

REAL Beginnings

An evaluation of the Oldham 0-2 REAL Beginnings project



Dr Kimberley Bell, Stephanie Hargreaves & Professor Anna Theakston

The ESRC International Centre for Language and Communicative Development,
University of Manchester

July 2021

Contents

List of Tables.....	4
List of Figures	5
Acknowledgements.....	6
Executive Summary.....	7
Background to 0-2 REAL Beginnings in Oldham	7
Evaluation aims and methodology.....	7
Key findings.....	7
Conclusions.....	7
1. Introduction	9
1.1 Background to REAL interventions.....	9
1.2 0-2 REAL Beginnings in Oldham	9
1.3 Description of REAL.....	10
2. The Current Project	12
2.1 Introduction.....	12
2.2 Participants.....	12
2.3 Evaluation measures	13
3. Results.....	16
3.1 Family engagement with the programme	16
3.2 Child development measures.....	16
3.2.1 Communication skills	16
3.2.2 Child Development Questionnaire	20
3.3 Home Learning Environment.....	22
3.4 Parental feedback	24
3.5 Practitioner confidence.....	28
3.6 Fidelity to the programme	30
3.7 Practitioner feedback.....	34
3.8 Case studies	36
4. Discussion.....	39
4.1 Child development	39
4.2 Child language and communicative development	39
4.3 Parent behaviours	40
4.4 Parent and practitioner impressions of the programme	41
4.5 Potential areas for focus in the implementation of the programme	41

4.6	A note of caution.....	42
4.6.1	Sample size.....	42
4.6.2	Randomisation issues.....	42
4.6.3	Issues with self-report measures	43
4.6.4	Lack of standardised communicative development measures for EAL children	43
4.7	Overall Conclusions	44
4.8	Next Steps for Oldham's Early Years Services.	44
	References	45

List of Tables

Table 1: Example behaviours & activities to promote pre-literacy via the ORIM framework.	11
Table 2: Demographic information about the participants.....	13
Table 3: Number of home visits and events attended by those in the REAL group.....	16
Table 4: Parental reports of the impact of REAL	25

List of Figures

Figure 1: Mean CDI Gestures scores across groups.....	17
Figure 2: Percentage of children scoring equal or above 25th centile vs. < 25th centile in CDI	17
Figure 3: BTAT scores across groups	18
Figure 4: Percentage of children at or below expected level in Wellcomm	20
Figure 5: Percentage of children at vs. below expected level across the Child Development strands.....	21
Figure 6: Mean HLE scores for the two groups	23
Figure 7: Average HLE scores (out of 16) for the different ORIM behaviours	24
Figure 8: Average HLE scores (out of 16) for the different literacy strands.....	24
Figure 9: Proportion of practitioners reporting feeling ‘very confident’ in their ability to identify examples of the ORIM framework pre- and post-programme	28
Figure 10: Examples of home visit activities carried out by practitioners	31
Figure 11: Examples of literacy events carried out by practitioners	31
Figure 12: Practitioner coverage of the ORIM framework.....	32
Figure 13: Example skills from the Jigsaw of Development.....	33
Figure 14: Literacy strands covered in REAL-Beginnings.....	34
Figure 15: Matthew	37
Figure 16: Lauren.....	37
Figure 17: James	38

Acknowledgements

This project was conducted through a collaboration between Oldham Council, the National Children's Bureau (NCB) and Bridgewater Healthcare NHS Foundation Trust, with project evaluation carried out by the ESRC International Centre for Language and Communicative Development (LuCiD). Particular thanks go to Paula Healey and Claire Burton from Oldham Council, Helen Wheeler and Cathy Hamer from NCB, and Sonja Jones, Janette Olsen, Nicola Hall, Christopher Tindall and the early years practitioners from Bridgewater for all of their work on the REAL Beginnings programme, and of course also to all the families who took part. Finally, thank you to Professor Cathy Nutbrown, Professor Peter Hannon and their team at the University of Sheffield who developed the original REAL programme.

Executive Summary

Background to 0-2 REAL Beginnings in Oldham

The REAL Beginnings programme is a modified form of the Making it REAL (Raising Early Achievement in Literacy) programme (Nutbrown, Hannon & Morgan, 2005), developed by the National Children's Bureau (NCB) for use with families and their children aged from around 12-months. The programme consists of a series of home visits and group events, delivered by early years practitioners over a year-long period, to help families to support their children's development of pre-literacy skills. In this under-2s age group, the focus is on *Communication and language, Books, Mark-making, and Songs, rhymes and storytelling*. REAL Beginnings was delivered in Oldham from 2018-2020, funded by the Department for Education's Opportunity Areas initiative.

Evaluation aims and methodology

In this pilot study, families identified via three pathways were invited to participate. Firstly, children identified as scoring 'below cut off' for communication in their 9-12 month ASQ. Secondly, this group was extended to include children scoring 'below cut off' within their personal, social and emotional ASQ score. And thirdly, a small number of children, scoring appropriately within their ASQ, selected by family health visitors as children potentially benefiting from additional visits due to individual family circumstances. Families were allocated to either the REAL Beginnings programme or received business-as-usual support. A range of measures were used at the beginning and end of the study to collect data on the children's developmental progress, the Home Learning Environment (HLE), and the families' experiences of the programme. In addition, data were collected from early years practitioners to evaluate their levels of confidence in delivering the programme, establish which aspects of the programme were most frequently the focus of home visits and events, and gain insights into the factors that influenced family engagement.

Key findings

A summary of the Key Findings is shown in [Box 1](#).

Conclusions

The variability in family engagement with the programme, the small sample size and some potential degree of non-random variability between the groups means that we cannot draw solid conclusions about the effectiveness of the REAL Beginnings intervention. However, there are some indications that aspects of the programme may be having a positive impact on the families involved. In comparison to families in the Control group, children in the REAL group appeared to make greater progress on aspects of development related to the intervention and caregivers reported greater increases in certain types of supportive home learning activities and behaviours. A larger study with a full Control group is needed to determine the extent to which the REAL programme is a catalyst for changes in child development and caregiver behaviours.

In addition, this study reveals information about which pre-literacy activities parents were most likely to engage in, which aspects of the REAL programme were most frequently implemented during home visits and events and how confidently practitioners were able to do so. This can be used to feed back into the training cycle to ensure that the programme is delivered to maximum effect.

Box 1. Key Findings from the evaluation of REAL Beginnings in Oldham

KEY FINDINGS

- Children in the REAL group made significantly greater developmental gains in areas targeted by the REAL programme than those in the Control group, but the groups did not differ in their scores on other language and communication measures.
- Parents reported more frequently engaging in activities to support *Communication & language*, and *Songs, rhymes & storytelling* in comparison to *Mark-making*, and more frequently provided Opportunities than engaging in Modelling behaviours for their children.
- Parents in the REAL group reported a higher frequency of behaviours related to a supportive Home Learning Environment post-programme than those in the Control group. However, both groups showed an increase in these behaviours over the course of the study, so we need to interpret these results with caution.
- Parents who received the REAL intervention felt it had improved their ability to support their child, particularly in *Mark-making* and *Communication & language*. This is evidenced by greater increases in the reported frequency of these specific behaviours post-programme.
- Practitioners reported feeling more confident in their ability to implement the Opportunities, Recognition and Model strands of the ORIM framework at the end of the study than at the beginning, but they were less confident around the Interaction strand, especially in relation to supporting *Communication and language*.
- Practitioners were most likely to focus on *Communication & language* in the home visits and events, and somewhat less likely to focus on *Mark-making*, and worked on Opportunities and Interaction behaviours with parents more than on Recognition or Model.
- Case studies and feedback from Practitioners provides further evidence about the perceived positive impact of the REAL programme for some families, and the problems encountered with families who were less engaged.

1. Introduction

1.1 Background to REAL interventions

Making it REAL is a family-orientated literacy programme, sharing knowledge and practice with caregivers to support their child's learning at home. The aim of REAL is to improve children's early educational attainment with a particular focus on boosting early literacy and language development so that children are school-ready, and more keen and confident to learn in their early school years. Making it REAL is based on research led by Professors Cathy Nutbrown and Peter Hannon at the University of Sheffield that demonstrated the positive impact of their REAL (*Raising Early Achievement in Literacy*) programme on 3 to 5 year-olds' early literacy skills and parents' confidence in supporting their development (e.g. Nutbrown, Hannon & Morgan, 2005).

Making it REAL is led by the Early Childhood Unit (ECU) at the National Children's Bureau (NCB) and was developed in partnership with the University of Sheffield and schools, nurseries and children's centres across Oldham and Sheffield, funded by the National Lottery (2009-2012). Since then, the ECU has worked with a number of local authorities to develop projects and materials that promote children's literacy in disadvantaged areas.

Although the Making it REAL programme has mostly been implemented with children aged 3 to 5, the materials have been adapted and piloted with under 2s by the NCB in collaboration with Sandwell and Lambeth local authorities.

1.2 0-2 REAL Beginnings in Oldham

The current 0-2 REAL Beginnings programme was funded by the Government's Opportunity Area (OA) programme, launched in 2017, which identified Oldham as one of 12 areas in the UK facing the biggest challenges to social mobility. Data showed that young people in Oldham were less likely to have access to high quality education and employment opportunities than children from other areas of the country.

The OA programme identified three priorities for action in Oldham's Social Mobility Delivery Plan (Department for Education), all aiming to improve educational and employment outcomes for young people: 1.) Ensuring that children are school-ready by the age of five, 2.) Raising attainment for all and raising it fastest for disadvantaged pupils and 3.) Preparing all children and young people to be ready for life, learning and work.

To address the first priority, Oldham received funding through the OA in 2018 to deliver an adapted REAL programme (*REAL Beginnings*) to families of under-2s, and to evaluate the effect of the programme on children's development and parents' and practitioners' confidence in supporting them. Bridgewater Community Healthcare NHS Foundation Trust was commissioned to deliver the programme through their Right Start service.

1.3 Description of REAL

The REAL programme is based on the ORIM framework. ORIM stands for four ways parents can help their child to learn: Oppportunity, Recognition, Interaction and Model, and represent behaviours that parents are likely to already be doing to some degree with their children.

Opportunity refers to the parent offering the child materials, permission or space to engage in a literacy behaviour (e.g. giving the child books to read or crayons and paint to make art with). Parents are also encouraged to **Recognise** and value small steps in their child's development (e.g. praising the child for producing words or drawings), to **Interact** with their child (e.g. playing, reading or carrying out everyday tasks together) and to **Model** literacy behaviours by engaging in a particular literacy behaviour while simultaneously explaining to the child what they are doing (e.g. 'I am reading a text') and why (e.g. 'I am writing this card as it's dad's birthday tomorrow'). This way, the literacy act becomes more explicit to the child and they are more likely to want to join in if they understand its purpose.

These four ways that parents can help their child's learning are then mapped onto four different pre-literacy strands that children under two years could engage in, all promoting their communicative development (*Communication and language, Books, Mark-making, and Songs, rhymes and storytelling*).

The mapping of the four ORIM elements to these four pre-literacy strands produces a grid that practitioners can use to generate ideas on how best to help parents in supporting their child's early language and literacy at home. These ideas then form the basis of home visits and literacy events that families are invited to participate in with other families. Using a grid (see [Table 1](#)) to map parenting behaviours, practitioners can identify any gaps and help families to promote a particular ORIM behaviour (shown on each row), a specific pre-literacy strand (shown in each column), or a combination of the two. Alternatively, the practitioner may notice that the parent already engages well with the child in some of these areas and can encourage them to build on what they are already doing. As part of the project, practitioners also attend network meetings to generate ideas and share best practice.

Table 1: Example behaviours & activities to promote pre-literacy via the ORIM framework

		PRE-LITERACY STRAND ¹			
		Communication & language	Books	Mark-making	Songs, rhymes & storytelling
FAMILIES PROVIDE	<u>O</u>pportunities	Talking to their child throughout the day, commenting on what they are doing ('Let's put your socks on now') or pointing to objects in the environment and labelling these ('That's a flower')	Providing the child with baby books - plastic, buggy, board books, fabric books, dual-language books, library enrolment	Providing mark-making tools such as pens, chalk and crayons to the child, developing their motor movements which later aid their ability to write such as messy, sensory and water play	Singing nursery rhymes to the child, playing recorded songs to the child, musical books/sensory books
	<u>R</u>ecognition	Keeping a record of the words and sounds the child makes, understanding and recognising their small steps in language by praising them	Noticing when the child repeats phrases in a book or joins in, making a record of the child's favourite books	Parents informed about the typical stages of children's writing and to recognise their value, displaying children's early marks on a wall or taking photos of them	Making a video of the child singing, noticing the child's favourite songs, making a collection of rhymes in a scrapbook
	<u>I</u>nteraction	Engaging in two-way conversations with their child or playing games such as 'peek-a-boo' and 'knock, knock box' together	Reading together, using books with flaps and buttons that make noises or 'speak', talking about books	Doing mark-making together, stay-and-play sessions to support mark-making and the parent talking to their child as they make marks to help give them meaning	Singing and dancing together, making props/puppets for rhymes (e.g. lollipop sticks), making simple shakers
	<u>M</u>odel	Parent explaining to the child when and why they are talking on the phone or speaking to other adults and talking as a running commentary throughout the day	Parent telling their child when they are reading and being positive about it, reading books or magazines in front of the child	Parent telling the child as they draw, make things and cook and telling them as they write what they are writing about and what it is for (e.g. 'I am writing a birthday card')	Going to group singing events and joining in, singing and dancing to the child to encourage them to copy

¹ Examples adapted from Training grids provided by the NCB

2. The Current Project

2.1 Introduction

In the current project, families were randomly allocated to receive the REAL Beginnings programme (the REAL group, N = 30) or the usual universal offer (the control group, N = 13). The children were aged between 12 to 21 months (average age = 15 months) at the start of the study. Measures that assessed children's development and parent and practitioner confidence in supporting early literacy were taken at the beginning of the study and approximately 12 months later to compare progress in the two groups (see [Box 2](#) below).

Thirteen practitioners were involved in the study. They received two full days of REAL training in October 2018, delivered by the NCB. The aim was for practitioners to understand and develop their practice, based on the REAL framework, to allow them to plan their own home visits and literacy events with families in the REAL group.

