2020).

1.2 Measures of quality
In ECEC policy, quality is frequently cited but rarely defined (Cottle and Alexander 2012) whereas in research and academic literature, quality tends to be measured by scales of process and structure quality (e.g. ECERS-R; ITERS-R; SSTEW) and developmental outcomes for children. Measures of structure quality focus on more easily measurable characteristics such as adult-child ratios, staff qualification and training, and group size. These features are thought to support process quality, which is measured through observational rating scales and a focus on the activities and interactions taking place at the setting (Early et al. 2018). However, whilst environment rating scales are well established and widely recognised tools, quality remains a contested construct in ECEC. Mathers, Roberts, and Sylva (2014) argue that the Environment Rating Scales sit within objectivist, positivist traditions, aiming to standardise quality and developmental outcomes for children and thus, do not account for the contextual nature of quality and the differing views of diverse stakeholders. Hence, dominant discourses around what constitutes quality have been challenged (Elwick et al. 2018; Jones et al. 2016). Cottle and Alexander (2012) argue that developmental outcomes are too often framed by national assessment scores which focus heavily on cognitive aspects of development and educational attainment. Quality assurance in England is undertaken solely by Ofsted and has, arguably, become a ‘performative’ concept (Payler and Davis 2017). Other quality measures, such as parent surveys or peer review, are recognised in many OECD countries but in reality, are afforded little status or value (OECD 2015).

1.3 ECEC practitioner qualification and outcomes for children

ECEC provision and its workforce in England is diverse; the sector comprises a rich variety of private, voluntary, independent, and state funded settings offering centre-based and home-based provision. However, within this mixed economy of ECEC provision, workforce qualifications vary widely, including unqualified staff, those with National Vocational Qualifications at levels 2, 3 and 4 or equivalents, and graduates with and without teaching qualifications; generally, ECEC is not
considered a profession. Between 1998 and 2010, the Labour Government, invested heavily in ECEC and several initiatives in England promised to upskill the ECEC workforce. Apprenticeships and part-time distance learning courses have become commonplace in the sector, enabling practitioners to work and study and blurring traditional views of ‘preservice’ or ‘initial’ training as typical qualification pathways. In 2012, Nutbrown called for much needed clarity and rigour to the confusing system of qualifications.

The Early Years Workforce Strategy (DfE 2017) recognised the positive impact that graduates with specialist training made on quality issues. Further studies have found that better qualified staff teams, particularly those with a graduate practitioner, provide higher quality provision (as measured by ECERS-R), particularly for language and communication, early literacy, reasoning, and mathematical skills (Mathers et al. 2011). Higher quality ECEC provision has been found to be positively associated with children’s attainment and progress throughout primary school (Sylva et al. 2011). Bonetti and Blanden (2020) also found a small positive association between the presence of graduate level staff and 5-year-olds’ attainment on the Early Years Foundation Stage Profile (DfE 2018) although they do note that improved outcomes were modest.

1.4 Continuing Professional Development (CPD)

Appropriate and high-quality CPD is considered essential to support practitioners in meeting the learning and development needs of young children (Nutbrown 2021). Through this medium, practitioners can update their knowledge and skills thus enhancing the quality of provision they offer. However, CPD refers to a wide range of interventions, courses, workshops, coaching and mentoring, which vary in duration and cover a myriad of ECEC topics and issues. Training is provided by a combination of state funded and commercial organisations, yet there is little external evaluation and claims made about effectiveness are not always substantiated. Hence there is a need for empirically based research to inform what constitutes high-quality, or effective CPD (Buysse et al.
Whilst many practitioners in the UK have access to some CPD, others do not, and it is often under-resourced (Bonetti 2020).

1.5 The nexus of staff qualification and training, quality of provision, and outcomes for children

The relationship between practitioner qualification/CPD and outcomes for children is an indirect one. The OECD stresses that better outcomes for children are fostered by the staff team’s capacity to create a positive learning environment; qualification alone may not guarantee quality (OECD 2012). Attainment of a qualification or attendance at a CPD course may not necessarily make a difference, but rather, it is the process of gaining a deeper understanding of children’s development and knowledge of how to effectively apply it in practice that counts (Nutbrown 2012). Engagement with the course content must lead to changes in practitioner knowledge, which must in turn lead to changes in setting practice in order to impact on children’s experiences and development (see Figure 1). Calls have been made for careful evaluation of course content and structure (Buysse et al. 2009; Nocita et al. 2020; Nutbrown, 2012).
The relationship between staff qualification/training and outcomes for children is an indirect one; measures of outcomes of children’s experiences, learning and development are nuanced and complex. Research evidence from the UK, across all these areas, has produced mixed findings and is ambiguous; thus, a review of international research evidence is needed. The review of literature which this paper reports upon responds to the following research questions:

1. What does international research evidence tell us about the impact of staff qualifications and training:
   i. on young children’s experiences of ECEC?
   ii. on young children’s development and learning outcomes, long term and short term?
   iii. on families’ experiences, long term and short term?

2. What are the implications of that evidence for policy makers and sector leaders in England?
This report does not offer definitive answers to these questions; however, what it offers is a synthesis of existing systematic reviews and meta-analyses, comparing the evidence from international studies. It provides an overview of where previous reviews have reported similar or differing conclusions.

2. Methods

2.1 The research design

The research design (see Figure 2) focused on procedures for systematic reviews informed by the Evidence for Policy Practice Information and Co-ordinating Centre (EPPI-Centre) (Gough et al. 2017).

![Figure 2: Overview of the research design and procedure](image)

The aims of all methodological decisions were to:

- identify, analyse and synthesise international evidence on the impact of staff qualifications/training on young children’s experiences of ECEC, on young children’s development and learning outcomes, and on the experiences of families,
• identify specific elements of training/qualifications which may impact on young children’s experiences of ECEC, on young children’s development and learning outcomes, and on the experiences of families,
• critically evaluate the evidence found,
• make recommendations for policy makers and sector leaders.

2.2 Search strategy

Search terms were selected by isolating the key terms from the research question and then collecting synonyms drawn from academic literature and professional knowledge. We also consulted a research librarian specialising in systematic reviews, referred to the British Education Thesaurus and drew on the terminology of the DCEDIY Early Years Recognised Qualifications (2016) and the CACHE Early Years Progression map (n.d) to find further key terms. The search terms were then shared with TACTYC who suggested additions. A pilot search was carried out to refine the search terms. The final search strategy can be seen in Appendix 1. Internationally published literature, written in English, was searched using EBSCO (which includes ASC, BEI, ERC and ERIC) and SCOPUS. The search took place in October 2020 and fields included were titles, abstracts and keywords. Publications were limited to those published between 2002-2020. The publication search began after 2001, to coincide with the publication of the pivotal document from the OECD, Starting Strong (2001). After the search window closed, database alerts were set up to track any newly published articles.

2.3 Inclusion and exclusion criteria

All titles and abstracts from the initial search were screened to remove duplicates and ‘red herrings’ (clearly unrelated to the research question). All remaining articles were then divided between the members of the research team who screened by reading the title and abstract and sorting according to the inclusion and exclusion criteria in Table 1 below.

Table 1: Inclusion and Exclusion criteria
2.4 Screening

In total we carried out four stages of screening as indicated in Table 2 and Table 3 below.

