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Running head: PARENT-INFANT BOOK ENGAGEMENT

Parents reading with their toddlers: the role of personalisation in book engagement

Natalia Kucirkova
The Centre for Education and Educational Technology, The Open University, United Kingdom
David Messer
The Centre for Education and Educational Technology, The Open University, United Kingdom
Denise Whitelock
Institute for Educational Technology, The Open University, United Kingdom

Corresponding author: Natalia Kucirkova, The Open University, FELS/CREET, Briggs building, Walton Hall, Milton Keynes, MK7 6AA, UK. Telephone: 01908 655019. Email: n.kucirkova@open.ac.uk

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1 **Parents reading with their toddlers: the role of personalisation in book engagement**

2

3 **Abstract**

4 The aim of this study was to investigate the effects of personalised books on parents' and
5 children's engagement during shared book reading. Seven native English parents and their
6 children aged between 12 and 33 months were observed at home when sharing a book made
7 specifically for the child (i.e. a personalised book), a comparable book with no personalised
8 content, and a favourite book of the child. The interactions were videotaped and later coded
9 to provide information about the frequency of behaviours that indicated engagement with the
10 books. Statistical analyses revealed that with the personalised books in comparison to the
11 non-personalised books, children and parents showed significantly more smiles and laughs.
12 In addition, there was significantly more vocal activity with the personalised than with the
13 non-personalised and child's favourite books. It appeared that most of the children's positive
14 affect with the personalised books was in response to the content of the book, while the
15 parents' smiles occurred mostly in response to a smile or laugh of the child. These findings
16 are among the first to suggest that personalised features of books result in specific, distinct
17 responses in parents and children during shared book reading.

18

19 **Keywords**

20 shared reading, parent-child interactions, Books for babies, young children, story book
21 interactions

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1 **Introduction**

2 Parent-child shared book reading has been identified as one of the most ecologically valid
3 and powerful contexts in which to study and foster children's early language and literacy
4 skills (van Kleeck et al., 2003; Justice and Kaderavek, 2002; Senechal and Lefevre, 2002).
5 Numerous research efforts and investigations have been concerned with the questions of how
6 much and in what way shared book reading benefits children's early literacy development.
7 Correspondingly, the premise of many early parent book reading programs is that the earlier
8 parents start reading to their children, the better for their educational development (for
9 example Dolly Parton's Imagination Library, see [http:// imaginationlibrary.com](http://imaginationlibrary.com)). Research
10 findings indicate that early engagement in book reading is predictive of children's oral
11 language (Crain-Thoreson and Dale, 1992)
12 and associated with reading achievement (Connor et al., 2009). Reading aloud with babies
13 has been therefore considered as one of the best predictors of children's early reading success
14 (Neuman et al., 2000) and this since pioneering research on parent- child and teacher-child
15 book reading (see Heath, 1982 and Cochran-Smith, 1984 respectively). However, despite a
16 relatively large literature about shared book reading with pre-schoolers and its significance for
17 children's development, little is known about very young children's engagement with
18 different types of books.

19 Early shared book reading usually involves the use of commercial books from
20 publishers which are designed for young children. These books are adapted to the age and
21 interests of children and for the youngest children often include visual and tactile features
22 such as pop-up pages, textured material and other features designed to capture the interest of
23 children who are starting to become familiar with books and their purposes. The content of
24 these books is not always aligned with the world of young children and their parents, and
25 recently there have been calls for the development and distribution of more socio-culturally

1 relevant children's books (see for example Janes and Kermani, 2001). We define books that
2 are socio-culturally sensitive and which have a personal meaning for a child personalised
3 books. A crucial feature of personalised books is that they contain information which is
4 meaningful and relevant to one particular child. The books' personalised character is
5 achieved by embedding text and pictures which are unique to a specific child. The level of
6 personalisation in children's books can vary from commercially produced books which
7 merely substitute the main character's name with the child's name (see for example
8 Demoulin, 2003), to books made entirely by parents (or main caregivers) specifically for a
9 child (see Kaderavek and Pakulski, 2007). It is the latter which constitutes the focus of the
10 present study, guided by the recent concern about the personal meaningfulness and socio-
11 cultural relevance of book reading for children across families (Taylor et al., 2008).