In the training sessions, practitioners were provided with background on the REAL project and detailed content on the four different elements of the ORIM framework (Opportunity, Recognition, Interaction and Model) as applied to the four different pre-literacy strands for under-2s (*Communication and language, Books, Mark-making and Songs, rhymes and storytelling*). They were shown examples of how ORIM can be applied in both home visits and literacy events and took part in discussions to develop practical ideas of how to implement the programme. A follow-up session was run on a separate day to discuss recruitment and to familiarise practitioners with the evaluation measures to be used.

Following the training, practitioners implemented the 0-2 REAL Beginnings project. Families in the REAL group were each offered six home visits and three literacy events over the course of one year. The control group was offered access to stay and play sessions at the local children's centre, with practitioners accompanying those who were not familiar with this environment. Children in the control group continued to receive the usual 'Healthy Child' pathway of provision as per the national Public Health England mandated Health Visitor offer (PHE 2021). This included access to Children's Centre services such as the provision of home visits or phone call support for families by Children's Centre staff as part of the Right Start core service offer. Following a subsequent Ages and Stages Questionnaire (ASQ) assessment at 18 months, these families were given further advice and support if needed (e.g. audiology referrals, recommendations to join local stay and play sessions).

Practitioners also provided one-to-one support at home where required, with a focus on bedtime routines and enriched play opportunities but not literacy-specific behaviours.

2.2 Participants

Sixty-one families were initially identified for the study, primarily based on children receiving a low score on the Communication subscale of the ASQ at their 12-month assessment (Squires, Bricker & Twombly, 2015). However, 18 families did not participate (11 families allocated to the REAL group, 7 families to the control group). The final sample consisted of

43 families: 30 in the REAL group and 13 in the control group. Both groups were fairly evenly matched in their ASQ Communication scores pre-programme.²

The decision not to participate amongst those allocated to the REAL group was due to a variety of factors; parents were not concerned about their child's developing communication skills (4), practitioners struggled to obtain contact or visiting opportunities (3), the REAL programme was deemed inappropriate due to the child's other needs, e.g. hearing impairments (2), parents were unable to commit to the project around their working hours (1) or the family left the area (1). Practitioners' failed attempts to contact families or complete the necessary visits were the main reasons for non-participation in the Control group (6) with one family moving away (1).

Table 2 provides demographic information about the participants. Around half of the children were exposed to a language other than English at home. These families came from a range of linguistic backgrounds, with most speaking Urdu (8), Punjabi (4) or Bengali (4). The other home languages included Pashto, Polish, Kurdish, Arabic, Lingala and Tigrinya.

Table 2: Demographic information about the participants

Characteristics	Group	
	REAL (N=30)	Control (N=13)
Child gender (girls)	16 (53%)	8 (62%)
English as an additional language (EAL)	14 (47%)	7 (54%)
Average child age at the start/end of the study	15 months; 23 months	16 months; 23 months
Additional educational needs (AEN)	0	2 (15%)

2.3 Evaluation measures

The project asked whether:

- i.) a higher percentage of children in the REAL group scored at expected norms for their age in language and communication at the end of the project, in comparison to at the start, and in comparison to the control group
- ii.) families who received the intervention engaged in more REAL-based literacy behaviours with their children at home after the intervention in comparison to prior to the intervention, and in comparison to the control group
- iii.) parents' and practitioners' confidence with and knowledge of how to implement the ORIM framework to promote children's literacy improved as a result of the programme.

Measures were taken from both REAL and control families pre- and post-programme to assess progress in the two groups, unless otherwise stated. Practitioner measures were also gathered (see [Box 2](#)).

² The ASQ Communication scores of both groups were compared using an independent samples t-test. The difference between the Control and REAL groups' scores was not significant, $\chi^2 = -1.61$, $df = 23$, $p=0.94$.

Box 2. Measures collected

Wellcomm (Hurd & McQueen, 2010) – a practitioner assessment of communicative development in English. Each child was classified as green, amber or red with green indicating that the child is performing at age-appropriate level and amber and red identifying children falling behind expected norms to varying extents.

UK CDI Child Gestures and Actions (at 12 months only) (Alcock, Meints & Rowland, 2020) – a parent-report checklist to indicate whether (Yes/No) or the frequency with which (*often/sometimes/not yet*) their baby produces particular gestures (e.g. waves bye-bye) and engages in games, routines, actions with objects, pretence and imitation. Children received a score of 0 for *not yet*, 1 for *sometimes* and 2 for *often* or 1 for Yes, 0 for No as applicable. A total score out of 63 was calculated.

UK Bilingual Toddlers Assessment Tool (UKBTAT) (at 24 months only) (Floccia et al., 2018) – a parent-report vocabulary checklist to assess vocabulary development in English (based on a checklist of 100 words) and a child's home language (if different from English, based on a checklist of 30 commonly early acquired words). Parents indicate whether their child understands and/or says a particular word in each of their languages. Due to time constraints, and to give a rough comparison of monolingual and bilingual children, the 30-word checklist was used for English and other home languages. All children received a score out of 30 for comprehension and for production, with EAL children receiving a point for a given word if they understood/said the word (e.g. ball) in either (or both) language(s). Parents of bilingual children were also asked to complete a Language Exposure Questionnaire (LEQ, Cattani et al., 2014) to indicate which other language(s) is(are) spoken and the frequency with which the child is exposed to both English and their other language.

Child Development (Theakston & Hargreaves, 2018) – a bespoke parental questionnaire was created to assess development in each of the areas targeted by the REAL programme: *Communication & language* (Listening, Understanding and Speaking), *Book reading*, *Mark-making*, and *Songs, rhymes and storytelling*. For each area, parents were asked to circle one of five statements that best characterises their child's ability, with each statement selected to map onto one of five overlapping age bands (Birth – 11 months; 8-20 months, 16-26 months, 22-36 months and 30-50 months). The age bands and statements were taken/adapted from the NCB (2013) *Early Years Developmental Journal* and Early Education's (2012) *Development Matters in the Early Years Foundation Stage* guidance, both designed to support practitioners in implementing the Department for Education's Early Years Foundation Stage statutory framework.

Home Learning Environment (HLE) questionnaire (Theakston & Hargreaves, 2018) – a bespoke parent-report questionnaire was devised to assess the frequency with which parents engage in ORIM behaviours at home. The questionnaire is split into four sections (Opportunity, Recognition, Interaction and Model), each of which includes four questions mapping onto the four different pre-literacy strands (*Communication and language*, *Songs, rhymes and storytelling*, *Books and Mark-making*). The HLE activities were rated by the parent on a scale of 0-5 (*never, rarely, sometimes, once/twice a day and several times a day*, respectively). An overall score out of 64 was calculated for each family as well as separate scores for each ORIM element and each pre-literacy strand (each out of 16).

REAL group parental questionnaire (Theakston & Hargreaves, 2018) – a bespoke questionnaire, adapted from an earlier version created by NCB, carried out post-programme with those in the REAL group. The questionnaire asks the extent to which the REAL programme has helped the parent to support their child's learning with respect to each of the four literacy strands (*Not very much, a little or a great deal*) and if so, how? Any additional parent comments were also documented.

Pre- and post-REAL practitioner questionnaires (Theakston & Hargreaves, 2018) – bespoke practitioner-report questionnaires asking practitioners to rate their confidence before the programme in their ability to identify examples of Opportunities, Recognition, Interaction and Model for each of the four literacy strands, and post-programme to indicate how easy they found it in practice to do this (*Not very confident, Quite confident, Very confident*). The questionnaires also ask what hopes they have for the programme, as well as the perceived benefits of and problems with implementing REAL.

Visit notes – practitioners made detailed notes about each visit or event conducted with the REAL families, and about any difficulties encountered in contacting families and arranging visits. These were used to document which aspects of the ORIM framework were implemented across the programme to provide insights into ease of application and to highlight which aspects of the programme might be most effective in supporting families and children.

It is very difficult to accurately assess communicative development in children within this age group by taking a snapshot at a single time point. Additional difficulties arise in assessing development in bilingual children; assessments focussed on English often underestimate their knowledge. However, it was important to adopt measures that could be taken by practitioners during a routine home visit and that were not time intensive. The measures we used were chosen because there has been some research to assess their reliability (UK CDI, UKBTAT, Wellcomm), or to reflect aspects of the EYFS and ORIM framework familiar to practitioners (Child, Parent and Practitioners questionnaires).

The UK CDI is a standardised measure, but has not been normed specifically on an EAL population, and some items may not be culturally relevant (e.g. 'eating with a knife and fork' which may have cultural equivalents such as eating with their hands). Practitioners were encouraged to be flexible in completing the CDI to reflect cultural differences. Similarly, the UK BTAT can be used to provide an estimate of children's language abilities at 24 months, but only when the 100-word English checklist is used, and estimates for the generic EAL 30-word checklist are less accurate than those based on checklists designed for a specific additional language. There are also limitations to parental-report measures that we will return to in the Discussion.

3. Results

3.1 Family engagement with the programme

Each family in the REAL group was offered up to 6 home visits and 3 literacy events over the course of one year. [Table 3](#) shows the number of home visits and events that families attended in the programme. The majority of families (80%) received all 6 home visits, as intended. A much smaller percentage (37%) attended all 3 literacy events, although 50% attended at least two.

Table 3: Number of home visits and events attended by those in the REAL group

Number of visits/events	Home visits		Literacy events	
	Number of families	Percentage	Number of families	Percentage
0	0	0%	9	30%
1	0	0%	6	20%
2	1	3%	4	13%
3	2	7%	11	37%
4	1	3%	NA	NA
5	2	7%	NA	NA
6	24	80%	NA	NA

3.2 Child development measures

3.2.1 Communication skills

Measures of the children's communication and language skills were taken from both groups pre- and post-programme to assess communicative development for each group against expected levels.

Pre-programme

To assess the child's communication skills pre-programme, the UK CDI Child Gestures and Actions questionnaire (Alcock et al., 2020) was administered to both groups at the beginning of the programme. The mean scores (out of 63) for each group are shown in [Figure 1](#), and the percentage of scores falling below vs. at or above the 25th centile for their age is shown in [Figure 2](#). The REAL group (N=30) had a slightly higher average CDI score than the Control group (N=11) at the beginning of the study, and a slightly higher percentage of the REAL group scored at or above the 25th centile. However, these differences were not statistically significant, showing that both groups were quite evenly

matched in communication skills pre-programme³. We also note that although children were invited to participate in the study based on a low score on the Communication subscale of the ASQ, the CDI measure suggests that around half of the children for whom CDI scores are available were at or above the 25th centile.

Figure 1: Mean CDI Gestures scores across groups

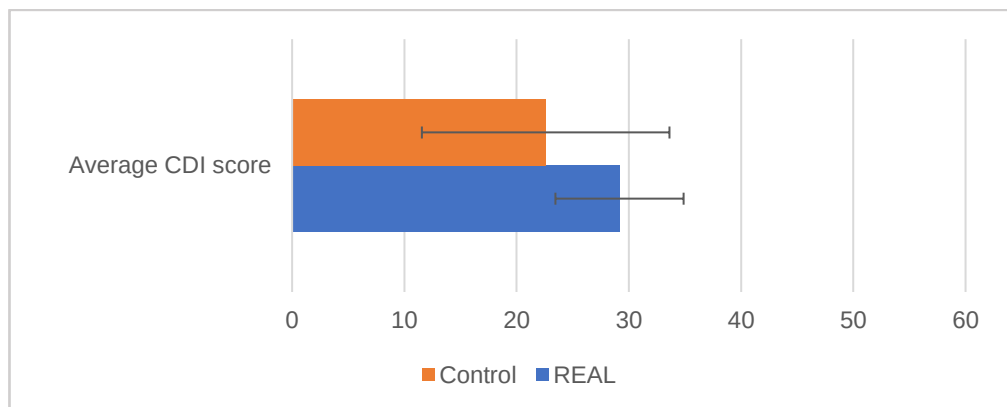
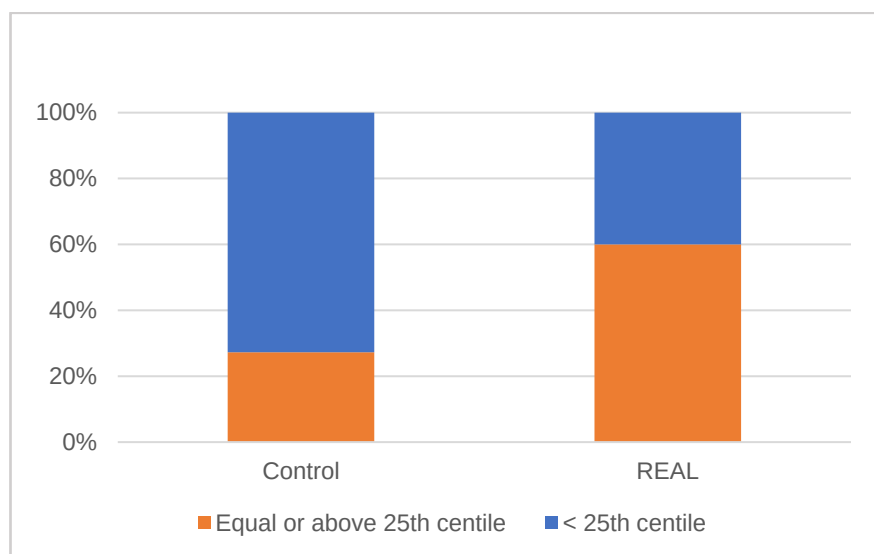


Figure 2: Percentage of children scoring equal or above 25th centile vs. < 25th centile in CDI



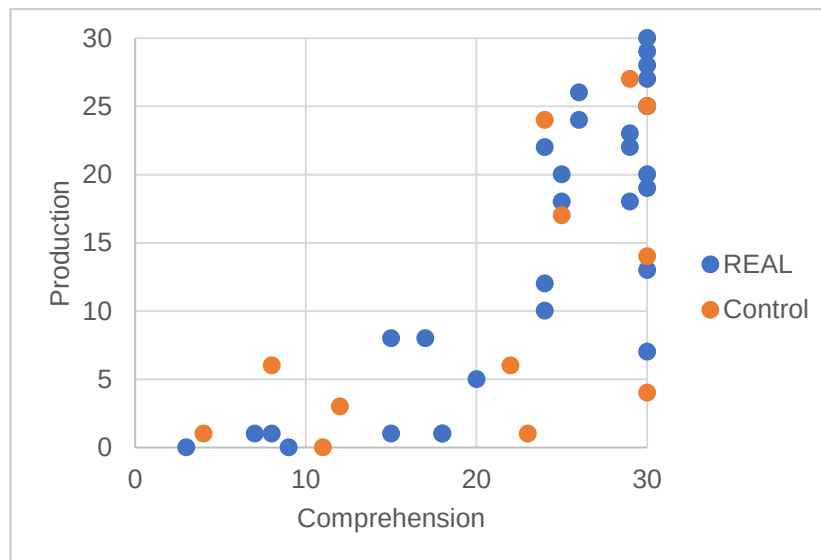
Post-programme

Both groups were administered a modified version of the UKBTAT (Floccia et al, 2018) at the end of the programme (~24 months) to assess the children's language comprehension and production skills (each a score out of 30, with a point if they understood/produced a particular word in English or, if EAL, in either language).