**Table 2: Stage 1 and Stage 2 of the screening process**

<table>
<thead>
<tr>
<th>Screen</th>
<th>Purpose</th>
<th>Carried out by…</th>
<th>Moderation process</th>
<th>No. of papers removed from final search result (n=18579)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remove duplicates and red herrings. Each article marked as Include/Exclude. Any uncertainty, article marked as Include.</td>
<td>Research assistant</td>
<td>Wider research team checked sample of decisions (n=100). All decisions confirmed by at least two moderators.</td>
<td>n=14176 (4403 remaining)</td>
</tr>
<tr>
<td>2</td>
<td>Review title and abstract against inclusion/exclusion criteria. (Full paper could be viewed if more clarification was required)</td>
<td>All Research team</td>
<td>Pre-screening moderation exercise undertaken. Post-screening all titles and abstracts reviewed by 2 researchers.</td>
<td>n=3788 (615 remaining)</td>
</tr>
</tbody>
</table>

At this stage in the research process (see step 6 in Figure 2) a decision had to be made regarding which articles to take forward for data extraction. Therefore, all remaining articles (n=615) were coded as below:

- **CPD:** any training completed whilst already in practitioner role; does not necessarily lead to a qualification (but may); training which enhances practice
- **Int:** An intervention or programme (that included practitioner training); introduced to bring about change
- **MC:** involves mentoring or coaching for practitioners
- **NQ:** involves studying for a qualification that is recognised by a quality assurance body

We also coded to identify the type of study:

- **CS:** correlation study with variables measured and statistical relationship assessed
- **E:** experimental study testing a hypothesis, manipulating an independent variable, and measuring a dependent variable
- **ER:** evaluation or report of a large-scale programme
• QA: qualitative account; primarily a piece of reflection by practitioner/researcher
• R: review (including systematic reviews; critical reviews; meta-reviews)
• RCT: Randomised Controlled Trials where children or adults were randomly assigned to groups: one (experimental group) receives an intervention, and one (control group) does not.

After categorisation in this way, two options were discussed to decide which articles to take forward for analysis.

**Option 1** – An umbrella review of systematic and non-systematic reviews of literature and research. We believed this approach would offer broad insights into the impact of staff training and qualifications on outcomes and experiences for children and families across all categories (CPD, interventions, mentoring and coaching, and staff qualification levels) and include both qualitative and quantitative studies using various methods. An additional benefit of this approach was its originality.

**Option 2** – We also considered a focus on articles that evaluated the impact of staff qualification levels (as recognised by a national body). However, our screening highlighted that, in many of these articles, staff qualification level was one of multiple quality measures, or that the impact was mentioned as a secondary or peripheral finding, rather than being the main focus of the study. The team also felt that the criteria for efficacy, against which the impact of staff qualification was measured, were, in many cases, constraining or questionable. In consultation with TACTYC, we proceeded with **Option 1**. and sought guidance from literature on umbrella reviews (Aromataris et al. 2015).

At the outset of the Data Extraction process a further screening (see Table 3) now took place to ensure the quality and suitability of 39 papers which defined themselves as reviews in their title or abstract. This identified 14 papers which were either scant overviews of the literature, unavailable to the team or without a meaningful focus upon all the inclusion criteria. This left us with 25 papers for the final data extraction and analysis.
Table 3: Stage 3 and Stage 4 of the screening process

<table>
<thead>
<tr>
<th>Screen</th>
<th>Purpose</th>
<th>Carried out by…</th>
<th>Moderation process</th>
<th>Papers taken forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>All included articles categorised.</td>
<td>Three members of research team</td>
<td>Initial and final moderation meeting</td>
<td>39 (identified as reviews)</td>
</tr>
<tr>
<td>4</td>
<td><strong>Screen 4:</strong> Confirmation of quality and suitability</td>
<td>Two members of the research team</td>
<td>Moderation of decisions made about all reviewed articles and all removed articles</td>
<td>25 (a further 14 were excluded through this process)</td>
</tr>
</tbody>
</table>

2.5 Data extraction

The research team collaboratively designed a data extraction proforma (see Appendix 2) and then worked individually to extract the required information and complete an assessment of quality. This final report includes data extracted from 25 articles; Figure 3 illustrates how this final number was obtained. Appendix 3 lists the full 25 papers with their references.
Figure 3: Flow diagram to illustrate the elimination process
Following the moderation of the data extraction process, all key information from the remaining articles was collated on a central spreadsheet; this included:

- Context
- Geographical range
- Search dates
- No. of papers included
- Age of children
- Relevance and transparency of inclusion/exclusion criteria
- Search engines used
- Clear methods used to combine findings outlined
- Conclusions supported by data
- Consideration of limitations
- Confidence in rigour
- Key findings

2.6 Types of studies

The 25 included articles comprised of systematic reviews (n=5); critical reviews (n=6); meta- analyses (n=7); systematic reviews with meta-analysis (n=2); reviews (n=2); review with meta-analysis (n=1); content analysis (n=1), and analysis of results from seven data sets (=1). Thirteen focused on CPD, 9 focused on qualifications and 3 focused on both CPD and qualifications. Dates of publication spanned from 2003 to 2021. Authors were writing from the context of eight different countries (USA; Germany; Spain; Australia; The Netherlands; Denmark; Canada; Sweden) and reviewed literature from twelve different countries (USA; Canada; Germany; UK; Switzerland; Belgium; Israel; Australia; Denmark; Netherlands; France; Wales). The dates of searches spanned from 1980 to 2018 and a total of over 746 papers had been reviewed with a predominant focus on children aged birth to seven years.
2.7 Quality appraisal

Quality appraisal was carried out as part of the data extraction process and then moderated. Each researcher recorded key information to support a judgement in terms of confidence in rigour (see Appendix 2) and recorded as:

1: low (n=5)
2: low/medium (n=3)
3: medium (n=6)
4: medium/high (n=7)
5: high (n=4)

All decisions can be seen in Appendix 3. Papers recorded as low often had key information missing such as search dates, number of papers reviewed and unclear exclusion/inclusion criteria whereas papers recorded as high were deemed to have all necessary elements stated explicitly including limitations.

2.8 Analysis

The analysis of the data was done thematically using Nvivo software; it involved two members of the research team and included the steps set out in Figure 4.
Figure 4: Steps in analysis

Figure 5 sets out the nodes (Nvivo terminology for codes) which were used in the analysis. These codes were then grouped into the following themes:

- Training and qualifications
- Children’s experiences
- Children’s development and outcomes
- Families’ experiences
3. Findings

The evidence reviewed reported on three key areas and their impact:

- ECEC practitioners’ general level of education
- Specialist ECEC qualifications/training
- In-service CPD

Many studies presented findings relating to impact at practitioner and setting level (as measured by tools such as Early Childhood Environment Rating Scale; Classroom Activities Questionnaire; Classroom Assessment Scoring System; Early Language and Literacy Classroom Observation). These findings are noteworthy because such measures of quality are concerned with children’s experiences of their setting. Other studies reviewed reported outcomes at child level (i.e., measurable changes in children’s skills and learning).
3.1 Qualification and Training

3.1.1 Practitioner level of education

Table 4: Papers examining the impact of practitioner levels of education.

<table>
<thead>
<tr>
<th>Paper reference</th>
<th>Geographical range</th>
<th>Positive association between higher qualification and impact?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manning et al. (2017)</td>
<td>Not clear</td>
<td>Yes</td>
</tr>
<tr>
<td>Whitebook (2003)</td>
<td>Not clear</td>
<td>Yes</td>
</tr>
<tr>
<td>Fuller et al. (2005)</td>
<td>USA</td>
<td>If including specialised training</td>
</tr>
<tr>
<td>Edie (2007)</td>
<td>USA</td>
<td>Yes</td>
</tr>
<tr>
<td>Manning et al. (2019)</td>
<td>Not clear</td>
<td>Yes</td>
</tr>
<tr>
<td>Falenchuk et al. (2017)</td>
<td>Canada and worldwide</td>
<td>Small positive association</td>
</tr>
<tr>
<td>Early et al. (2007)</td>
<td>USA</td>
<td>No evidence</td>
</tr>
<tr>
<td>Eckhardt and Egert (2020)</td>
<td>USA, Canada, Germany, UK</td>
<td>If including specialised training</td>
</tr>
<tr>
<td>Connor et al. (2014)</td>
<td>USA</td>
<td>Yes</td>
</tr>
<tr>
<td>WWC (2016)</td>
<td>USA</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Ten papers examined the relationship between practitioner levels of education and impact including quality of provision (setting level), teacher behaviours (practitioner level) and children’s developmental gains (child level) (see Table 4). Research which focused on children’s developmental gains was particularly limited. Nine studies found a positive association between higher qualifications and the quality of provision although two of these studies noted that early childhood specialism was a factor. WWC (2016) found that graduates had positive effects on mathematics achievement and potentially positive effects on science achievement for students in grades pre-K–12. However, the focus of this study was a specific, highly selective training programme, Teach For America (TFA).