13 **Theoretical framework**

14 In our research, we adopt a neo-Vygotskian emphasis on socio-culturally meaningful and
15 sensitive inclusion of families in learning and activities promoting literacy such as shared
16 book reading. Following the work of Moll and his colleagues within the *funds of knowledge*
17 framework (see Gonzalez et al., 2005), this investigation acknowledges the cultural-historical
18 context of early literacy acquisition, leading to personalised literacy instruction. In accordance
19 with this research agenda, creating and sharing personalised books paves the way for new
20 directions in home shared book reading. For parents, this process promotes feelings of
21 empowerment, ownership and agency in their children's literacy instruction (Janes and
22 Kermani, 2001). For children, personalised books are part of personalised learning, which has
23 been recently described as revised code for education (Hartley, 2007). In Gonzalez and
24 colleagues' words, through self-made personalised books, families' funds of knowledge (i.e.

1 parents' own cultural and personal experiences, traditions and home languages), become part
2 of literacy education.

3 The second theoretical premise which frames the present study is the
4 acknowledgement of multiple or transactional influences in shared book reading (see Fletcher
5 and Reese, 2005; Anderson et al., 2009, April). Each shared book reading session is unique
6 and needs to be evaluated in the light of the specific characteristics of all three session
7 participants: adult, child and the book. The transactional position goes beyond general
8 recommendations advising parents on how often or how best to read to their children (cf.
9 Whitehurst et al., 1988), as it takes into account the type of book being read, children's and
10 parents' language competence and other unique characteristics of each shared book reading
11 session, such as for example the influence of different book genres, formats or media on
12 parent-child interaction (see Kim and Anderson, 2008; Moody et al., 2010). In line with
13 findings from cross-cultural shared book reading research, different parents' reading styles
14 promote different skills in children and what works for some families may not work for others
15 (Reese and Cox, 1999). Thus, our investigation considers both parent's and child's
16 engagement in relation to different types of books.

17

18 **Personalisation: promoting parent-child engagement with books?**

19 Parent-child engagement with books is a desired outcome of many early reading intervention
20 programs and engagement with books can be investigated using a range of qualitative and
21 quantitative techniques. Obtaining valid self-reports of the feelings and views of young
22 children is extremely difficult and because of this it was decided to carry out a quantitative
23 coding of both the children's and parent's engagement during their shared book reading.
24 Another factor that influenced this decision was the comparative ease in identifying

1 behaviours which provide good indications of engagement with both young children and
2 parents.

3 Engagement has been operationalized in a range of different ways (see for example
4 Lynch, 2009; Moody et al., 2010). As Baker et al. (1996: xv) have written: ‘the specific
5 meaning attached to the term varies from writer to writer, the general sense is that engagement
6 is a highly desirable characteristic of reading’. When broadly defined, engagement includes
7 concepts like a child’s interest, involvement and active participation in book reading (Cline,
8 2010). In a study of traditional and e-book engagement of 25 pre-schoolers, Moody et al.
9 (2010) considered engagement in terms of child’s persistence, compliance, or enthusiasm
10 during the session. In pre-schoolers and older children, engagement is often defined as
11 involving joint attention, and has been found to be related to children’s future language skills
12 (Tomassello and Farrar, 1986). In our study, engagement was defined to reflect young
13 children’s active participation in shared book reading and to identify specific characteristics of
14 engagement which can be quantified through observation of a small group of parents and their
15 children. Specific behaviours that were coded as engagement were identified through a
16 comprehensive literature review and included the number of pointing gestures, frequency of
17 vocal activity, number of smiles and laughs, as well as the frequency of behaviours that
18 signify disengagement (such as yawns or restless movements).