³ The average CDI scores of both groups were compared using an independent samples t-test. The difference between the groups was not significant ($t(39) = 1.16, p = .25$). A chi-squared analysis was performed comparing the number of children who scored equal to or above 25th centile vs. below the 25th centile between the two groups. The analysis showed that the distribution between the control and intervention groups was not statistically different, $\chi^2 = 2.27, df = 1, p = .13$

Both groups' BTAT scores can be seen in Figure 3. The REAL group (N=30) had slightly higher scores than the control group (N=12) on both measures (comprehension mean = 20.67 control, 23.03 REAL; production mean = 10.67 control, 14.8 REAL). However, these differences were not significant. Coupled with the similar scores seen on the CDI at the start of the programme between the two groups of children, these data suggest that the intervention did not result in an improvement in children's vocabulary skills for those in the REAL group compared to those in the control⁴.

Figure 3: BTAT scores across groups



For EAL children, we also used the online UKBTAT (Floccia et al., 2018) to work out the percentile for the child's score in their home language. This could only be assessed for children whose parents had also completed the LEQ (Language Exposure Questionnaire) to ascertain the frequency of exposure to the additional language (N=19: 6 Control, 13 REAL). Similar percentages of children scored at or above the 25th centile in their additional language for comprehension (61.5% in the REAL group, 66.7% in the Control group). There appeared to be an advantage for those in the REAL group in production (53.8% vs. 16.6% control at or above 25th centile) but the low numbers in the control group mean this finding may be unreliable. Thus, there is little evidence to suggest that EAL children in the intervention group were more advanced in their communicative abilities in their home language than those in the control group at the end of the study.

Finally, the Wellcomm questionnaire was administered to both groups at both the pre- and post-programme time points (~12- and ~24 months). Each child received a colour score of green, amber or red. A green score signalled that the child was performing at the expected level for their age with amber and red scores indicating a possible cause for concern to varying degrees.

Figure 4 shows the percentage of children in each group achieving expected (green) vs. below expected (amber and red) scores at the time of each assessment. Note that the

⁴ Both groups' average BTAT scores were separately compared for comprehension and production using an independent samples t-test. The difference between the Control and REAL groups' scores was not significant for comprehension ($t(40) = 0.81, p = .42$), or production ($t(40) = 1.17, p = .25$).

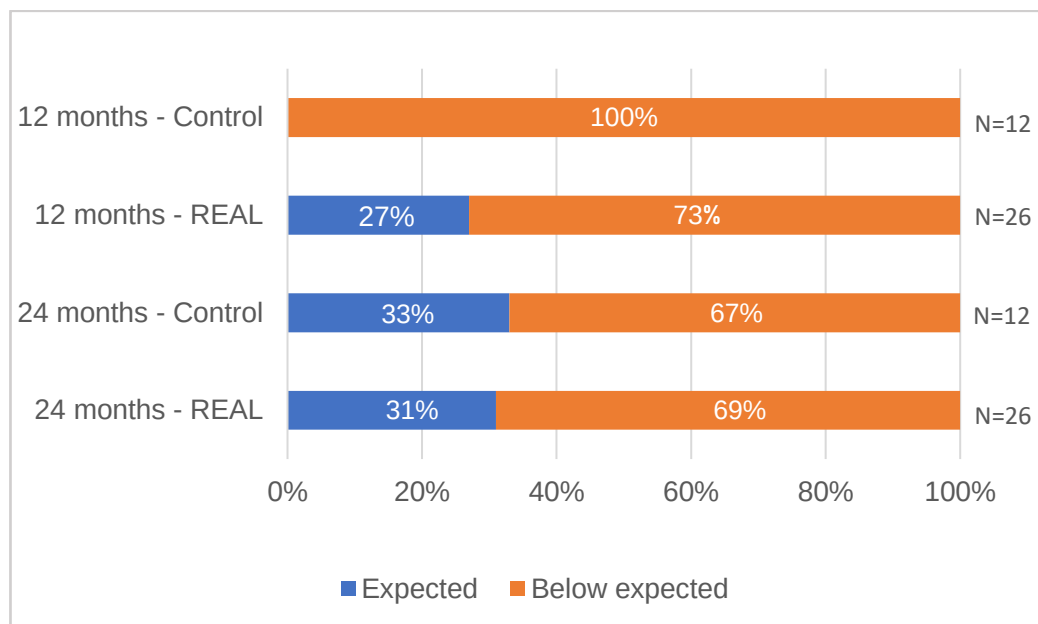
findings must be treated with caution due to missing data from 4 children in the REAL group & 1 Control.

Although both groups showed an increase in the percentage of participants scoring at expected level post- than pre-programme, the majority of children scored below the expected level for their age. This is in part a reflection of the fact that, at the initial assessment, 7 of the Control group and 8 REAL children were assessed against a Wellcomm band below their actual age; this was also the case for 5 of the Control group and 9 REAL children at the follow-up assessment. We have to assume that these children were not at the expected level for their age; practitioners may have felt they were below the level necessary for assessment within their actual age band. However, in some cases this could be an underestimation of their abilities as some of these children (6 at the initial assessment including 2 REAL, 4 Controls and 4 REAL at follow-up) scored at the 'expected' (green) level against the younger age band against which they were assessed. It is unclear how they might have fared if assessed against their age-appropriate band.

The percentage of children scoring at the expected level did not significantly differ between the groups at either time point. In addition, there was no significant increase in the percentage of children within the REAL group achieving the expected score for their age between the initial and final Wellcomm assessments⁵. These data are in line with the previous language assessments in suggesting that no greater gains were seen in the language scores of children in the REAL group as compared to those in the control group.

It is important to differentiate between children reaching an age-appropriate level in their communicative abilities (recall, we see no change in the percentage of children reaching an age-appropriate level on the Wellcomm across the study) and children making progress. Progress can be seen, for example, by a child moving from red to amber to green within a specific band, or showing emerging communication skills by scoring amber or green when assessed against a higher age band at the follow-up than was administered at the beginning of the study. Although we would expect children to show development over time, it is reassuring to note that 10 of the 12 Control children and 23 of 26 REAL children showed progress across the study when measured in these ways.

⁵ A chi-squared analysis was performed on the Wellcomm data, comparing the number of children who scored at expected vs. below expected language level between the two groups. The analysis showed that the distribution of expected vs. below language level scores between the control and intervention groups was not statistically significant at 12 months, $\chi^2 = 2.37$, $df = 1$, $p = .12$, or at 24 months, $\chi^2 = 0$, $df = 1$, $p = 1$. A separate McNemar test was also performed solely on the REAL group data, comparing the number of children who scored at or below expected language level pre- vs. post- programme. The findings showed that there was no significant difference in the percentage of expected scores post- vs. pre- intervention, $\chi^2 = 0$, $df = 1$, $p = 1$.

Figure 4: Percentage of children at or below expected level in Wellcomm

3.2.2 Child Development Questionnaire

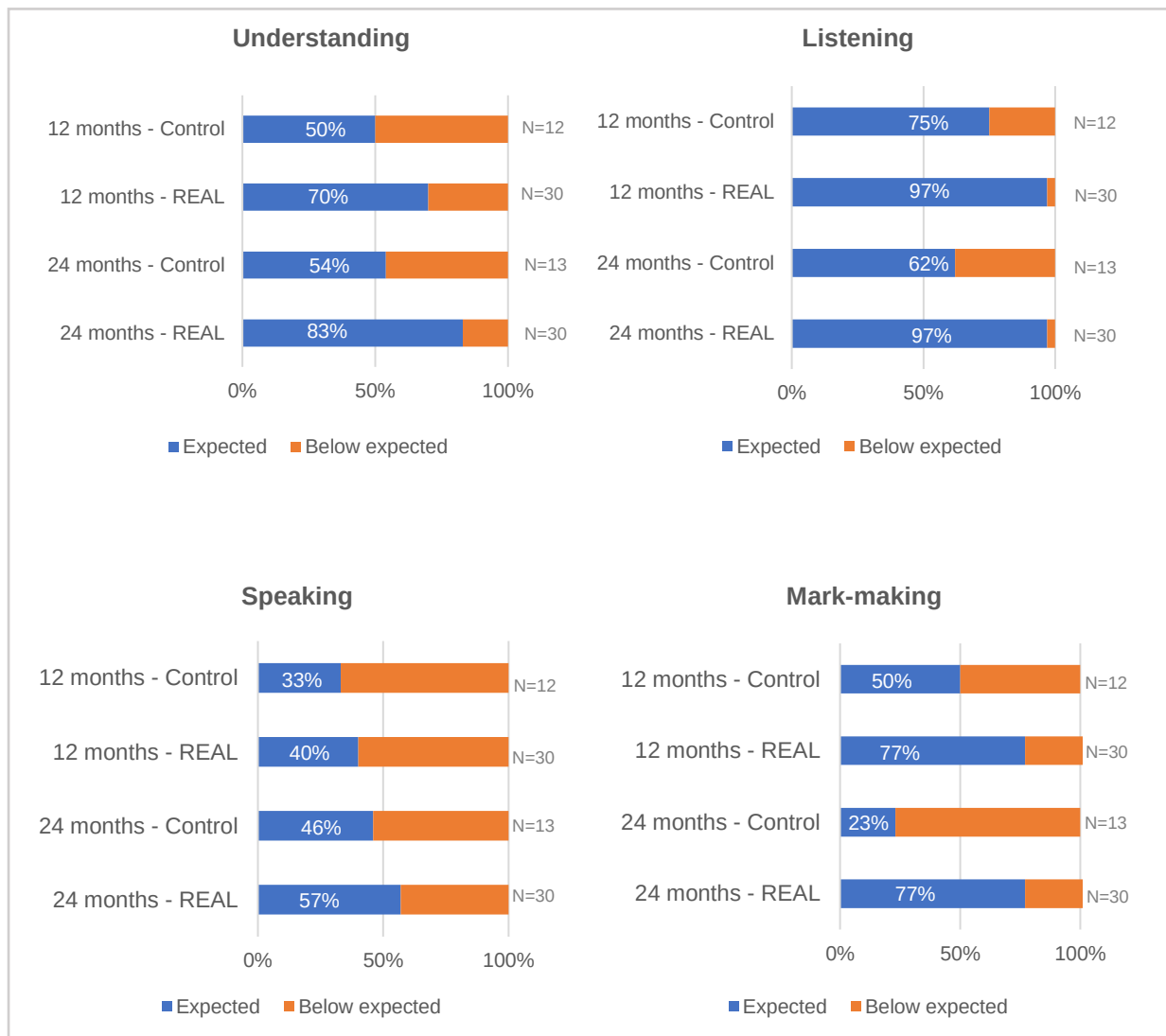
The Child Development questionnaire measured children's pre-literacy skills in six different areas, mapping onto the four pre-literacy strands targeted in the ORIM framework: Listening, Understanding and Speaking (all of which map onto the *Communication and language* pre-literacy strand), as well as *Mark-making*, *Songs, rhymes and storytelling* and *Book reading*.

At time 1 (~12 months), we classed answers corresponding to the *Birth to 11 months* category as below the expected level. For the follow-up questionnaire (~24 months), responses corresponding to *Birth to 11 months* and *8-20 months* were categorised as below expected level.

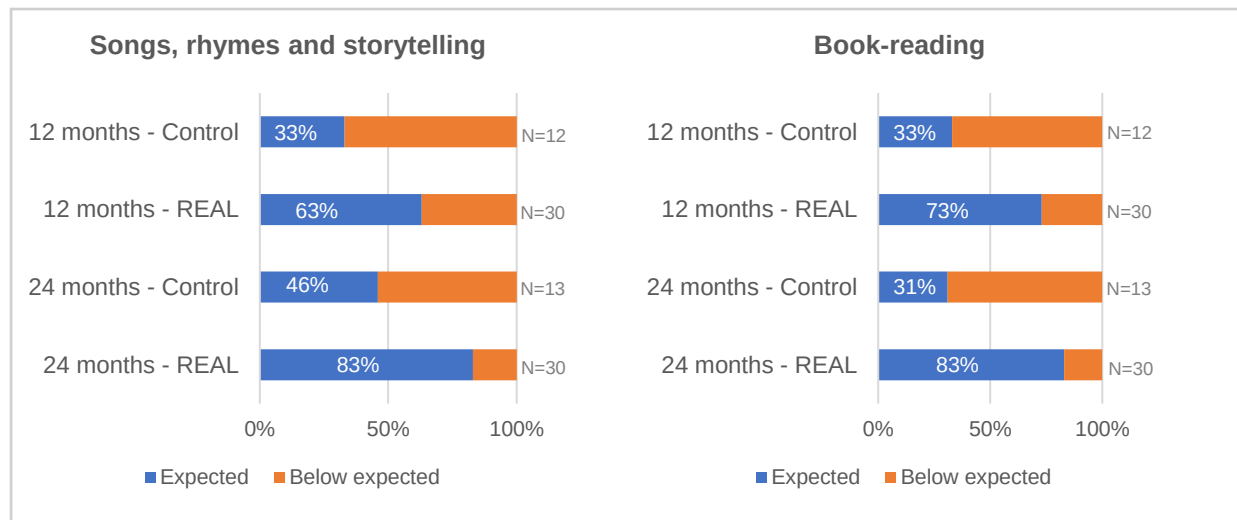
Figure 5 shows the percentage of participants who scored at vs. below the expected level across the six strands, split according to group and time of assessment. In the REAL group, a higher percentage of children scored at the expected level at 24-months than at 12-months in all areas except for *Mark-making* and *Listening*, and appeared to show particular gains in *Songs, rhymes and storytelling* and *Speaking*. In the Control group, gains in these two areas were much smaller, and this group did not show any gains in the other four strands.