In summary: There is a small positive association between practitioners with higher levels of education and the quality of provision; evidence of impact at child-level was limited.

3.1.2 Specialist qualification and training

Six papers offered evidence for specialist qualifications and impact (see Table 5) in terms of quality outcomes. Practitioners with ECEC degrees or child development certificates were found to engage in more positive interactions. This is noteworthy as these interactions can result in better language and social outcomes for children. One review found few significant associations between cognitive outcomes (receptive vocabulary, mathematics, letter identification, language and social skills) and educators’ early childhood specialisation and one found virtually no association between educator
early childhood specialisation and children’s language skills, positive behaviours, and approaches to learning.

**In summary**: On balance, the evidence suggests a positive association between specialist ECEC qualifications and the quality of provision including adult-child interactions. Whilst the effect size was small, there was some evidence that specialist ECEC qualifications were linked to specific developmental outcomes for children.

**Table 5: Impact of specialist ECEC qualifications and training**

<table>
<thead>
<tr>
<th>Paper reference</th>
<th>Geographical range</th>
<th>Positive association between early childhood specialism and impact?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitebook (2003)</td>
<td>Not clear</td>
<td>Yes: Quality outcomes; positive interactions; language outcomes</td>
</tr>
<tr>
<td>Fuller et al. (2005)</td>
<td>USA</td>
<td>Yes: Quality outcomes; Positive interactions</td>
</tr>
<tr>
<td>Early et al. (2007)</td>
<td>USA</td>
<td>Little evidence</td>
</tr>
<tr>
<td>Eckhardt and Egert (2020)</td>
<td>USA, Canada, Germany, UK</td>
<td>Yes: Quality outcomes</td>
</tr>
<tr>
<td>Connor et al. (2014)</td>
<td>USA</td>
<td>Yes: Quality outcomes</td>
</tr>
<tr>
<td>Nocita et al. (2020)</td>
<td>USA</td>
<td>Very few positive associations reported</td>
</tr>
</tbody>
</table>

### 3.1.3 Continuing Professional Development (CPD)

Sixteen articles (see Table 6) addressed the impact of CPD; this is positively associated with the quality of the learning environment and aspects of children’s learning and development although there is some difficulty in comparing findings due to the diverse measures used. There is a small positive association between CPD and outcomes for children although the relationship is indirect.

**Table 6: Impact of CPD**

<table>
<thead>
<tr>
<th>Paper reference</th>
<th>Impact at child/practitioner/setting level?</th>
<th>Positive association reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snell et al. (2013)</td>
<td>Learning environment / practitioner level</td>
<td>Yes</td>
</tr>
<tr>
<td>Schachter (2015)</td>
<td>Child/practitioner level</td>
<td>Yes</td>
</tr>
<tr>
<td>Jones et al. (2019)</td>
<td>Children’s physical activity</td>
<td>Less than half studies showed impact</td>
</tr>
<tr>
<td>Gupta and Daniels (2012)</td>
<td>Child level</td>
<td>Yes</td>
</tr>
<tr>
<td>Piasta (2016)</td>
<td>Child/setting level</td>
<td>Yes</td>
</tr>
<tr>
<td>El-Choueifati et al. (2012)</td>
<td>Child level and practitioner level</td>
<td>Yes</td>
</tr>
<tr>
<td>Egert et al. (2018)</td>
<td>Child/setting level</td>
<td>Yes</td>
</tr>
<tr>
<td>Kingsley et al. (2020)</td>
<td>Practitioner level</td>
<td>Yes</td>
</tr>
<tr>
<td>Jensen and Rasmussen (2019)</td>
<td>Child level</td>
<td>Yes</td>
</tr>
<tr>
<td>Markussen-Brown et al. (2016)</td>
<td>Child level, practitioner level and setting level.</td>
<td>Yes</td>
</tr>
<tr>
<td>Joo et al. (2020)</td>
<td>Child level</td>
<td>No impact</td>
</tr>
<tr>
<td>Fernandez et al. (2015)</td>
<td>Practitioner/Child level</td>
<td>Some impact</td>
</tr>
<tr>
<td>Connor et al. (2014)</td>
<td>Practitioner / learning environment</td>
<td>Yes</td>
</tr>
</tbody>
</table>
The impact of coaching

The delivery method of CPD varies widely and may include various combinations of workshop, coursework, online and distance training, peer support, assignments, and onsite individual support. One approach, prominent in the literature, was coaching. Coaching is ongoing, personalised, and interactive; it is often provided onsite. The practitioner is supported to reflect on, and develop, an element of practice. The efficacy of coaching as an element of, or the primary approach to, CPD was addressed in seven of the included studies. However, evidence of impact on children’s learning and development was inconclusive.

Duration and intensity

A mixed picture was portrayed regarding the optimal duration and intensity of CPD models. Whilst Jensen and Rasmussen (2019) found that higher intensity courses were not linked to children’s outcomes, this was not reflected in other studies. Markussen-Brown et al. (2016) found that intensity (additional hours of training) had a positive effect on the quality of learning environments and they also noted that coaching needs to be sustained over a longer period to be effective. Similarly, Egert, Fukkink, and Eckhardt (2018) found that a duration of more than 45 hours was most likely to produce improvements to the quality of the early learning environment.

In summary: CPD is positively associated with the quality of the learning environment and enhanced developmental outcomes for children. CPD that is sustained over time may further enhance outcomes. Coaching, as an approach to CPD, has been investigated yet the impact on children’s learning is inconclusive.

3.2 Impact on adult-child interactions

One theme drawn out of our analysis was the quality of practitioners’ interactions with young children, including sensitivity and responsiveness. CPD, practitioner education and early childhood specialism can all have a positive impact in this area.

Table 7: Practitioner interactions with young children

<table>
<thead>
<tr>
<th>Eckhardt and Egert (2020)</th>
<th>Learning environment</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khalfaoui et al. (2021)</td>
<td>Practitioner level</td>
<td>Yes</td>
</tr>
<tr>
<td>Author</td>
<td>CPD/Qualification/Specialism</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Edie (2007)</td>
<td>Qualifications/Specialism</td>
<td></td>
</tr>
<tr>
<td>Manning et al. (2017)</td>
<td>Qualifications</td>
<td></td>
</tr>
<tr>
<td>Whitebook (2003)</td>
<td>Qualifications/Specialism</td>
<td></td>
</tr>
<tr>
<td>Fuller et al. (2005)</td>
<td>Qualifications/Specialism</td>
<td></td>
</tr>
<tr>
<td>Khalfaoui et al. (2021)</td>
<td>Qualification and CPD</td>
<td></td>
</tr>
<tr>
<td>Fernandez et al. (2015)</td>
<td>CPD</td>
<td></td>
</tr>
<tr>
<td>Kingsley et al. (2020)</td>
<td>CPD</td>
<td></td>
</tr>
<tr>
<td>Fukkink &amp; Lont (2007)</td>
<td>CPD</td>
<td></td>
</tr>
</tbody>
</table>

Higher levels of practitioner education is associated with more sensitive, emotionally warm and stimulating adult-child interactions. Practitioners with a higher-level degree with specialist ECEC training were more sensitive and less detached than those with lower-level qualifications.

Two reviews, focused on the effects of CPD for children’s mental health and positive behaviour, found that individualised training for practitioners was effective (Fernandez et al. 2015) and that interventions could be taught to practitioners to promote positive mental health in children (Kingsley et al. 2020). In classrooms where practitioners had received training on promoting prosocial behaviours, fewer conflicts were reported (Khalfaoui 2021). One study (Fukkink and Lont 2007) commented on a specific paper that convincingly demonstrated that practitioners were able to ‘intensify’ (p. 304) children’s play through their interactions following CPD training. However, it is notable that this was the only reference to play that we found in our review.

**In summary**: The review of evidence indicates that higher-levels of education, specialist ECEC qualifications and focused CPD can have an impact on practitioner capacity to engage in more sensitive and responsive interactions with children.

### 3.3 Impact on children’s learning and development

#### 3.3.1 Cognitive outcomes

Fifteen studies reported findings relating to cognitive outcomes for children (see Table 8). Measurement instruments varied widely; one study (Falenchuk et al. 2017) reported outcomes from 59 different measurement instruments, other studies reported outcomes from bespoke instruments and some reported general findings without specifying the instruments used. The most reported instruments were the Woodcock-Johnson tests and Peabody Picture Vocabulary Test (PPVT). The heterogeneity of studies and measures used produced some mixed findings. It should be noted that
there was some overlap between papers in the studies reviewed, meaning that the same data were reported more than once.

**Table 8: Impact on cognitive outcomes for children**

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Focus</th>
<th>Outcomes addressed</th>
<th>Impact?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jensen &amp; Rasmussen (2019)</td>
<td>CPD</td>
<td>Cognitive (maths and literacy outcomes), Behaviour</td>
<td>Positive effect</td>
</tr>
<tr>
<td>Gupta &amp; Daniels (2012)</td>
<td>CPD</td>
<td>Early Literacy</td>
<td>Picture naming, alliteration, and rhyming</td>
</tr>
<tr>
<td>Markussen-Brown et al. (2017)</td>
<td>CPD</td>
<td>Receptive language, phonological awareness, alphabet knowledge</td>
<td>Small positive association with receptive vocabulary</td>
</tr>
<tr>
<td>El-Choueifati et al. (2012)</td>
<td>CPD</td>
<td>Language comprehension, literacy</td>
<td>Significant improvements with PPVT scores and phonological awareness skills</td>
</tr>
<tr>
<td>Piasta (2016)</td>
<td>CPD</td>
<td>Early Literacy</td>
<td>Variable</td>
</tr>
<tr>
<td>Egert et al. (2018)</td>
<td>CPD</td>
<td>Language and literacy scores; social–behavioural ratings; assessment of cognition, maths</td>
<td>Modest</td>
</tr>
<tr>
<td>Joo et al. (2020)</td>
<td>CPD</td>
<td>Cognitive abilities, pre-academic skills, socio-emotional outcomes.</td>
<td>No statistical significance</td>
</tr>
<tr>
<td>Schachter (2015)</td>
<td>CPD</td>
<td>Literacy; Maths; (this was a review of CPD rather than outcomes of CPD)</td>
<td>Unclear</td>
</tr>
<tr>
<td>Early et al. (2007)</td>
<td>Qual</td>
<td>Language; pre-reading; maths</td>
<td>Little evidence</td>
</tr>
<tr>
<td>WWC (2016)</td>
<td>Qual</td>
<td>English language; arts achievement</td>
<td>No significant association with language</td>
</tr>
<tr>
<td>Nocita et al. (2020)</td>
<td>Qual</td>
<td>Early literacy; language; maths</td>
<td>Specialist early childhood training positively associated with cognitive outcomes (but not language)</td>
</tr>
<tr>
<td>Falenchuk et al. (2017)</td>
<td>Qual</td>
<td>Cognitive outcomes; language outcomes; mathematics outcomes</td>
<td>Some significant (and positive) associations with general cognitive outcomes; little of significance with language skills, literacy and maths.</td>
</tr>
<tr>
<td>Fuller et al. (2006)</td>
<td>Qual</td>
<td>Language</td>
<td>A single study reported positive associations with vocabulary, story and print concepts and language comprehension</td>
</tr>
<tr>
<td>Connor et al. (2014)</td>
<td>Both</td>
<td>Early Reading outcomes for children at risk of reading difficulties</td>
<td>One study that found that specialised early childhood training was associated with better outcomes in reading.</td>
</tr>
</tbody>
</table>

**General cognitive outcomes and children’s academic test scores**

As discussed in 3.1.1., the findings suggest that practitioner general level of education has limited impact on measures of cognitive outcomes (child level). Exceptions were the studies of Whitebook.
(2003), who presented findings suggesting that pre-schoolers who attend settings with a higher proportion of trained caregivers achieved greater cognitive test score gains than those cared for by less-trained staff. In addition, two studies (Falenchuk et al. 2017; Fuller, Llvas, and Bridges 2006) reported an association between practitioner level of education and children’s school readiness scores, as measured by standardised assessments such as the Bracken School Readiness Assessment (which tests children’s knowledge of colours, letters, counting and numbers, size, comparisons and shape). Both reported some positive associations, although Falenchuk et al. (2017) included one study that reported a negative association.

Both Whitebook (2003) and Nocita et al. (2020) indicate that specialist early childhood training is positively associated with cognitive outcomes for children and that CPD which focused on cognitive domains was found to have an overall positive effect.

**Language Development**

CPD that focused on language and communication was associated with a small positive association with children’s receptive vocabulary (Markussen et al. 2016) and significant improvements with scores on the PPVT and phonological awareness skills (El-Choueifati et al. 2012). One study (Gupta and Daniels 2012) found that the duration and nature of the CPD were linked with children’s gains in picture naming, alliteration, and rhyming, but that the coaching element of the CPD did not lead to additional gains. Overall, the evidence reviewed suggests that aspects of children’s language development can be enhanced through language and literacy focused CPD.

In terms of both practitioner level of education and specialist qualifications, the reviewed studies show a mixed picture for children’s language development. Some found no significant association and others reported positive associations (see Table 8). Overall, the findings suggest a mixed picture of the link between practitioner qualification and children’s language development.

**Early Literacy and Reading**

Four of the reviewed papers examined the association between literacy focused CPD and gains in children’s early literacy skills (Connor et al. 2014; Gupta and Daniels 2012; Markussen et al. 2016; Piasta 2016). All four studies found a positive association using various measures. Furthermore,
Connor et al. (2014) found that CPD interventions resulted in early reading gains for children perceived to be ‘at risk of poor reading outcomes’ (p. vii).

Regarding the association between practitioner education/specialist qualification and gains in children’s early literacy skills, again, a mixed picture emerged. In one meta-analysis (Early et al. 2007) of six studies including a prereading measure, three reported a positive association with practitioners holding a bachelor’s degree and three studies found no association. Elsewhere, children’s early literacy outcomes were not associated with specialist early childhood qualifications (Nocita et al. 2020). Positive associations were found between teacher level of education and children’s story and print concepts (Whitebook 2003) and it was noted in one study included in Connor et al. (2014) that teachers with more education tended to increase their use of book-focused statements during shared book reading events.

**Maths**

In relation to measures of maths outcomes, there were contradictory findings. Three meta-analyses (with considerable overlap in included studies) reported both positive associations and no association between practitioner education level or EC specialism and children’s maths scores (Early et al. 2007; Falenchuk et al. 2017; Nocita et al. 2020). Two studies in the evaluation of the Teach for America programme (WWC 2006) showed a positive effect on maths achievement that was statistically significant.

**In summary:** Overall, the evidence does not suggest a significant positive association between practitioner level of education and cognitive outcomes. Positive associations between specialist ECEC qualifications and specific cognitive outcomes were reported but were inconsistent. We found evidence that focused CPD was positively associated with children’s language and aspects of early literacy development.

**3.3.2 Social and emotional development**

Jensen and Rasmussen’s meta-analysis of European studies on the impact of CPD (2018) strongly points to a positive effect on child outcomes for socio-emotional measures. Three studies included in their meta-analysis report that CPD interventions led to a reduction in children’s negative behaviours, one study reported positive impacts for children’s self-regulation and one study found that 3–6-year-old children’s self-esteem and behavioural stability were positively affected by the CPD intervention. Similarly, a review of seven studies on the impact of ‘Teacher-Child Interaction
Training’, a classroom-based teacher training protocol to manage children’s disruptive behaviour (Fernandez et al. 2015), reported that four of the seven studies found a decrease in disruptive behaviour, one study found no impact and two did not report child-level outcomes. The authors conclude that the programme is a promising intervention.