A statistical analysis showed that there was a greater number of expected scores in the REAL group (70%) than the Control group (46%) even at the beginning of the programme ~ 12 months. However, larger gains in age-appropriate pre-literacy skills post- vs. pre-programme were also seen for the REAL group. At 24 months, 80% of the REAL group's scores were at expected level compared to only 44% of the Control group's scores. This suggests that the intervention had a positive impact on parent-reported pre-literacy skills since the gap between the groups' scores was greater post than pre-programme.⁶

⁶ A linear mixed-effects regression model was fitted to the Child Development data, using time of assessment (12/24 months) and group (Control/REAL) as fixed predictors, with random effects of participant and strand.

Figure 5: Percentage of children at vs. below expected level across the Child Development strands

The outcome was expected (0/1) scores. Group was a significant predictor of expected scores (REALGroup, $\beta=1.41$, $z = 2.06$, $p = .04$), with expected scores more likely to be found in the REAL group at both ages. However, Group also interacted with time of assessment, (Age24months*REALGroup, $\beta=1.20$, $z = 2.31$, $p = .02$) such that the percentage of children in the REAL group scoring at expected levels was higher at 24 months than at 12 months ($p = .01$), whereas no difference was found for the Control children ($p = .36$).

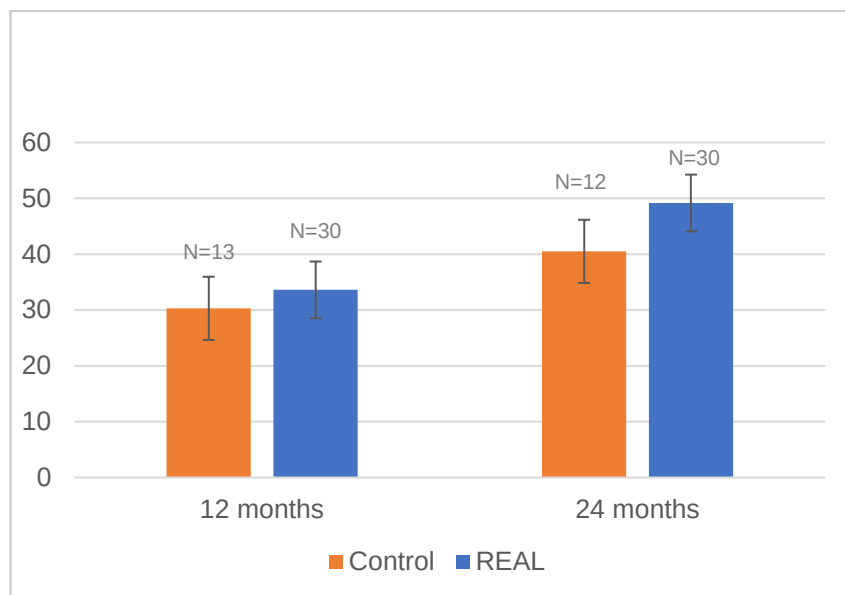


3.3 Home Learning Environment

The Home Learning Environment questionnaire was administered pre- and post-programme to assess the frequency with which parents engaged in ORIM behaviours at home across the four pre-literacy strands. Figure 6 shows the mean scores across groups, while Figures 7 & 8 show this broken down by ORIM area and pre-literacy strand respectively. This allows us to gauge whether the HLE environment may be richer in some respects than others, and if there were any obvious differences between parents in the Control and REAL groups that could reflect an impact of the intervention.

The overall frequency of reported HLE behaviours is higher in the REAL group than the Control group, and the gap appears to widen between 12 and 24 months. A statistical analysis revealed that both the REAL and Control groups were more inclined to report a higher frequency of ORIM related behaviours at 24 than 12 months across all four pre-literacy strands, likely reflecting a general tendency for parents to increase these behaviours as children get older⁷.

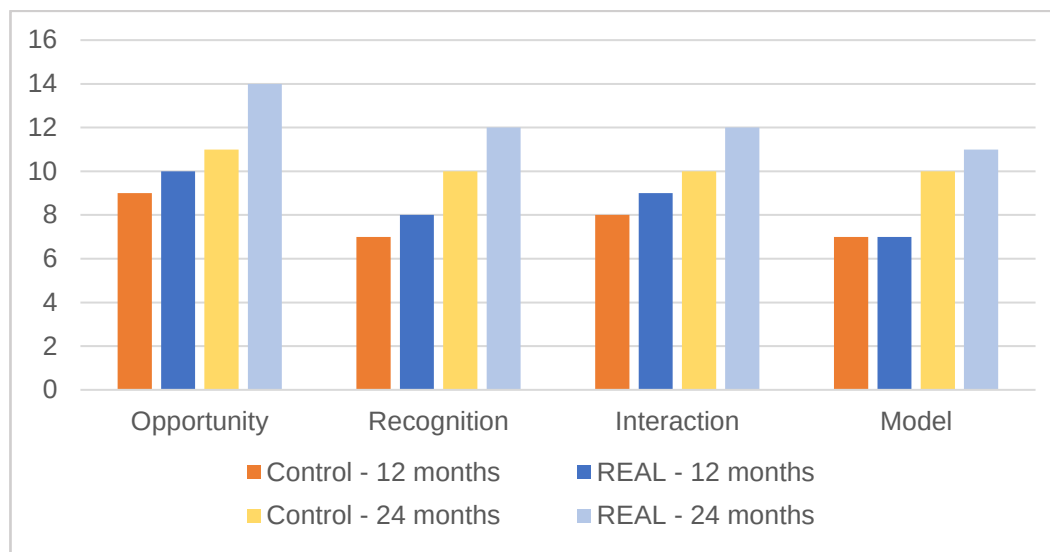
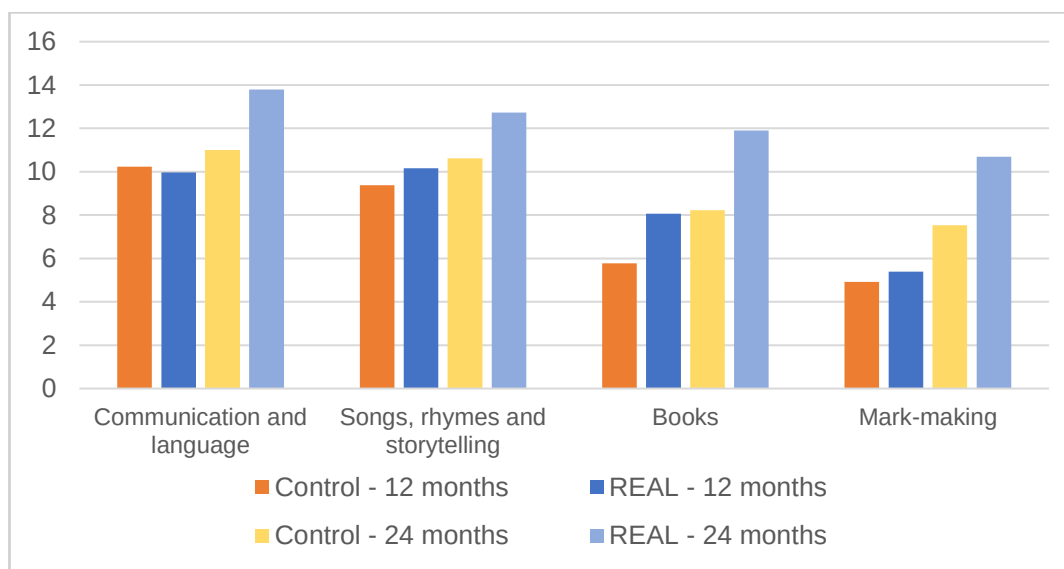
⁷ A linear mixed-effects regression model was fitted to the HLE data, using time of assessment (12/24 months), group (Control/REAL), ORIM behaviour and Strand as fixed predictors, with a random effect of participant. The outcome was HLE score. There was a significant main effect of ORIM behaviour ($\chi^2 = 64.12$, $df = 3$, $p < .001$) and an interaction between Age*Group*Strand. Pairwise comparisons demonstrate an increase in scores between 12 and 24 months in both groups for each Strand (p values $\leq .01$), a higher frequency of Book-related behaviours in the REAL than Control group at both ages (p values $\leq .02$), a marginally higher frequency of Communication & Language behaviours in the REAL group than the Control at 24 months ($p = .08$) but not at 12 months ($p = .79$), and a higher frequency of Mark-making behaviours in the REAL than Control group at 24 months ($p = .02$) but not at 12 months ($p = .64$).

Figure 6: Mean HLE scores for the two groups

Across groups, [Figure 7](#) shows that parents most frequently engaged in Opportunity behaviours with Model the least implemented behaviour across groups. Similarly, [Figure 8](#) shows that parents more frequently engaged in behaviours to support the *Communication and language* and *Songs, rhymes and storytelling* strands with both groups receiving lower scores for *Books* and *Mark-making*.

However, there were also some apparent differences between the groups. The REAL group engaged in a higher frequency of *Book* behaviours than the Control group at both time points. But we also observed that the REAL group reported a higher frequency of *Communication & language* and *Mark-making* behaviours at 24 months than the Control group, whereas no differences between groups were observed at 12 months.

Overall then, there is some evidence to suggest that the intervention may have impacted on the HLE, specifically on the reported frequency of ORIM behaviours to support *Communication and language* and *Mark-making*.

Figure 7: Average HLE scores (out of 16) for the different ORIM behaviours**Figure 8: Average HLE scores (out of 16) for the different literacy strands**

3.4 Parental feedback

Following the REAL programme, parents were asked to what extent the REAL home visits and events had helped them to support their child's development across the four pre-literacy strands (see [Table 4](#)). Names included in quotes have been anonymised to protect the identity of participants.

All but two responses indicated that the REAL programme had helped them to support their child's literacy in some way, with the majority stating that the intervention had helped 'a great deal', particularly for the *Communication and language* and *Mark-making* strands.

Table 4: Parental reports of the impact of REAL

		To what extent parents felt REAL home visits & events helped			
		No. of responses	Not very much	A little	A great deal
Pre-literacy strand	Communication and language	30	0	10 (33%)	20 (67%)
	Books	30	1 (3%)	13 (43%)	16 (53%)
	Songs, rhymes and storytelling	30	1 (3%)	12 (40%)	17 (57%)
	Mark-making	29	0	7 (24%)	22 (76%)

Parents now felt in a better position to support their child's communication and language

Approximately two thirds of parents stated that the REAL home visits and events helped them 'a great deal' in supporting their child with communication and language.

Parents commented on how helpful and interesting the REAL activities were for their family. They could see how these tasks promoted their child's language development and how to implement them at home.

"By using the strategies that Susan gave, I didn't realise just how much my daughter could get from one activity before."

"Very informative programme. Gave me good understanding of how language develops and good ideas to help this."

"It has helped me a great deal. I have learnt many things, to play with my child and to show praise."

"Good advice and lots of ideas on how to help him to talk."

Parents were also more aware of the importance of one-to-one communication with their child and reported engaging in more frequent conversations with them as a result of the programme.

"I try to make time to listen to Henry more. I try to remember to carry on with some of the things I have learned as part of the REAL programme."

"I describe everything I am doing and repeat words back to her for her to hear clearly."

"I talk about what I am doing."

Songs and rhymes now formed a big part of their home lives

29 out of 30 parents felt that the programme had helped them to support their child's learning of rhymes and songs in some way, with just over half indicating it had helped 'a great deal'.

Parents stated that they often sing songs and rhymes with their child at home now and that it is enjoyable for the whole family.

"I try to do this [singing] a lot more now I see how important it is."

"We do lots of singing and rhymes."

"We sing in our home language of Pashto."

They also commented that their child has taken a greater interest in music and that this has helped them to develop new skills.

"Henry mostly hears songs through the TV, he will sometimes do the actions to the songs and has some favourites."

"She will tell us when she wants to dance."

"He sings a lot of nursery rhymes, [...] and his speech has improved."

"He now has his favourites."

Children now have more opportunities to engage with books

29 out of 30 parents stated that the REAL programme had helped them to support their child's book-reading and sharing in some way, with 57% indicating that the visits and events helped 'a great deal'.

Parents now made better use of opportunities to promote their child's reading abilities and reported that a reading routine is embedded at home.

"Joined the library, we are going to go regularly and borrow books to help support with her speech."

"We like to read together."

"I realise the importance of sharing books with my child."

A few children also took a more proactive role, asking their parents to read to them and showing an interest in particular stories.

"I share books with Harry when he brings them to me"

"She can recognise some stories and has some favourites."

Parents now have more ideas to support their child's mark-making

All 29 parents who answered this question stated that the REAL programme helped them to support their child's mark-making in some way, with three quarters indicating that it had helped 'a great deal'.

Parents reported that the REAL programme had offered them simple, cost-effective and enjoyable ways to engage their child in mark-making.

"Some great ideas on mark making and my older child liked to join in with the activities."

"Now have simple ideas to do at home."

"We now do drawing daily."

"I provide lots of opportunities to mark-make and have bought a white board."

A few parents also recognised their child's interest in mark-making, and their desire to copy older siblings.

"I now know that my child enjoys painting"

"He loves to do writing"

"James shows an interest mostly when older siblings do their homework."

Parents appreciated the REAL experience

When asked for their overall thoughts on the REAL programme, all parents were very positive about the experience, stating that REAL had offered them interesting and useful ideas to implement at home.

"We both really enjoyed taking part. Learnt lots of new things and lovely new ideas to try."