The evidence of the impact of practitioner qualification on children’s social and emotional development was limited with little detail of the measurements used; our findings are inconclusive. Falenchuk et al. (2017) reported only a small association between practitioner education level and children’s social-emotional development, and mixed results for the association between practitioner education and children’s positive behaviour. One study reported by Fuller, Livas, and Bridges (2006) suggested that teacher credentials did not have a significant effect on measures of children’s social development; the study suggested that what mattered most was family background. A small association was found between specialist early childhood qualifications and children’s social skills by Nocita et al. (2020); this corresponds with the findings of Whitebook (2003) who reported that, in terms of practitioner facilitation of children’s social and emotional development, specialist Early Childhood training accounted for ‘most of the variance in predicting teacher behaviour’ (p. 7).

As our synthesis of evidence strongly suggests that practitioners holding higher level and specialist Early Childhood qualifications engage in more sensitive and responsive interactions with children, it is unclear why these positive associations are not reflected in measures of children’s social and emotional development. However, very limited information was available about the instruments and measurements used.

**In summary:** CPD interventions have been found to have a positive impact on children’s levels of self-esteem and self-regulation. Practitioners with specialist ECEC qualifications engage in practices that are considered to promote children’s social and emotional development.

### 3.3.3 Children’s health and physical development outcomes

Across the articles reviewed for this report, there was minimal attention given to impacts on children’s physical health and development. In a critical review of childcare physical activity interventions including a CPD element (Jones et al. 2019), only 44% of the studies showed significant changes in children’s physical activity at the end of the intervention. However, one of these studies reported significant changes in fitness levels between the intervention group and the control group, and four studies reported a positive impact on children’s physical activity levels one year after the intervention ended. Jones et al. (2019) note low confidence and competence amongst practitioners
in the area of physical activity and suggest that CPD needs to be a priority. In Schachter’s (2015) review of CPD in ECEC, only one of the seventy-three included studies focused on children’s health; the results were not reported. In Falenchuk et al’s review and meta-analysis of practitioner education and child outcomes (2017), only two of the thirty-nine included studies reported the relationship between practitioner education and child physical development outcomes, neither of which showed a significant association.

**In summary:** Scant attention has been paid to the impact of practitioner qualification and training on children’s health and physical development. One critical review suggests that CPD interventions promoting children’s physical activity may have positive outcomes.

### 3.3.4 Impact for inequalities

Only four of the papers reviewed where concerned with explicitly addressing any form of inequality which included children’s mental health (Kingsley et al. 2020), communication and language difficulties (El-Choueifati et al. 2012), reading difficulties (Connor et al. 2014) and behaviour disorders (Fernandez et al. 2015). Three further articles presented findings on the differential impact of practitioner qualification for economically disadvantaged children. Nocita et al. (2020) and Early et al. (2007) drew on overlapping data sets to present evidence that tentatively suggests that disadvantaged children may make better progress with practitioners holding a specialist ECEC qualification. However, Falenchuk et al. (2017) reported no such association.

### 3.4 Impact on the experiences of families

Very little literature examined impact on outcomes and experiences for families. There were only two references and neither of these were papers which focused on parents; one had as it focus children’s mental health (Kingsley et al. 2020) and the other, teacher-child interactions (Fernandez et al. 2015) in both early years settings and schools for children with behavioural difficulties. Fernandez et al. (2015) highlight one study that, following teachers’ engagement with training to enable them to promote prosocial behaviour, found that parents noticed positive behaviours in the home context. Kingsley et al. (2020) found evidence that CPD which supports working with families led to
greater parental involvement. Their paper reviewed interventions to support young children’s mental health and found evidence that this could impact positively on parenting skills.

**In Summary:** Our review found very little attention had been paid to the relationship between practitioner qualification and training and outcomes and experiences for families.

### 4. Tensions, contradictions, and difficulties

#### 4.1 More questions than answers

Early et al. (2007) recommend caution when interpreting findings which only show a weak correlation between practitioner qualifications and children’s outcomes. They emphasise the skill and knowledge needed to provide important learning environments for young children and suggest that such research ‘raise[s] more questions than answers’ (Early et al. 2007). In the same vein, Dahlberg, Moss, and Pence (2013) draw on pedagogical work in Reggio Emilia to suggest ‘opening up the possibility of viewing children, early childhood institutions and early childhood pedagogy in new ways- the child and the pedagogue as co-constructor of knowledge and identity’ (p. 130). The tenuous link between well-educated practitioners and measurable improvements spotlights inappropriate measurements of quality and encourages more appropriate ways of considering the value of education and training of those who work with young children.

#### 4.2 Heterogeneity of training programmes

One issue Early et al. (2007) claim affects the ability to measure associations is the heterogeneity of training content in the examined programmes and therefore the quality of the training that the included practitioners have undertaken. Practitioner characteristics, such as age or dates of training, are not included as variables so that it is impossible to measure like with like; training programme characteristics, such as content or placement experiences, were also not included. Early et al. (2007) also suggest that policies which demand graduate and/or specialised qualifications for early...
childhood practitioners are meaningless if there is no process in place which can identify practitioners with the necessary skills and if these practitioners, once identified, are not supported in their professional development.

4.3 Quality of CPD

Although there was some evidence that CPD can impact positively on outcomes for children, questions must be asked about the quality of this training. Jones et al. outline the limitations of the predominance of face to face training which can merely comprise of delivering knowledge and which fails to meet the requirements of its intended audience (2019). They encourage a consideration of blended approaches which include mentoring and coaching. At the same time, they recognise that very little research has been carried out to date which evaluates the impact of blended models.

5 Implications for policy makers and sectors leaders in England

5.1 Problematising the relationship between practitioner qualification and training and outcomes for children.

The overarching concern for educational policy makers is how to improve educational attainment. The pursuit of research data that provides unequivocal evidence of ‘what works’ in raising immediate and long-term educational outcomes for young children therefore remains one of the challenges. In terms of the impact of staff qualifications and training on outcomes for children, our findings reflect those of other scholars (e.g., Early et al., 2018; Melhuish et al., 2015; OCED, 2018), whilst it is assumed that higher levels of staff qualification contribute to higher quality provision, which in turn promotes children’s development, empirical evidence to support this assumption is scarce. Furthermore, the studies reviewed elucidated how difficult it is to evidence a direct causal relationship. As we carried out our initial literature search, we found that many papers came to an abrupt halt – in that they considered practitioner training and qualifications, but they did not take the second step to consider their impact on outcomes for children. Our review found evidence of a
small but significant relationship between higher-level specialist qualifications and the quality of provision, yet the relationship between quality provision and outcomes for children’s development is nuanced and complex. However, we found convincing evidence of a positive association between focused CPD and quality provision and of some specific outcomes for children.

5.1.1 Acknowledging the bigger picture

Eckhardt and Egert (2020) remind us that the setting must be considered within its context. Establishing the impact of staff qualification and training is complicated by the plurality of variables that influence both the quality of provision (such as group size, staff–child ratios, the physical environment, resources and the culture and leadership of the organisation) and children’s development and learning (such as the diversity of children’s life experiences outside of the early years settings). As the OCED (2018) note, the number of studies that have included or controlled for these aspects is very limited. In addition, unlike children of statutory school age, there is great variation in patterns of attendance in ECEC, where children may attend part-time or may attend multiple settings.

Early et al. (2018) suggest that another possible explanation for the weak association is that the tools used to measure outcomes for children are too narrowly focused and that brief child assessments simply fail to capture the broad range of skills and knowledge that children develop. Our review notes a plethora of different measurement instruments used in research to measure outcomes for children, some standardised and others bespoke. Furthermore, many studies did not specify the instruments used.