"REAL gave me some ideas how to better spend time with my child. Teach her more play."

"Thank you for the ideas. It's been useful for us to help with his speech and language development."

One parent provided the following comment, demonstrating how much they valued the project:

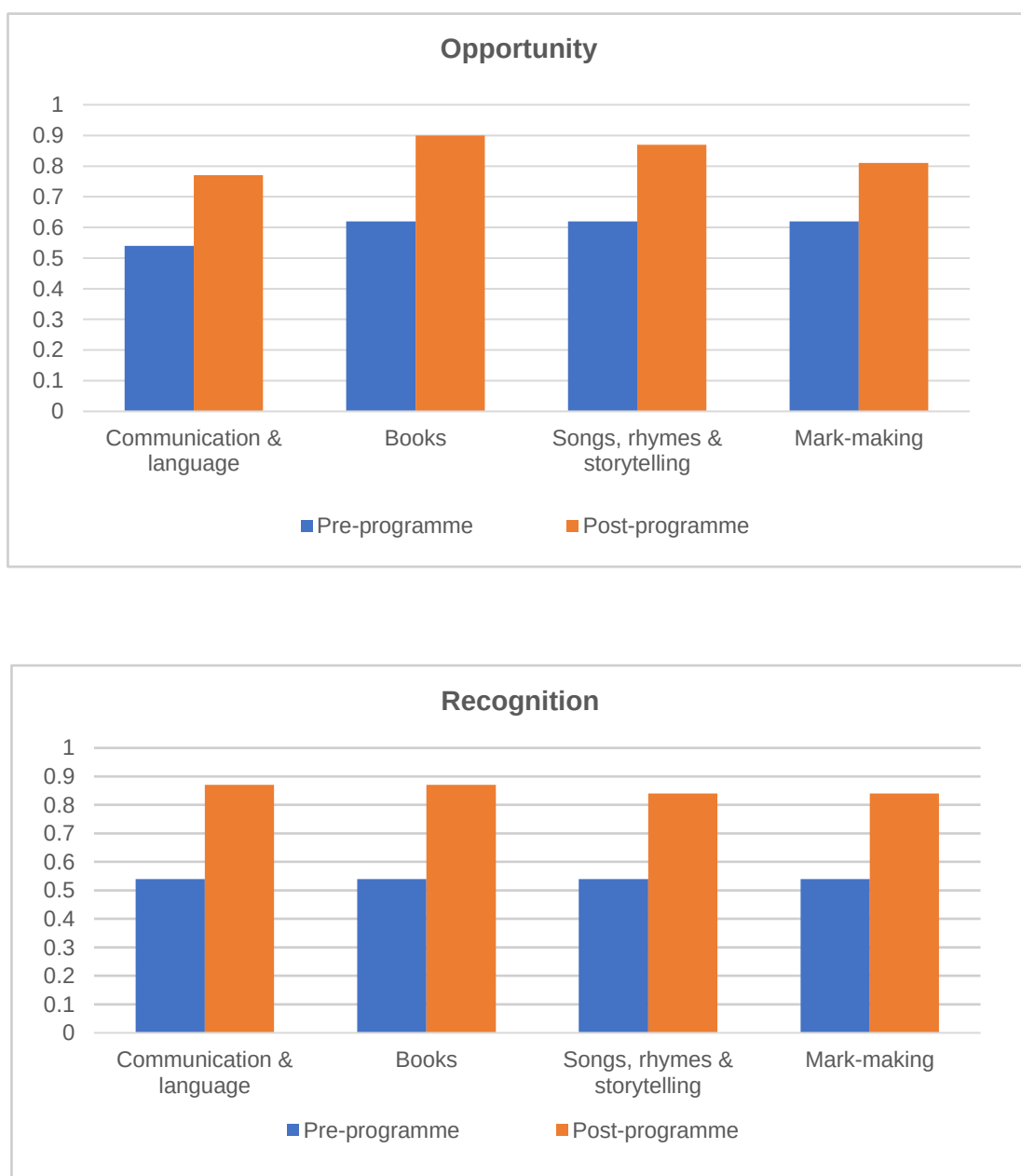
"I wouldn't of known she could pick up all of these new ideas and words without home learning. She's enjoyed it so much and now she knows so many new words which she has picked up through playing. The words all started after the first session that Karen did with us. We have learned so much and have loved the visits. It has been interesting to see how much my daughter knows. I know I need to make time to do more myself now."

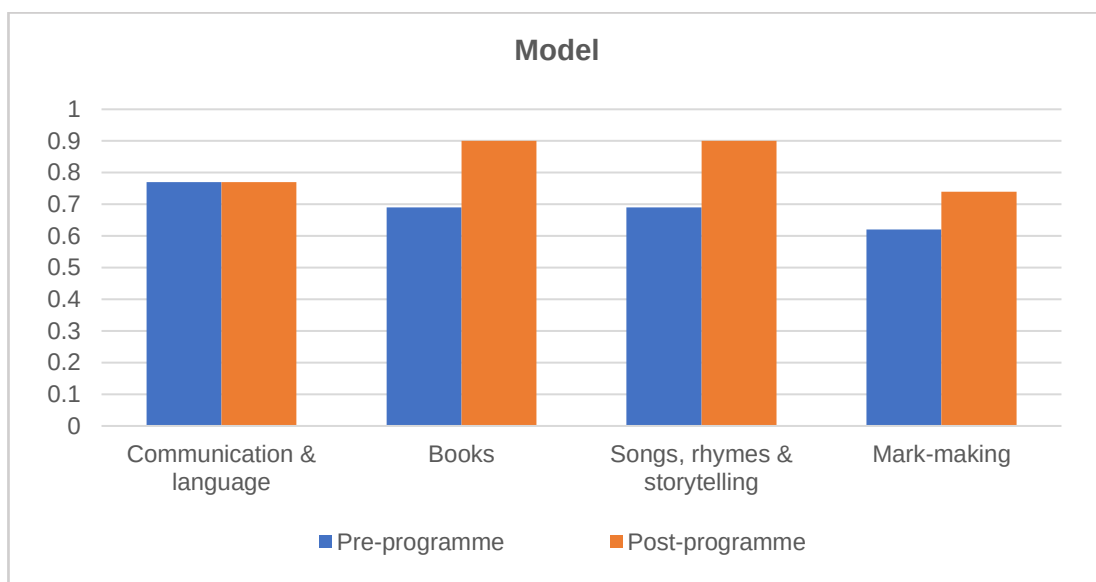
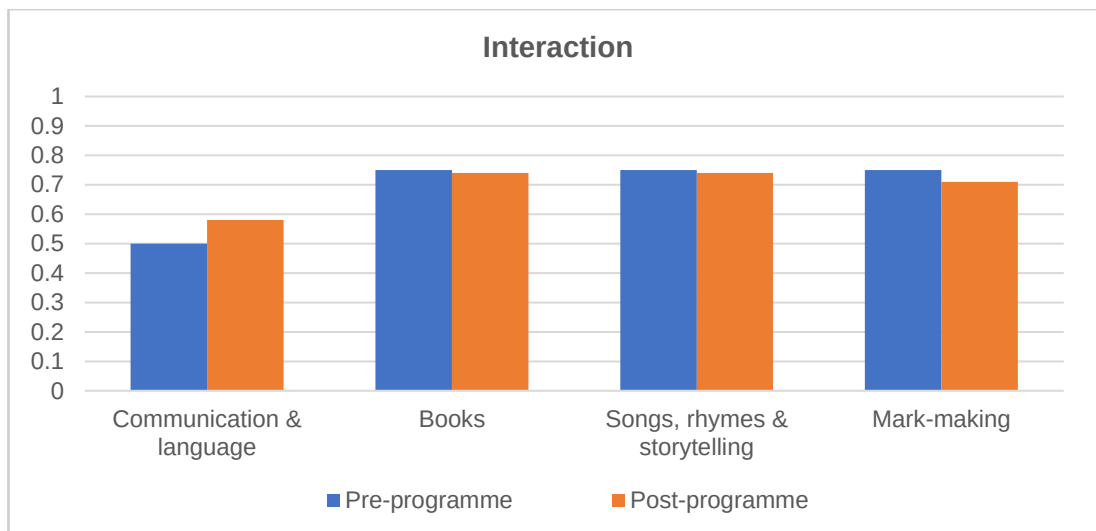
3.5 Practitioner confidence

Each practitioner completed one pre-programme questionnaire (N = 13), and a post-programme questionnaire for each family they had worked with (N = 31) asking how confident they felt in identifying examples of the different aspects of the ORIM framework across the four pre-literacy strands (pre-programme) and in identifying these in practice (post-programme).

Figure 9 summarises the proportion of practitioners reporting feeling 'very confident' with the ORIM framework, split according to Opportunities, Recognition, Interaction and Model. With the exception of four responses, all practitioners reported feeling either 'quite confident' or 'very confident' with the ORIM framework.

Figure 9: Proportion of practitioners reporting feeling 'very confident' in their ability to identify examples of the ORIM framework pre- and post-programme





We then assessed whether the practitioners' reporting of feeling 'very confident' varied according to the specific pre-literacy strand considered, the time of assessment or ORIM area. We found that practitioners were significantly less likely to report feeling 'very confident' in identifying ORIM examples for the *Communication and language* pre-literacy strand (59%) when compared to the other pre-literacy strands (63-65%)⁸.

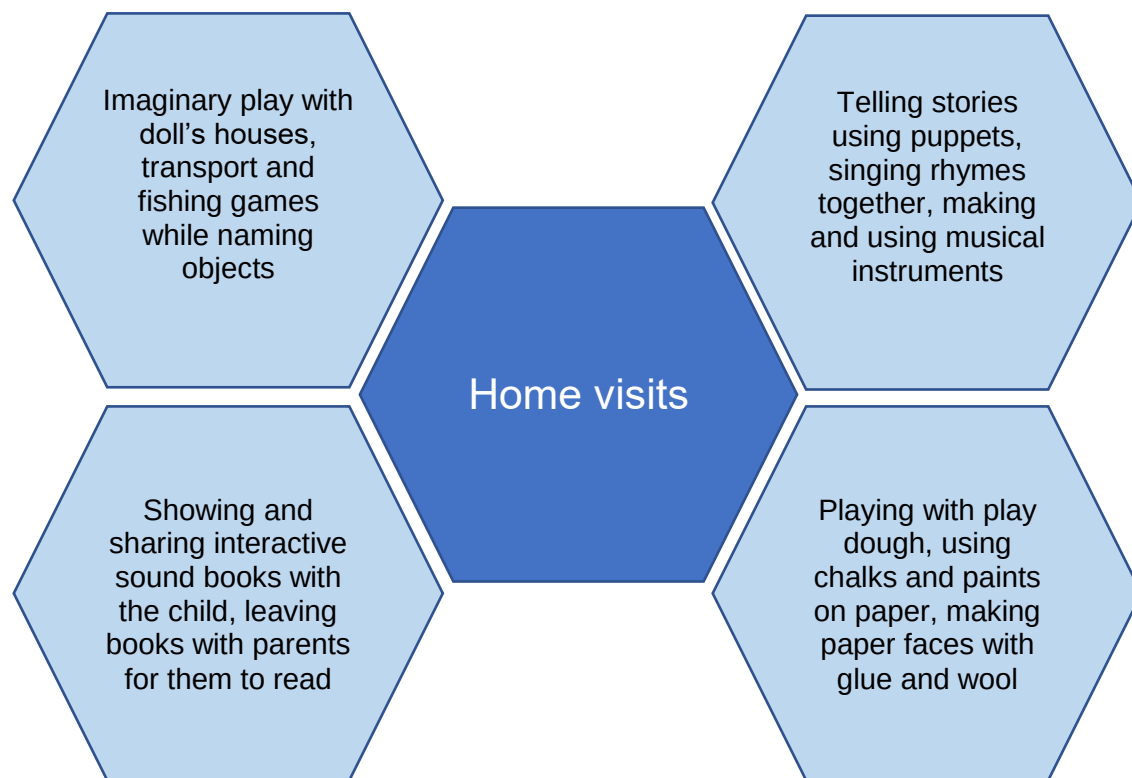
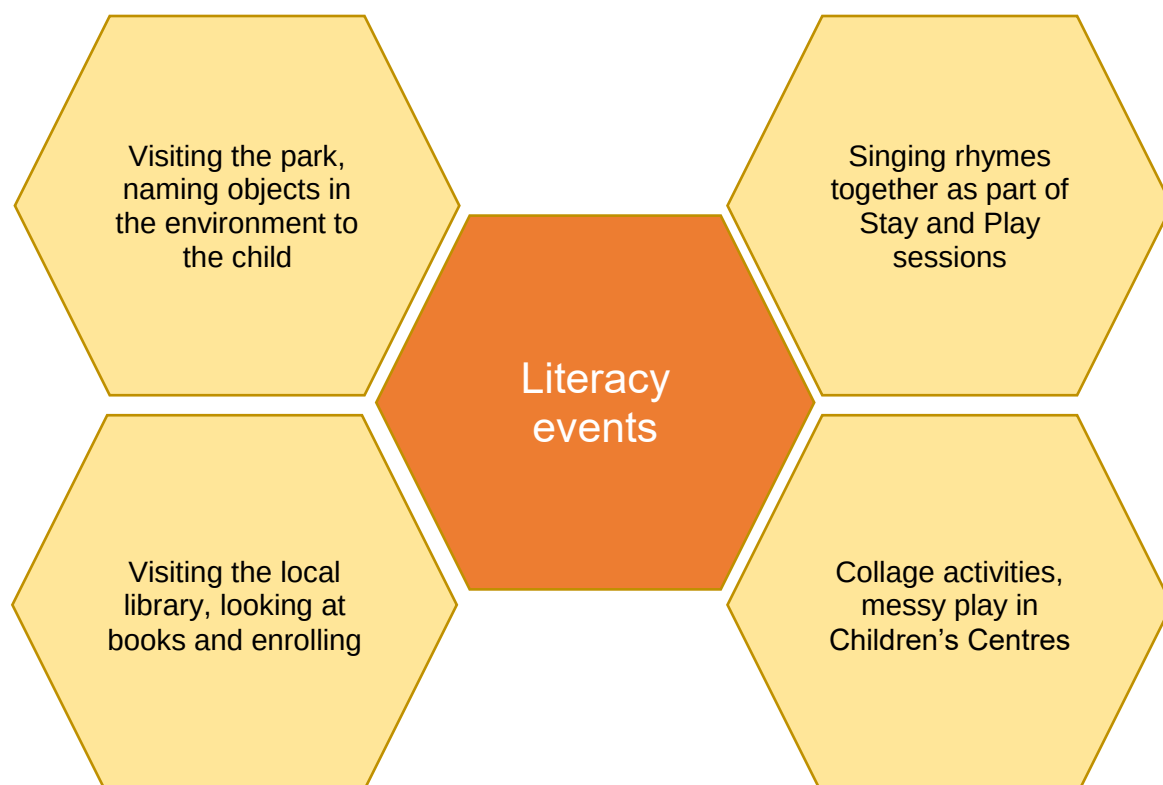
⁸ A linear mixed-effects regression model was fitted to the practitioner confidence data, using time of assessment (pre/post programme), ORIM area (Opportunity, Recognition, Interaction and Model) and pre-literacy strand (*Communication and language*, *Rhymes, songs and storytelling*, *Books* and *Mark-making*) as fixed predictors. Practitioner was added as a random effect in the model. The outcome was confidence (0/1) with 'very confident' responses scored as 1 and 'quite' or 'not very confident' scored as 0. The analysis showed a main effect of pre-literacy strand with a significantly lower proportion of 'very confident' responses provided for the *Communication and language* strand (*Communication and language*, $\beta = -0.90$, $z = -2.23$, $p = .03$). There was no observed effect for time of assessment ($\beta = -0.16$, $z = -2.23$, $p = .77$), but time of assessment interacted with ORIM area (post*Model, $\beta = 1.69$, $z = 2.06$, $p = .04$; post*Opportunity, $\beta = 3.14$, $z = 3.58$, $p < .001$; post*Recognition, $\beta = 3.12$, $z = 3.79$, $p < 0.001$). The interaction between time of assessment and ORIM area was followed up using the Emmeans package in R (Lenth, Singmann, Love, Buerkner, & Herve, 2018). This showed a significantly greater number of 'very confident' responses for Recognition than Interaction pre-programme, $p = .05$. However, post-programme there was a significantly lower proportion of 'very confident' responses for Interaction when compared to Opportunity, $p = .01$, Recognition, $p = .03$ and Model behaviours,

Practitioners seemed to gain in confidence over the duration of the programme, with a significantly higher proportion of 'very confident' responses post- than pre-programme for three of the four ORIM behaviours (Opportunity, Recognition and Model). In contrast, pre-programme, practitioners reported feeling equally or more confident in identifying opportunities for Interaction (69%) than the other ORIM behaviours (54-69%), but by the end of the programme this had reversed: practitioners were now least confident in identifying Interaction opportunities (69%) and more likely to report feeling 'very confident' in identifying opportunities to promote Opportunity, Recognition and Model behaviours (83-85%).

3.6 Fidelity to the programme

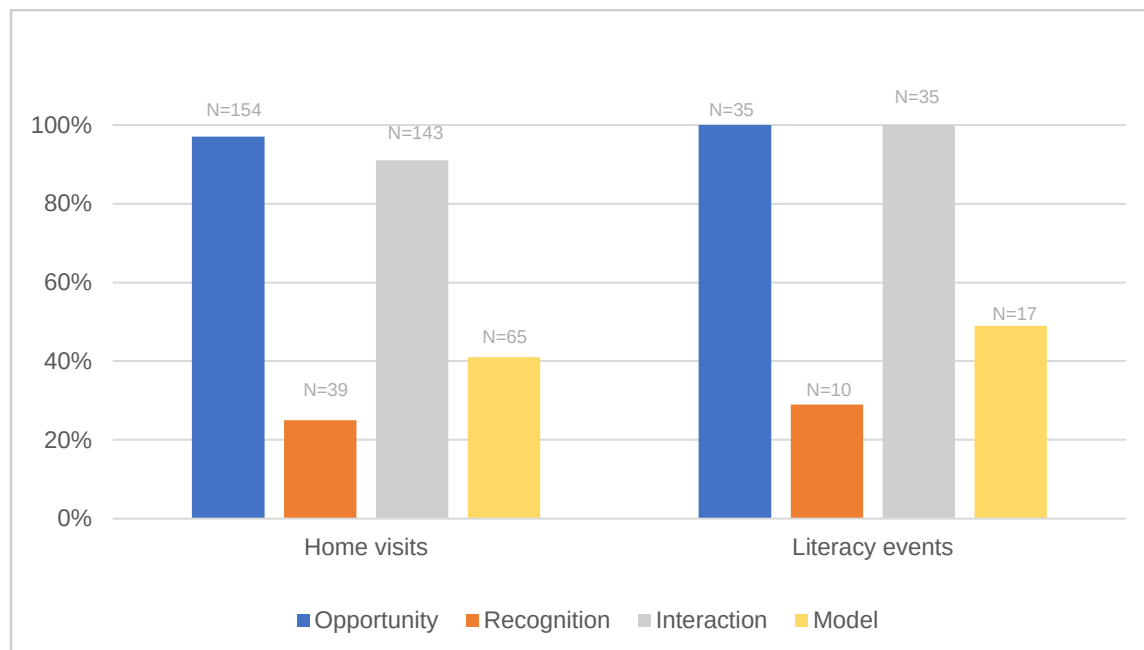
During the home visits and events, practitioners made a note of which activities they performed as well as the ORIM element(s) and pre-literacy strand(s) that they covered. [Figures 10](#) and [11](#) provide some examples of the types of activities that practitioners introduced to families split according to home visits and events. Each Figure groups activities according to the four pre-literacy strands. For example, playing games targeted *Communication and language*, singing rhymes targeted *Songs, rhymes & storytelling*, providing and sharing books targeted *Book reading* whilst playing with play dough targeted *Mark-making*. It is worth noting, though, that some activities could simultaneously target more than one strand. For instance, singing songs with the child targets both *Songs* and *Communication*. Sharing books targets the *Books* strand but also the child's understanding of *Language* if the practitioner read the story aloud.

$p = .02$. A significantly higher proportion of 'very confident' responses was seen post- than pre-programme for Opportunity, $p < .001$, Recognition, $p < .001$ and Model, $p = .01$, but not for Interaction, $p = .77$.

Figure 10: Examples of home visit activities carried out by practitioners**Figure 11: Examples of literacy events carried out by practitioners**

We analysed which pre-literacy strands and elements of the ORIM framework the practitioners targeted in the visits and events to investigate the extent to which the different aspects of the ORIM framework were covered. [Figure 12](#) shows the number and percentage of visits and events that included each ORIM element. Our analysis was based solely on completed notes that we had from practitioners (notes of 158 home visits and 35 literacy events).

Figure 12: Practitioner coverage of the ORIM framework



Opportunity and Interaction were well met with over 90% of the home visits and events targeting these elements of the framework. Practitioners presented Opportunities to the families by providing them with relevant resources to carry out different tasks (e.g. books, play dough and musical instruments) and taking them to places that encourage their literacy development (e.g. the library and messy play sessions). Practitioners also engaged in various literacy behaviours with the child and encouraged the parent(s) to get involved by sharing activities together, therefore targeting Interaction (e.g. reading together, making musical instruments and playing games together).

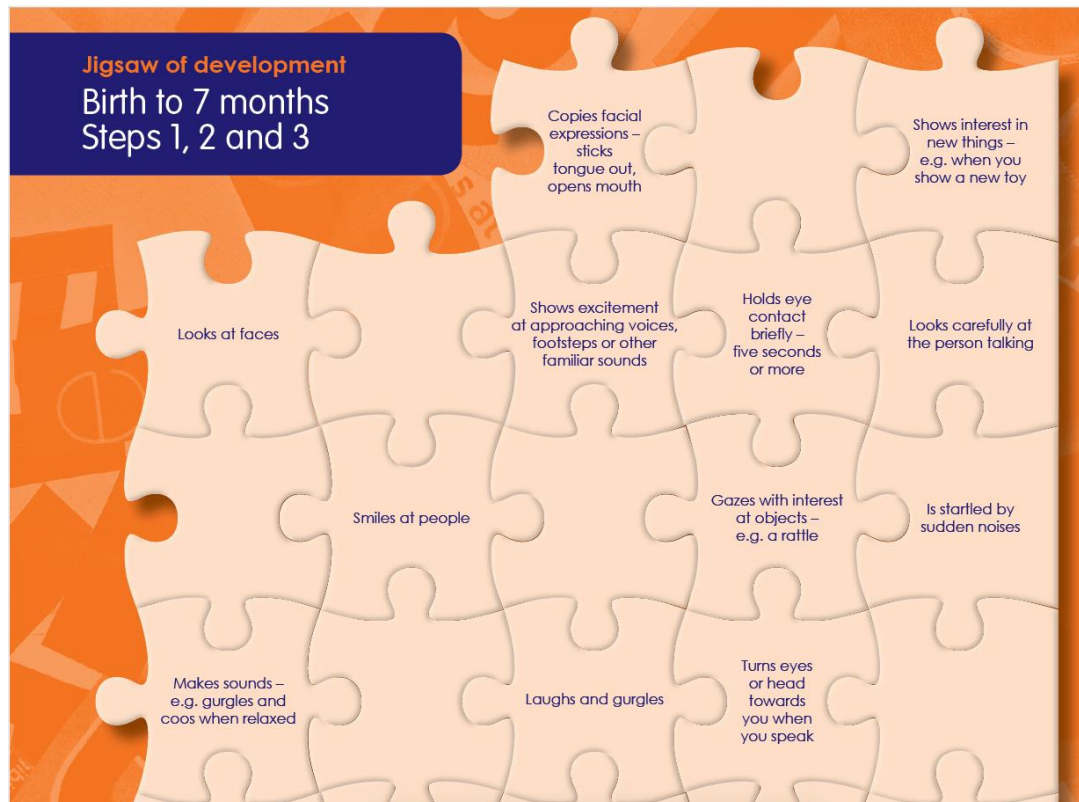
However, Recognition and Model appear to be less frequently targeted in the programme with Recognition being the least covered aspect of the ORIM framework.

Recognition involves the practitioner and/or parent showing the child praise for a positive literacy behaviour that they perform (e.g. saying 'Well done' when the child says a particular word or makes marks). Recognition could also be met if the practitioner discussed typical stages of the child's literacy development with the parent, encouraging them to use the achievement Jigsaw of development (provided in the REAL pack, see [Figure 13](#)). For instance, a child will respond using babble and vocalisations before words or 'write their name' with basic shapes and lines before producing recognisable letters. Parents can use the Jigsaw to circle or note down the different skills that their child shows at different stages of development, encouraging them to recognise the significance of small steps and to provide positive feedback to the child when they master them. The Jigsaw of development was rarely mentioned in the practitioners' visit and event notes; the majority of instances of

Recognition involved praising the child's efforts when they co-operated in a literacy behaviour. However, it could be that practitioners were simply less likely to comment on these finer details in the visit notes, so it is important to treat these results with caution.

Figure 13: Example skills from the Jigsaw of Development

(Copyright National Children's Bureau, 2018. Developed from *Early Years Support Developmental Journal*)



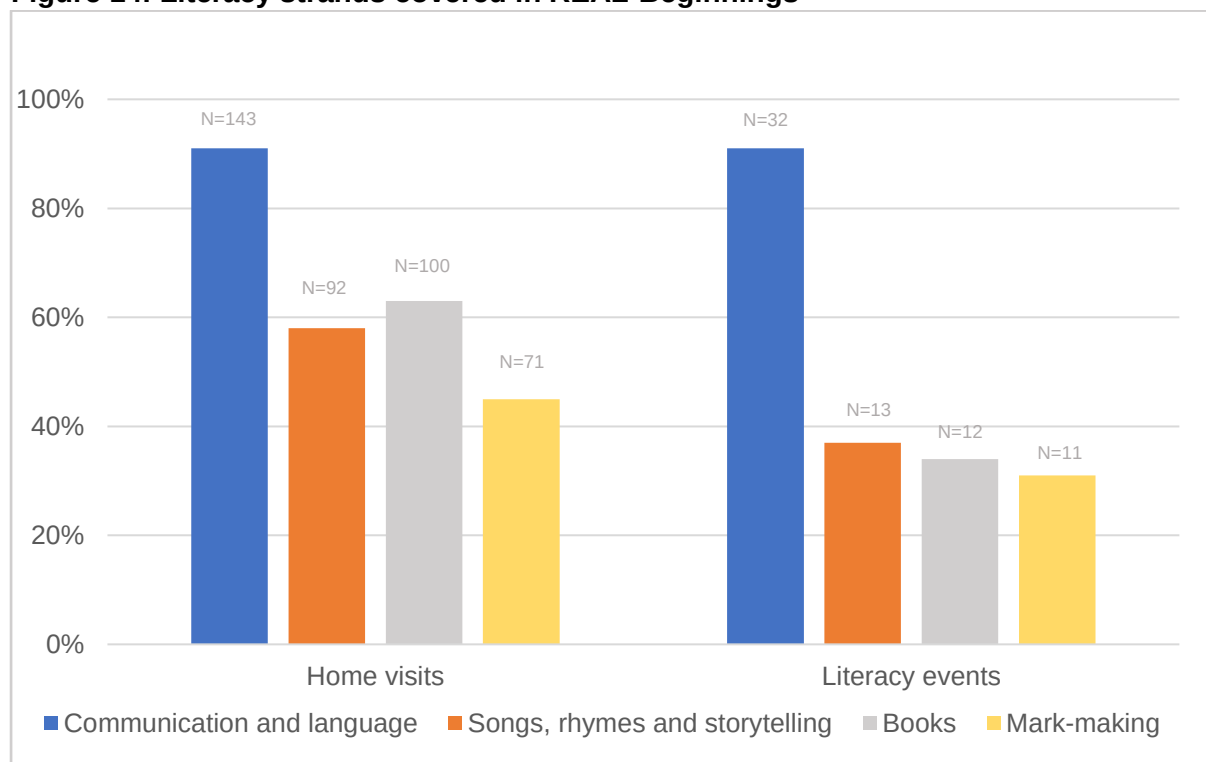
Modelling involved the practitioner and/or parent showing the child how they engage in a particular literacy behaviour and providing some form of explicit commentary on what the person is doing and/or why they are doing it to make the literacy act more explicit (e.g. 'I'm reading this book because it looks interesting' or 'I'm writing this card for dad's birthday tomorrow'). Practitioners often stated that they or the parent modelled an activity but it is difficult to tell from the notes whether this type of verbal commentary accompanied the actions. We erred on the side of caution and credited instances of Model in these situations, but this means we may have over-estimated the frequency with which Model, in the ORIM framework sense, was a focus of the visits and events.