Hence, we echo the recent writings of Moss and Roberts-Holmes (2021) who argue that we must resist the desire to measure the impact of quality only through narrow and sometimes dubious measures. These authors critique how words such as ‘outcome’, ‘quality’ or ‘assessment’ “have become taken for granted, used without second thought,” (p. 2). The contentious nature of baseline assessment demonstrates that both practitioners and academics feel uncomfortable about
subjecting young children to quantifiable measures. Easily quantifiable ‘outcomes’ such as scores on picture vocabulary tests, numerical sequencing, or shape rotation tests, for example, may simply not be good and accurate measures of the impact of quality ECEC provision for children.

Shifting the lens toward more nuanced aspects of children’s experiences, our review found strong evidence that staff with higher levels of specialist ECEC qualification engaged in more sensitive and positive interactions with children. These findings echo Munton et al.’s review of international research evidence (2002) which concluded that practitioner qualification was one of several factors that impact on the quality of adult-child interactions in ECEC settings and that it is not possible to isolate and precisely identify the unique effect of qualified staff. Even if this were possible, Fuller et al. (2006) suggest that a failure to capture specific practitioner characteristics in such research is an oversight ‘similar to arguing that Harvard graduates reap success in the job market due to the quality of undergraduate teaching—ignoring how selective Harvard is in admitting outstanding students prior to and independent of their professors’ impact’ (p. 27).

5.1.2 Understanding Barriers to and Enablers of Change

The Model of Change (based on Egert, Fukkink and Eckhardt, 2018) presented in Figure 1 illustrated that the relationship between practitioner qualification and training and outcomes for children is ‘two-steps’ removed. It shows how engagement with training must stimulate change at practitioner level and at setting level in order to affect children’s experiences and learning. At each level, however, there are potential barriers to, and enablers of, change, influencing the potential impact on children’s outcomes and experiences, as shown in the relational model of ECEC change (Figure 6). We propose that this model may be better thought of as cyclical, rather than linear, acknowledging that change in practice at setting level and changes in children’s outcomes and experiences may iteratively stimulate change at practitioner level. Ideally, changes at all levels should then inform course development.
Our review suggests that qualifications and specialised training for the ECEC workforce do indeed matter; children experience more positive relationships with the adults who care for them when those practitioners have higher levels of specialist ECEC qualification and have engaged in focused CPD. We reiterate that practitioner impact is not easily quantified and that measurement instruments used may be too narrow to capture the richness of children’s holistic development.

5.2 A strong and specialised foundation with continuing support and development

5.2.1 A strong and specialised foundation

The positive, albeit small, association found between specialist ECE qualifications and quality of provision would suggest a timely return to the examination of initial training provided for those who work with young children (Nutbrown 2021). This is particularly important if we consider that specialist training is associated with the type of positive adult-child interactions which are so important for young children’s experiences of learning (Slot 2018; Sylva et al. 2004). Findings which focus on the emotionally warm practitioner are noteworthy if current concerns about young children’s mental health and wellbeing are taken into consideration, particularly given the impact of
the Covid-19 pandemic on their lives. The importance of the attuned adult has always been prominent in discussions on quality in ECEC (see for example Mathers et al. 2014). Recent research (Nelinger et al. 2021) which gathered perspectives on children’s wellbeing, following the world events of 2020-2021, note that 42% of practitioners had clearly observed the impact on children’s emotional development and 93% recognised a gap in their own skills and learning of how best to manage this. If we consider this finding alongside the suggestion that, even before the pandemic, the state of happiness of children in the UK is ‘in decline’ (Good Childhood Report 2020), the importance of having early years practitioners who are confident and competent to engage in warm, attuned interactions with young children is a priority. At the same time, it must be recognised that the early years setting is only one part of the context of wider society within which young children thrive or fail to thrive; the impact of provision may not be as uniform as could be assumed given the different circumstances of different families. For example, 4.3 million children in the UK were living in poverty in 2020 with numbers rising to include the impact of the pandemic (Hirsch and Stone 2021).

5.2.2 Continuing support and development

The studies reviewed indicate that there is a small positive association between CPD and outcomes for children, even if the relationship is indirect; we echo Early et al.’s claim that practitioners need the appropriate support to ‘maximise their capacity’ (2007, p. 575). Yet there are issues around the quality of CPD and therefore a need to consider content and duration; these are key elements that would be worthy of further research.

5.3 Missing narratives

The research reviewed has notable gaps; in particular there are research gaps around the areas of play pedagogies, experiences for families, the voice of the child and addressing inequalities.
5.3.1 Play as a pedagogy

A significant gap in the literature exists around play. This is surprising given its importance as a key element of early years pedagogy (Mathers et al 2014; Sylva et al. 2004); its contribution to quality in ECEC appears unnoteworthy within the articles reviewed. In the reviews analysed, there was just one very short reference (Fukkink and Lont 2007). This lack of emphasis highlights how play is neither prioritised in research or policy and is an important exemplification of how a focus on inappropriate measures is not helpful when considering the value of a well-educated workforce in supporting young children in their learning.

5.3.2 Parents and families

Little consideration has been given to the impact of practitioner qualifications and training on experiences of families. This is noteworthy, given the wealth of research that focuses on the importance of this aspect of a practitioner’s role (see for example Sylva et al. 2004). Mathers et al. (2014) noted the importance of engagement with families, drawing on Dalli et al.’s work (2011) which found that settings which encouraged effective parental involvement benefited both the child and the parent in terms of outcomes. A further worrying element of the reviews we examined was that the very limited reference to parents appeared to problematise them (Kingsley et al. 2020) or focus on ‘problematic’ children (Fernandez et al. 2015).

5.3.3 Children’s voice

None of the 25 reviews, or indeed the individual studies (over 764), included any reference to children’s perspectives although it would be reasonable to assume that they would have something important to contribute; elsewhere researchers (see for example Einarsdottir 2007) have endeavoured to capture the child’s perspective of quality in ECEC. As discussed, we considered that many of the studies reviewed only offer a limited understanding of children’s possibilities. In contrast, Dahlberg et al. (2013) cite practitioners (here named pedagogues) who took part in a
project in Stockholm based on the principles of the Reggio Emilia preschools, once the pedagogues began to listen to children:

a new construction of the child and the pedagogue appeared. It was a child that... could concentrate on an activity much longer than the pedagogues’ earlier constructions had said... The children... start saying ‘look what I can do and know’, and the pedagogues are becoming more and more aware of the children’s potentialities – what they actually can do and do do (sic) (rather than what classificatory systems say they should do’ (p. 144).

Dahlberg et al. (2013) argue that this kind of pedagogy, by ‘rejecting the prescription of rules, goals, methods and standards’ acts courageously to construct new, more appropriate, discourses about young children (p. 129). Yet these discourses were not considered in any of the research we reviewed.

5.3.4 Issues of equality, diversity, and inclusion

It is significant that so little of the reviewed literature considers the nuanced being of the child and their family. This fact is evidenced in the minimal research which considers issues of equality, diversity, and inclusion. This may reflect the priorities of funding bodies, policy makers and researchers in the field, and also the socio-cultural context of any research project. However, if ECEC has the potential to address wider societal inequalities, and narratives around ‘closing the gap’ (Urban 2015) are dependable, then it is remarkable that not only did we find very little evidence of this in our reviews, but also that there was little focus on specific inequalities. A review of social inequalities in 32 European countries cites such factors as ‘Neighbourhood deprivation, lower parental income/wealth, educational attainment, and occupational social class, higher parental job strain, parental unemployment, lack of housing tenure, and household material deprivation... as the key social factors associated with a wide range of adverse child health and developmental outcomes’ (Pillas et al. 2014). What incredible pressure to lay at the feet of the poorly recompensed practitioner, to suggest that they can mitigate against all these factors. Yet if we consider the child’s needs and wants as a ‘being’ – in terms of their experiences in the present, rather than
concentrating on their ‘becoming’, in terms of their life trajectories, research into the experiences of young children and their families, with all the nuances of equality, diversity and inclusion such as factors of gender, class, special educational needs and dual language learners, is needed.