The frequency with which the practitioners focussed on each pre-literacy strand also varied. [Figure 14](#) shows the number and percentage of visits and events that targeted each pre-literacy strand. The vast majority of visits and events included a focus on the child's *Communication and language*. There was a greater focus on *Songs, Books* and *Mark-making* in the home visits than during events with *Mark-making* the least targeted strand across both.

There may be some relation between the frequency with which the practitioners targeted these different pre-literacy strands and the frequency of specific parent-reported behaviours at home. As we saw in [Figure 8](#), parents in the REAL group received the highest Home Learning Environment scores for *Communication and language* and the lowest scores for *Mark-making* at the 24-month time-point, mirroring the reported focus of REAL visits and events. One possibility is that parents were sensitive to the specific activities that practitioners introduced them to during the programme, applying these more readily at home. However, we must be cautious in this interpretation because the Control families who had not received REAL visits showed a similar pattern of reported HLE behaviours.

On the other hand, when asked to what extent the REAL programme had supported them in the different pre-literacy strands, the highest percentage of parents reported being helped 'a great deal' by the work they had done with practitioners around *Mark-making* (see [Table 4](#)), closely followed by *Communication and language*, and it is these areas where parents in the REAL group (but not the Controls) showed the largest gains across the programme. It is not clear whether practitioners engaged in more work around *Mark-making* than was documented in the visit records or if, instead, a few focussed activities perhaps made a real impact in this area for parents' understanding of their children's development.

Figure 14: Literacy strands covered in REAL-Beginnings



3.7 Practitioner feedback

Practitioners' hopes for the programme were mostly met

In the post-REAL questionnaire, practitioners were asked whether the REAL programme had achieved what they hoped for with their respective families. Practitioners provided

responses specific to each family they worked with (N=24). Any personal names included in quotes have been anonymised to protect the identity of participants.

The vast majority of responses (N=22) stated that their hopes for the programme were met. Practitioners commented that they could see progress in the child's communicative development and that the programme had made a difference to parents' literacy behaviours at home.

"Yes as Sarah is now clearly talking in sentences and has great understanding. Parents feel there has been a vast improvement not just in communication but confidence as well and nursery have also reported this."

"I can see that this family has made lots of progress, James is keen and confident and Mum is very willing to learn."

"Yes, mum took on board ideas and it was evident that she had practised at home."

However, a few practitioners stated that the level of progress really depends on the commitment of each individual family. Home visit access and engagement from the parents on the visits was limited for some families due to coinciding life events.

"Yes it has although I do feel parents' commitment and the family environment can have an impact on the outcome."

"Commitment from families to offer activities in between visits/follow advice given I feel is essential to the final outcome for children."

"I had hoped for a little more but given the changes the family have had recently, moving house and a new baby I am satisfied with the progress made."

"Other than the last session, when Mum was busy with guests and the shop, I feel that the project was quite successful, and many of the expectations were met."

Practitioners reported various benefits of the programme

"Better parental engagement and understanding of how to connect with children to help with their development."

"The family have been introduced to many different activities and the child and Mum are a lot more confident."

"Has helped to provide opportunities for an isolated family to access activities in the wider environment for example the children's centre and park. The family have continued to visit the local parks."

However, practitioners did encounter some barriers

The majority of issues surrounded the family's engagement with the practitioner when they visited the home. Practitioners stated that some parents were too distracted or unwell to fully engage in some of the visits. The presence of siblings also had an impact on the efficacy of the home visits, as well as the openness of the child to engage.

“Older siblings present were at times a distraction as it was difficult to keep the child on task. Activities often descended into silly games and wrestling causing the child to be very giddy.”

“Mum was pregnant during the delivery of the programme which restricted some of the activities she could join in with- such as playing games at the child's level. Furthermore, despite the parents' engagement during the programme, I am not sure how much of the advice given is still being applied.”

“When Mum was not able to give her full attention (on the last visit), the child did not fully engage.”

“This child often had his own agenda. It was initially difficult to get him to focus but with lots of repetition and great input from mum, he was able to grasp the idea.”

Practitioners also reported more practical issues, particularly the scheduling of home visits around parents' work, *“parents work so trying to find suitable dates / times is difficult”* which may also explain why events were not as well attended as the home visits. A few practitioners also commented that the programme could have been more effective if there were shorter intervals between visits, *“the home visits were quite far apart and I found it more difficult to engage the families than when the visits are every week.”*

3.8 Case studies

Detailed case studies prepared by the practitioners based on their data and observations suggest that the REAL programme had a large impact on some families. Several children moved from below to at or above the expected language level over the duration of the programme (as measured by the ASQ and/or Wellcomm), and demonstrated improved confidence in approaching and engaging with others. The parent's skills and confidence in supporting their child's development also improved as a result of the programme.

Figures 15 to 17 summarise case studies from three families (pseudonyms are provided to protect the anonymity of participants). Each Figure is split according to the child's and/or parent's skills or behaviour pre-programme, any changes that were seen in the family post-programme and their plans for the future.

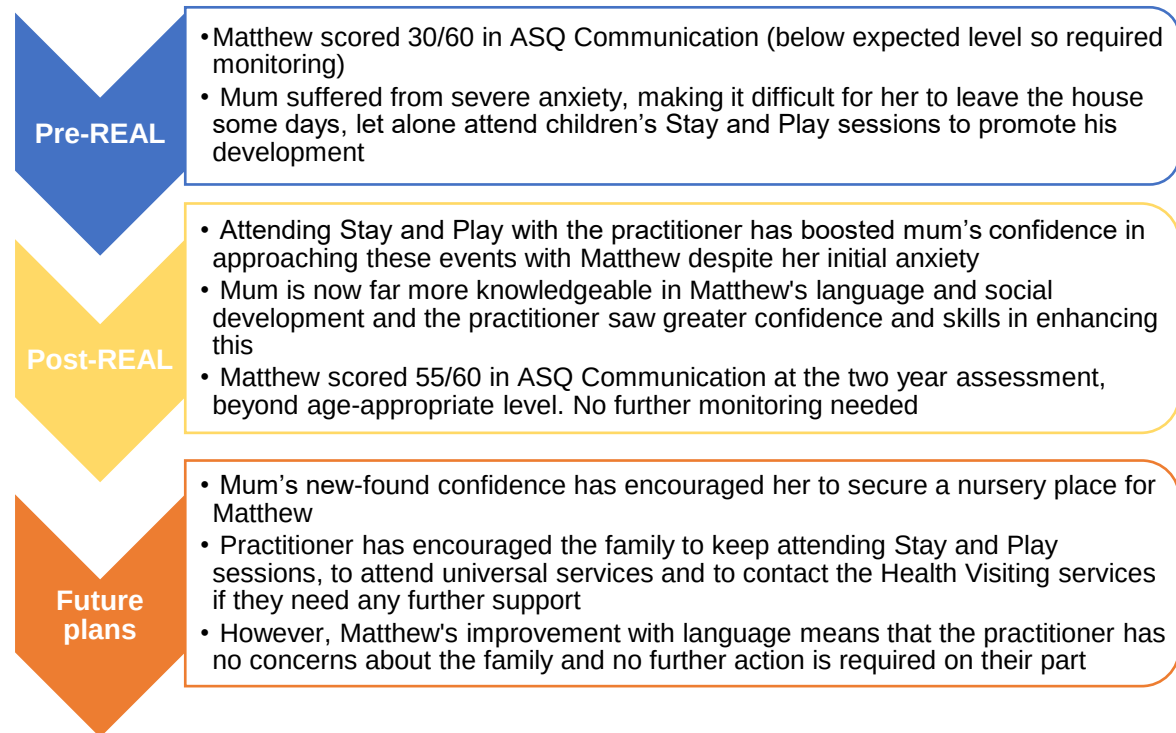
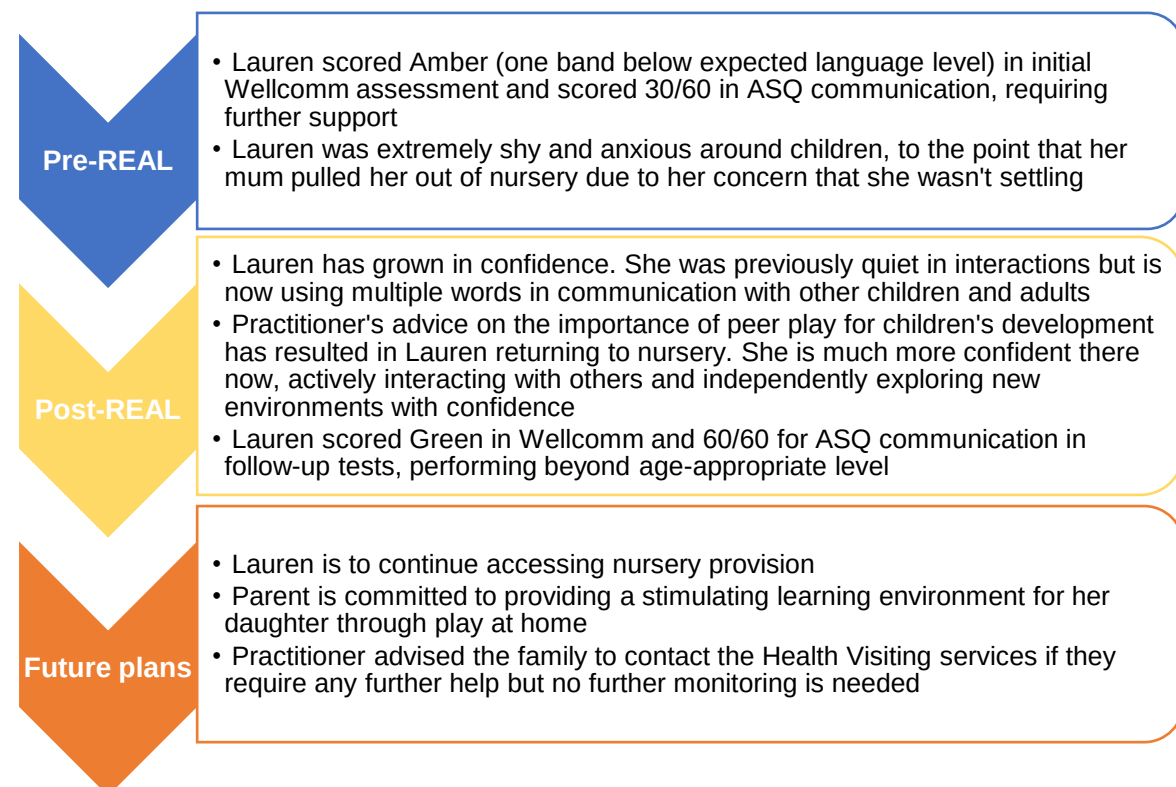
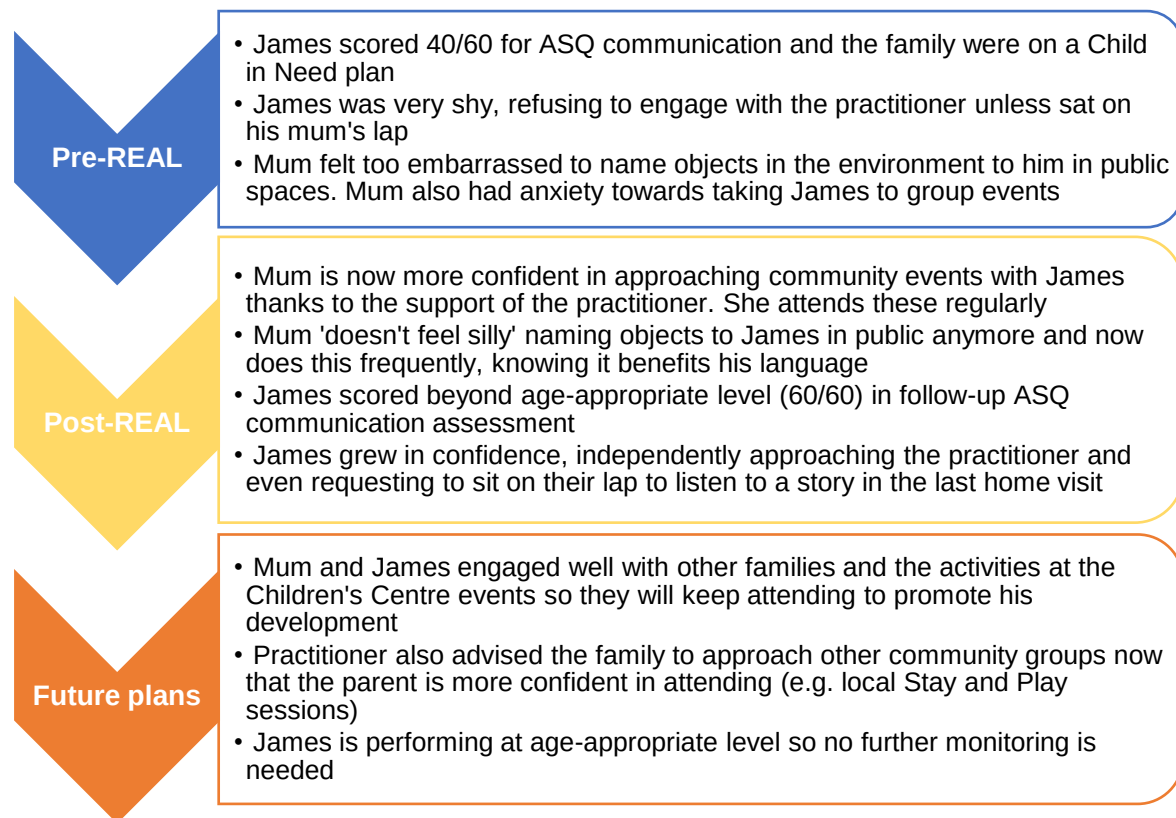
Figure 15: Matthew**Figure 16: Lauren**

Figure 17: James

4. Discussion

This project assessed the impact of the REAL framework, specifically the REAL Beginnings programme, on pre-literacy skills in under 2s, by comparing a group of families who participated in the REAL programme with a group of Control families.

Established measures were taken of the children's communicative development at the beginning and end of the study. In addition, novel measures were developed to assess children's pre-literacy skills at this age in the areas to be targeted by the REAL visits (the Child Development assessment) as well as the frequency of parent behaviours reflecting the ORIM-framework in promoting their child's early communicative development (the Home Learning Environment questionnaire).

Following the programme, we assessed the extent to which parents felt they had benefitted from the programme in relation to their ability to support different areas of pre-literacy development. We assessed the practitioners' confidence in implementing the ORIM framework during REAL visits and events with this age group using bespoke pre- and post-programme questionnaires. Finally, we used practitioner notes to document the extent to which different pre-literacy skills and strands of the ORIM framework formed the focus of visits and events.

Some of the findings appear promising for the REAL framework, while others are less conclusive.

4.1 Child development

With respect to **measures of the children's development**, we found that children in the REAL group were significantly more likely to achieve the expected level on our Child Development assessment post-programme than those in the Control group. However, the REAL group also showed a higher percentage of expected scores pre-programme than the Control group, so although the gap between the two groups had widened by 24 months, there could be some factor at work other than participation in the REAL programme which drove these differences.

4.2 Child language and communicative development

Although the REAL group had slightly higher scores than the Control group in other measures of the child's communicative development (UK-CDI pre-programme, UKBTAT post-programme, Wellcomm pre- and post-programme), the difference between the two groups' scores was not significant. This suggests that where we observed child development gains, these may be specific to the areas targeted by the programme or, alternatively, a result of demand characteristics (i.e. parents could have been aware of the areas targeted by practitioners during the visits and so reported improvements in their child's abilities in these areas post-programme), rather than reflecting a broader impact on the children's language and communication skills.

KEY FINDINGS

- Children in the REAL group made significantly greater gains on a measure of Child Development that focussed specifically on areas targeted by the REAL programme than those in the Control group. However, there was no significant difference between the groups in their scores on other language and communication measures (UK-CDI, UKBTAT, Wellcomm).

4.3 Parent behaviours

With respect to measures of **parent-supportive behaviours for development**, we found a similar pattern of results. In the Home Learning Environment data, parents in both groups showed a significant increase in reported HLE behaviours over the course of their child's development. This is reassuring as previous research has found that primary-school-aged children growing up in a strong home learning environment are more advanced in their language ability and show higher levels of confidence and sociability (Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2004).

In addition, parents in the REAL group were more likely to report ORIM-related behaviours than the Control group post-programme in the areas of *Communication & language* and *Mark-making*. However, we must be cautious in concluding that participation in the REAL programme resulted in these differences between groups because we also found a higher frequency of reported behaviours with respect to *Books* in the REAL group than in the Control group pre-programme. Thus there could be existing differences between the parents in the two groups that led to the differential outcomes, rather than participation in the programme. In addition, the same demand characteristics could be at play (i.e. parents could have been aware of the areas targeted by practitioners during the visits and so reported a higher frequency of these behaviours post-programme).

KEY FINDINGS

- Parents in the REAL group reported a higher frequency of behaviours related to a supportive Home Learning Environment post-programme, focussing on areas targeted by the REAL intervention, than those in the Control group, particularly in the areas of *Communication & language* and *Mark-making*. However, there was also a higher frequency of reported behaviours pre-programme in the REAL group compared to the Controls for *Books* (perhaps suggesting that the groups were not completely evenly matched from the outset), and both groups showed a significant increase in ORIM behaviours across the four pre-literacy strands over the course of the study.
- Parents in both groups reported more frequently engaging in activities to support *Communication & language*, and *Songs, rhymes & storytelling* in comparison to *Mark-making*, and more frequently provided Opportunities than engaging in Modelling behaviours for their children.

4.4 Parent and practitioner impressions of the programme

In terms of **parent and practitioner impressions of the programme**, both groups were very positive about the REAL programme in general. The majority of parents reported that the programme had helped them ‘a great deal’ in supporting their child’s literacy development and that they found the practitioners’ ideas to be interesting and useful to implement. Practitioners also commented that they could see improvements for some children in both their pre-literacy abilities and their confidence in engaging with others. However, practitioners highlighted that the benefits were somewhat reduced for families who were not fully engaged with the programme. This could go some way in explaining the discrepancy between practitioner-reported benefits and the lack of clear differences in other group-level measures.

KEY FINDINGS

- Parents who received the REAL intervention reported that they valued the input they had received from practitioners and felt it had improved their ability to support their child in all areas targeted by the REAL programme, but particularly in *Mark-making* and *Communication & language*. This is supported by greater increases in the reported frequency of these behaviours in the REAL group post-programme.
- Practitioners reported greater feelings of confidence in their ability to implement the Opportunities, Recognition and Model strands of the ORIM framework to target the four areas of pre-literacy that form the focus of the REAL programme at the end of the study in comparison to at the beginning. However, they were less confident around the Interaction strand, especially in relation to supporting *Communication and language*.
- Case studies and feedback from Practitioners provides further evidence about the perceived positive impact of the REAL programme for some families, and the problems encountered with families who were less engaged.

4.5 Potential areas for focus in the implementation of the programme

Finally, our analyses suggest **potential areas for focus in the implementation of the REAL Beginnings programme**. Parents (in both groups) reported engaging in a higher frequency of *Communication & language*, and *Songs, rhymes & storytelling* in comparison to *Mark-making*, while we observed that practitioners were most likely to focus on *Communication & language* in the home visits and events, and somewhat less likely to focus on *Mark-making*. Similarly, parents (in both groups) reported more frequently providing Opportunities than engaging in Modelling behaviours for their children, while we observed that practitioners were more likely to focus on Opportunities and Interaction than on Recognition or Model behaviours with parents. The apparent alignment between what

parents report doing and what practitioners choose to focus on suggests that practitioners may be building on what parents already do, and there may be room for growth in introducing parents to new pre-literacy activities and encouraging different kinds of supportive behaviours.

In addition, although practitioners often focussed on the *Communication & language* strand, and Interaction behaviours, they reported lower levels of confidence in supporting Interaction behaviours at the end of the programme than the other elements of the ORIM framework, especially in relation to *Communication & language*. Thus, there may be a need for further focussed training in this area to maximise the impact of practitioner activities with parents.

KEY FINDINGS

- Practitioners were most likely to focus on *Communication & language* in the home visits and events, and somewhat less likely to focus on *Mark-making* (based on visit records). They also focused more on Opportunities and Interaction than on Recognition or Model behaviours with parents.

4.6 A note of caution

There are a number of reasons why we must be cautious in our conclusions regarding the effects of the REAL Beginnings intervention from this study.

4.6.1 Sample size

The overall sample size was small (43 families) and, in particular, the Control group was much smaller than originally planned (13 families). This means that we do not have sufficient power in the data to detect any small but reliable differences between the groups. We noted that children and parents in the REAL group tended to score more highly than those in the Control group, but these differences often failed to reach significance. We also know from the practitioner comments that some families in the REAL group failed to engage fully with the programme, and this is likely to dilute any potential impacts of the programme. In a larger sample it would be possible to control for the degree of engagement with the programme when assessing its effects on child and parent measures. However, recruitment proved difficult as evidenced by the high drop-out rate (non-participation from 18 families), so further work is needed to reach and engage a wider range of families in order to assess the impact of the programme.

4.6.2 Randomisation issues

The allocation of participants to the REAL or Control group was, in practice, not fully randomised, potentially impacting on the extent to which the two groups were comparable pre-programme. Practitioners stated that a small number of participants who were initially allocated to the REAL group were moved to the Control group due to a lack of engagement.

A comparable baseline is essential in order to assess the effectiveness of the intervention. In addition, as noted above, children and parents in the REAL group appeared to score more highly on some measures than the Control group before the intervention began. With a small sample size, these apparent differences could be just due to chance. However, it is important to rule out possible differences in family levels of engagement and interest in their child's development between the Control and REAL groups to draw firm conclusions regarding the impact of the programme. In other words, parents who are more engaged may be more likely to provide better support for their child's development, even without taking part in the REAL intervention programme.

4.6.3 Issues with self-report measures

The use of self-report measures to assess the level of Child Development and the frequency of behaviours in the Home Learning Environment is potentially problematic. Parents (and practitioners) were aware of whether they had taken part in the REAL programme prior to completing the post-programme questionnaires. Parents in both groups, but particularly those who had received REAL visits, may have overestimated both their child's level of development and the frequency of their home learning environment behaviours. Video observations of parent-child interactions would provide a more reliable measure, but this type of data is extremely labour-intensive to collect and analyse, and may not be acceptable to participants.

4.6.4 Lack of standardised communicative development measures for EAL children

Finally, half of the children in the sample were exposed to a language other than English at home, introducing a number of challenges with respect to measuring their communicative development. Due to a lack of standardised measures for children of this age, of our measures only the UKBTAT assessment is specifically designed for an EAL population, and time restrictions meant we were only able to use an adapted form of this assessment. Moreover, although we designed our Child Development questionnaire using statements that are not specific to English, some behaviours may be more encouraged at home than others depending on the family's cultural background. The small sample size meant that it was not meaningful to look at differences in the impact of the programme as a function of the child's language group or cultural background.

KEY FINDINGS

- The variability in engagement, coupled with both a small sample size and some divergence from random allocation to the intervention vs. control groups, means that we cannot draw solid conclusions about the effectiveness of the intervention. However, there are some indications that aspects of the programme may be having a positive impact on the families involved. A larger study with a full Control group is needed to determine the extent to which the REAL programme is responsible for any changes in child development and parent behaviours.

4.7 Overall Conclusions

This pilot study of the REAL Beginnings programme has provided some initial signs that the intervention may impact positively on children's early communicative development and parents' provision of a positive Home Learning Environment. In addition, both practitioners and parents report positive experiences of the programme, and overall practitioners seem to gain in confidence in their ability to implement the programme effectively. However, a larger scale study is needed to provide further data to better determine the impacts of the programme. Importantly, longitudinal data are needed to provide an indication of the longer term impacts on children's developing language skills. Further focussed training and evaluation may also be helpful in supporting practitioners to implement all areas of the ORIM framework effectively.

4.8 Next Steps for Oldham's Early Years Services

Bridgewater Right Start Service will continue to monitor the progress of all children who were offered and/or who participated in the initial REAL Beginnings pilot programme. This longitudinal study will provide qualitative and quantitative data to allow a more comprehensive understanding of the extent to which the REAL Beginnings programme may impact on children's learning and development over time.

A number of learning and development opportunities have become evident since the introduction of the REAL Beginnings Programme. Bridgewater Right Start Service has now incorporated REAL Beginnings within their universal service offer for children following their 9-12 month ASQ assessment via the Healthy Child Programme. Findings from the study have been used to inform further development of REAL pathways of support. This includes the embedding of REAL Beginnings and including REAL within a Forest Babies programme as part of Oldham's wider Right Start Service delivery. For practitioners, further training and development around how to implement the programme is underway to ensure practitioners have the knowledge and confidence to deliver all aspects of the ORIM Framework.

References

Alcock, K., Meints, K. & Rowland, C. (2020). *The UK Communicative Development Inventories: Words and Gestures*. J&R Press Ltd.

Cattani, A., Abbot-Smith, K., Farag, R., Krott, A., Arreckx, F., Dennis, I., & Floccia, C. (2014). How much exposure to English is necessary for a bilingual toddler to perform like a monolingual peer in language tests? *International Journal of Language and Communication Disorders*. DOI: 10.1111/1460-6984.12082

Department for Education, *Oldham Social Mobility Delivery Plan. Opportunity Area 2017-20: A promise to children and young people in Oldham*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/675046/Social_Mobility_Delivery_Plan-Oldham.PDF

Early Education (2012) *Development Matters in the Early Years Foundation Stage* <https://www.early-education.org.uk/development-matters-early-years-foundation-stage-eyfs-download>

Floccia, C., Sambrook, T. D., Delle Luche, C., Kwok, R., Goslin, J., White, L., Cattani, A., Sullivan, E., Abbot-Smith, K., Krott, A., Mills, D., Rowland, C., Gervain, J., & Plunkett, K. (2018). Vocabulary of 2-year-olds learning English and an Additional Language: Norms and effects of linguistic distance. *Monographs of the Society for Research in Child Development*, Serial No. 328, Vol. 83, No. 1.

Hurd, A., & McQueen, D. (2010). *WellComm: A Speech and Language Toolkit for the Early Years*. GL Assessment.

Lenth, R., Singmann, H., Love, J., Buerkner, P. & Herve, M. (2018). *Emmeans: Estimated marginal means, aka least-squares means*. R package

National Children's Bureau (2013) *Early Years Developmental Journal* <http://www.ncb.org.uk/sites/default/files/uploads/files/merged-early-years-developmental-journal.pdf>

Nutbrown, C., Hannon, P., and Morgan, A. (2005). *Early Literacy Work with Families: Research, Policy and Practice*. London: Sage.

Public Health England mandated Health Visitor Offer (2021) <https://ihv.org.uk/news-and-views/news/public-health-england-publishes-updated-healthy-child-programme-0-to-19-health-visitor-and-school-nurse-commissioning-guidance/>

Squires, J., Bricker, D., & Twombly, E. (2015). *Ages & Stages Questionnaires®: Social-Emotional, Second Edition (ASQ®:SE-2): A Parent-Completed Child Monitoring System for Social-Emotional Behaviors*. Baltimore: Paul H. Brookes Publishing Co., Inc.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (2004). *The Effective Provision of Pre-School Education (EPPE) Project: Final Report*. London: DfES and Institute of Education, University of London.