6. Conclusion and recommendations

The aim of this report was to examine what international research evidence tells us about the impact of staff qualifications and training on young children’s and families’ experiences of ECEC, and the impact on children’s learning and development outcomes. Indeed, research evidence that helps us understand the factors that contribute to an ECEC environment in which young children can thrive is vital to inform policy at national and local level and to inform parental choice. Yet, whilst acknowledging the significance of large-scale studies, our review of reviews has highlighted the mixed and sometimes contradictory research evidence and surfaced some of the tensions and difficulties of research in this area. This study has not found conclusive evidence that ECEC staff qualifications and training have a significant impact on specific measures of children’s development. However, the importance of specialist ECEC qualifications and focused CPD for enhancing the quality of the early learning environment and nurturing sensitive and responsive adult – child interactions is clear.

The key contributions of this study have come from ruminating on, and problematising, the relationship between practitioner qualifications/training, and outcomes for children. In so doing, we have highlighted the limitations of easily measurable and quantifiable outcomes for children; such measures may simply not capture the intricacies of children’s development. In addition, we present a revised model of change, illustrating that the relationship between qualification/training and developmental outcomes for children is two-steps removed, and that there are multiple barriers to, and enablers of, the improvement of children’s learning experiences. Furthermore, we have
surfaced some of the missing narratives and voices in this field of research. The lack of attention to children’s play, the absence of children’s and parents’ voices, the disregard for issues of wider inequalities in society, such as poverty or special educational needs, raises questions about ‘who’ and ‘what’ research in this area is really for.

6.1 Recommendations

1. To consider a broader range of research methods in evaluating quality in ECEC.

Consideration needs to be given to ways of measuring the impact that practitioner qualifications and training can have on young children and their families in the ECEC setting. This is part of wider conversations about what quality in ECEC looks like and links to a suggestions made by Early et al. (2018) that the tools used to measure outcomes for children are too narrowly focused. In addition, research is required which is able to capture a plurality of variables that influence both the quality of provision (such as group size, staff–child ratios, the physical environment, resources and the culture and leadership of the organisation) and children’s development and learning (such as the diversity of children’s life experiences outside of the early years settings) including their pattern of attendance in ECEC.

2. To include the missing voices of children, their parents and their families in research and policy discussions about quality in ECEC.

The voices of both children and their families are notably absent from the research reviewed; consideration must be given to these voices to develop an understanding of how practitioner qualifications impact on children’s lives. These key voices could provide a more detailed picture of quality in ECEC. It is well documented that parents and families who work closely with the ECEC setting report positive experiences for themselves and for their children; therefore, they should be included in both research and policy discussions of quality. Children’s voices can also provide an important account of what quality means to them in terms of their ECEC experience.
3. To include a greater emphasis on play in research and policy discussions about quality in ECEC.

Play is considered an important pedagogy; therefore, it should have prominence in both research and policy conversations with a specific focus on its impact for both children and their families. Addressing this significant gap in the systematic review literature would contribute to an important understanding of the impact of play pedagogies for learning and development.

4. To include a greater emphasis on equality, diversity and inclusion in research and policy discussions about quality in ECEC.

To compliment narratives around closing the gap in terms of young children’s achievement, and therefore their life trajectories, a focus is needed on the specific children and families who are seen in any way as marginalised; children living in poverty, issues around racism (whether structural or more blatant), issues around gender, children with additional or special educational needs and dual language learners. We need to find out what it is that practitioners do and know that contributes to better experiences for these children and their families. There is an alignment here with Recommendation 2; child and parental contributions to what constitutes quality in early childhood, could feed back into specialised training and CPD material (see Figure 6).

5. To invest in qualifications that are specifically focused on the care and education of babies and children aged 0-5 years, and in ongoing opportunities for relevant CPD.

We join with the call of others (e.g. Nutbrown 2021) for an enhancement of both initial and continuing training to ensure that those working with young children are specialists in the key knowledge that distinguishes an early years practitioner from a general primary teacher; this knowledge should include broad theoretical perspectives of child development and understandings of lived experiences of childhood. Practitioners also require continued opportunities for reflection to enhance their interactions with the unique child and the unique family. It is particularly relevant, given the current situation as restrictions that were imposed by the Covid-19 pandemic are being
lifted, that practitioners can confidently support children in contexts that their training will certainly not have covered. Practitioner reflection should then be used as a means of course development for both initial training and CPD.

**Reference List**

*Indicates included reviews


DCEDICY (Department of Children, Equality, Disability, Integration and Youth) Early Years Recognised Qualifications. Accessed July 9 2021

DfE (Department for Education) 2010. The impact of Sure Start Local Programmes on five year olds and their families.

DfE (Department for Education) 2017. The Early Years Workforce Strategy.


DfE (Department for Education) 2018. Early Years Foundation Stage profile handbook.


* *Early Childhood Education Research Journal* 10.1080/02680939.2017.1416426


* *Fuller, B., A. Llvas, and M. Bridges. 2005. How to Expand and Improve Preschool in California: Ideals, Evidence, and Policy Options. PACE.


* *Ideals, Evidence, and Policy Options* 10.1016/j.ecresq.2007.04.005


* *Fuller, B., A. Llvas, and M. Bridges. 2005. How to Expand and Improve Preschool in California: Ideals, Evidence, and Policy Options. PACE.


* *Ideals, Evidence, and Policy Options* 10.1016/j.ecresq.2007.04.005


Roberts-Holmes, G. 2015. “The 'datafication' of early years pedagogy: 'if the teaching is good, the data should be good and if there's bad teaching, there is bad data.” Journal of education policy 30 (3): 302-315. doi.org/10.1080/02680939.2014.924561


## Appendices

### Appendix 1: Search Strategy

| qualifications | Degree; “qualification levels”; graduates; “foundation degrees”; “Early Childhood graduate”; certificate; diploma; regulatory; “childcare supervision”; level; basic; advanced; competencies; certificate; specialisation; graduate; BA; BSc; Masters; PhD; EdD; postgraduate; BTEC; NVQ; Montessori; Steiner; Froebel; “Early Childhood Studies”; playwork; Portage; |
| staff | “early years practitioner”; practitioner; educator; teacher; “early years teacher”; EYPS; EYP; pedagogue; professional; workforce; Professionalisation; “graduate practitioner”; “childhood practitioner”; “early childhood educator”; “early childhood teachers”; “childcare supervision”; “nursery nurse”; nanny; childminder; “lead practitioner”; “(teaching) assistant”; HTLA; LTA; TA; “family support worker”; |
| training | CPD; “Professional development”; “workforce development”; “staff development”; “staff education”; “professional training”; learning; education; “training of child care workers”; “training of early childhood teachers”; “training of educators”; “education of child care workers”; Instruction; apprenticeships; “workbased training”; |
| Children | Infants; babies; toddlers; pre-schoolers; child; “birth to 5”; 0 to 5; 0-5; 0-8; “birth to 8” |
| ECEC | “early childhood education”; nursery; preschool; pre-school; daycare; childcare; “early childhood education and care”; kindergarten; “early years”; policy; quality; playgroup; pre-primary; pre-elementary; pedagogy; “child care”; setting; provision; |
| Development | Readiness; stages; “developmental stages”; “developmental milestones”; growth; “cognitive development”; academic; social; emotional; intellectual; self-regulation; motor; language; physical; behaviour; memory; mathematical; |
| “learning outcomes” | Progress; achievement; academic results; attainment; “educational outcomes”; outcome; scales; ratings; benefits; test; measure; measurement; ability; |
| families | Parent; sibling; mother; father; brother; sister; relative; family; “hard to reach”; carer; |
Appendix 2: Data Extraction proforma

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**What is the nature and length of the qualification and / or training being reported upon (if information available)?**  
*e.g what was the CPD about or what was the qualification*

**What was the intensity e.g. 2 sessions**

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3: medium  
4: medium/high  
5: high |
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| **List of included studies** | **C&P references of included papers** |
| **Key Findings** |  
Please cut and paste key information from findings/results/discussion/conclusion that could be relevant to our RQs.  
Please highlighting all texts that specifically answer our research questions. |
| **Useful images/tables/figures** |

*Please cut and paste any that will be useful in answering the research question here*

**Appendix 3: The reviewed papers**
## Overview of included studies

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<th>Year</th>
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<td>Snell, M, Forston, O.L., Stanton-Chapman, T.L., &amp; Walker, V.L.</td>
<td>A review of 20 years of research on professional development interventions for preschool teachers and staff.</td>
<td>Early Child Development and Care</td>
<td>2013</td>
<td>CPD</td>
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<td>Systematic review</td>
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<td>Jones, R.A., Sousa-Sá, E., Peden, M. and Okely, A.D.</td>
<td>Childcare Physical Activity Interventions: A Discussion of Similarities and Differences and Trends, Issues, and Recommendations</td>
<td>International journal of environmental research and public health</td>
<td>2019</td>
<td>CPD</td>
<td>AUS</td>
<td>US, Switz. Belgium, Germany, Israel, AUS, Canada, UK</td>
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<td>Physical activity, motor skills.</td>
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<td>Sarika S. Gupta &amp; Janese Daniels</td>
<td>Coaching and Professional Development in Early Childhood Classrooms: Current Practices and Recommendations for the Future</td>
<td>Journal for the Early Childhood Field</td>
<td>2012</td>
<td>CPD</td>
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<td>Piasta, S.</td>
<td>Current Understandings of What Works to Support the Development of Emergent Literacy in Early Childhood Classrooms</td>
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<td>Critical review</td>
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<td>Current research concerning what works for supporting the development of emergent literacy shows that content-specific curricula, emergent literacy best practices, and related professional development all can benefit children's emergent literacy.</td>
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<td>El-Choueifati, N., Pursell, A., McCabe, P. &amp; Munro, N.</td>
<td>Evidence-based practice in speech language pathology training of early childhood professionals</td>
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<td>Evidence-based Communication Assessment and Intervention</td>
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<td>Kingdoyal, R., Sagester, G. &amp; Weaver, L.</td>
<td>Interventions Supporting Mental Health and Positive Behavior in Children Ages Birth-5yr: A Systematic Review</td>
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<td>Joo, Y.S., Magnuson, K., Duncan, G.J., Schildmeier, H.S., Yoshikawa H. &amp; Ziel-Quest, K.M.</td>
<td>What Works in Early Childhood Education Programs? A Meta-Analysis of Preschool Enhancement Program</td>
<td>Early Education and Development</td>
<td>US</td>
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<td>1960-2007</td>
<td>124</td>
<td>350</td>
<td>3.0-5</td>
<td>Quantitative Meta-analysis</td>
<td>The findings led to negative significant effects for preacademic skills and null effects for cognitive abilities or overall outcomes. The number of effect sizes and contrasts were too small to measure effects on behavioral, health, and socio-emotional outcomes.</td>
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<td>WWC (2016)</td>
<td>Teach For America WWC Intervention Report</td>
<td>Teach For America WWC Intervention Report</td>
<td>US</td>
<td>US</td>
<td>1990-2016</td>
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<td>0-12</td>
<td>Quantitative Meta-analysis</td>
<td>The WWC considers the extent of evidence for teachers trained through TFA on the academic achievement of students in grades pre-K-12 to be medium to large for two student outcome domains—mathematics achievement and English language arts achievement—and small for two student outcome domains—science achievement and social studies achievement. There were no studies that meet WWC group design standards in the two other student outcome domains and 11 teacher outcome domains.</td>
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Schachter, R.E. 2015. An Analytic Study of the Professional Development Research in Early Childhood Education Early Education and Development 2015 CPD US US 1995-2012 73 73 0-5 Mixed Content analysis Literacy, SE, Math Medium-High Half of the studies (49%, n=36) reported changes in children’s outcomes related to the implementation of the PD (37 included studies actually recorded child outcomes)

Nocita, G., Perlman, M., McMullen, E., Falenchuk, G., Brunsek, A., Fletcher, B., Kamkar, N. and Shah, P. Early childhood specialization among ECEC educators and preschool children’s outcomes: A systematic review and meta-analysis Early Childhood Research Quarterly 2020 QU Canada US -2018 22 22 2.5-6 Mixed Meta analysis + Review in the META - receptive vocabulary, and the mathematics, also; letter identification, language and social skills High Overall, few significant associations were identified between the eight outcome categories and educator early childhood specialization. A somewhat higher number of significant (and positive) associations were reported between educator early childhood specialization and children’s cognitive outcomes. Virtually no significant associations were identified between educator early childhood specialization and children’s language skills, positive behaviors, and approach to learning. Very few positive associations were identified between educator early childhood specialization and children’s early literacy outcomes and mathematics outcomes.
<table>
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<td>Education of staff in preschool aged classrooms in child care centers and child outcomes: A meta-analysis and systematic review</td>
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<td>39</td>
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<tr>
<td>Fuller, B., Livan, A. &amp; Bridges, M.</td>
<td>How to Expand and Improve Preschool in California: Ideals, Evidence, and Policy Options</td>
<td>2006</td>
<td>US</td>
<td>Not clear</td>
<td>Not clear</td>
<td>Not clear</td>
</tr>
</tbody>
</table>

The studies reviewed here encompass most of the major, high evidence to date suggests that optimal teacher behavior in center-based settings, and the skill and knowledge upon which it rests, are best achieved through a four-year college degree, which includes, in most instances, some specialized content in early childhood education or child development.
<p>| Edie, D. | Making the Grade: Making the Case for Well-educated, Well-trained Teaching Staff in Early Care and Education | A policy brief for Wisconsin Council on children and families | 2007 | QU | US | US | 0-6 | Not clear | Critical review | Teaching quality and learning environments. | Low | Most studies have found that teachers with two- or four-year degrees, combined with specialized training in early childhood development, provide significantly higher levels of quality for children in their care, as measured by positive interactions with children and stimulating learning environments. |
| Early, D., Maxwell, K., Burchinal, M., Alva, S., Bender, R.H., Bryant, D., Cal, R., Clifford, R.M., Ebanks, C., Griffin, J.A., H., Henry, Howes, C., Irurondo-Perez J., Jean, R., Mashburn, A.J., Peisner-Feinberg, E., Pianta, R.C., Vandergriff, N. and Zilli, N. | Teachers' Education, Classroom Quality, and Young Children's Academic Skills: Results From Seven Studies of Preschool Programs | Child Development | 2007 | QU | US | Appears to be mostly US | Not clear | 7 | 7 | 4 | Quantitative | Descriptive/inferential statistics for each of the 7 datasets | Classroom quality and children's academic gain | Medium | Using seven recent, major studies of classroom-based educational programs for 4-year-olds, these analyses, taken together, do not provide convincing evidence of an association between teachers' education or major and either classroom quality or children's academic gains. |</p>
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Findings</th>
<th>Supporting Evidence</th>
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</thead>
<tbody>
<tr>
<td>Connor, C.M., Alberto, P.A., Compton, D.L., O’Connor, R.E.</td>
<td>Improving Reading</td>
<td>This report was prepared for the National Center for Special Education Research, Institute of Education Sciences under Contract ED-IES-12-0-0014.</td>
<td>Teacher training has a positive effect on the classroom climate (Howes et al. 2013; Morris et al. 2013; McNally and Slutsky 2018). Two articles indicated that the school should facilitate continuous ECEC training for teachers. In an experimental study, Morris et al. (2013) showed that teachers who had been trained to promote prosocial behaviours and limit disruptive behaviours had fewer conflicts in their classrooms and made better use of the learning time. Likewise, McNally and Slutsky (2018) reported that teachers’ professional development related to interactions that contribute to emotionally supportive environments translated into fewer discipline-related behaviours and more</td>
</tr>
<tr>
<td>Eckhardt, A.G. and Egertb, F.</td>
<td>Predictors for the</td>
<td>Children and Youth Services Review</td>
<td>Small significant correlation between process quality in FCC and staff educational background and amount of PD</td>
</tr>
</tbody>
</table>
emotionally supportive, 
trust-based behaviours in 
their classrooms.