19

20 **Children’s engagement with personalised books**

21 There are a number of reasons to expect that personalised books will promote aspects of
22 children’s book engagement. Personalised books are created by people who know their
23 children best (usually their parents), and who can capitalise on parent-child shared
24 experiences and preferences when creating the books. The books are inherently full of
25 parents’ positive affect and as a result are expected more than any other books to positively

1 engage children. Bus (2003: 12), following a series of studies on parent-child attachment and
2 book reading behaviour, concluded that a child's motivation and learning depend on the
3 'parental ability to bridge the child's world and the world of the book by using their intimate
4 knowledge of the child's personal experiences'. A child's interest in a personalised book may
5 be further facilitated by his or her increased comprehension of the story: in Bracken's (1982)
6 pioneering work with struggling readers, story comprehension was enhanced by embedding in
7 the standard story some personal information (such as substituting the main character's name
8 with the child's name). In Demoulin's work (2003), merely personalising some elements of
9 books for kindergartners was found to improve their reading recall by nearly 50%. In
10 addition, personalised books offer the opportunity to build directly upon children's knowledge
11 and make the engagement in a learning task more meaningful. Parents who are sensitive to
12 their children's literacy, and in particular, language abilities, can adjust the book and their
13 interaction level to the child's zone of proximal development (see Vygotsky, 1978),
14 encouraging children's participation at their own developmental level. This is likely to lead to
15 increased interest and attention, as autonomy, competence and relatedness are known
16 motivational factors in learning (McCaleb, 1995).

17

18 **Parents' engagement with personalised books**

19 Just as personalised books might be anticipated to engage young children, one might also
20 expect that their content will promote parents' engagement. Namely, given that personalised
21 books generate a positive emotional response in children, they are likely to spark interest also
22 in the books' authors (i.e. children's parents or their main caregivers), who through the book
23 creation, feel empowered and involved. Parents' enjoyment and engagement with
24 personalised books was investigated by Janes and Kermani (2001). Caregivers of an
25 immigrant and low-income community participating in the Family Literacy Tutorial Project

1 reported that having to read pre-selected books was perceived as ‘punishment’ (Janes and
2 Kermani, 2001: 480). It was only when parents were encouraged to create their own books
3 for children that their overall perception of reading shifted from ‘reading as punishment’ to
4 ‘reading as pleasure’ (Janes and Kermani, 2001: 461). Cross-cultural research further
5 indicates that a miss-match between book content and parental values reduces parental
6 involvement in shared book reading. Studies show that there is a widely documented cross-
7 cultural variability in parents’ beliefs of what constitutes appropriate literacy materials and
8 early teaching at home (van Kleeck, 2006), with limited resources and lack of confidence
9 being barriers to parents’ positive engagement in book reading (Persampieri et al., 2006).
10 While book gifting schemes such as Bookstart address the tangible constraints to home book
11 reading (see www.bookstart.org.uk), socio-culturally based research has been concerned with
12 parents’ competency constraints as a barrier to their interest in shared book reading (Ada,
13 1988; Delgado-Gaitan, 1994). In this tradition of research, parents’ involvement in book
14 construction, and importantly, in the choice of book content, is considered as an
15 empowerment tool for parents’ reading engagement. In her case study of family socialisation
16 documented in households of Mexican-American and Mexican-immigrant families, Delgado-
17 Gaitan (1994), encouraged parents to link the book content to their own lives. This led, inter
18 alia, to parents’ more engaged interaction when reading with their children. Consequently, it
19 might be expected that parents will be more engaged and positive about books that they have
20 had some role in creating and that they can relate to their own and their children’s lives.
21 Therefore, in addition to child’s engagement, we decided to investigate the influence of
22 personalised books on parents’ engagement during book reading. In order to match the
23 measures of children’s behaviour, we coded instances of parents’ pointing gestures, vocal
24 activity, smiles and laughs and less engaged behaviours.

25

1 **Parent-child mutual positive engagement with personalised books**

2 As conceptualised in the current study, personalised books created by parents can successfully
3 bridge the worlds of the book and of the child to capitalise on parents' and children's
4 knowledge and values associated with shared book reading (Ada et al., 1988; Janes and
5 Kermani, 2001). There is therefore a good reason to believe that personalised books will not
6 only promote parents' and children's positive engagement, but also support a more equal
7 contribution from both in the interaction, which is a further prediction that we wished to
8 investigate. Balanced interactions may have various benefits for children. It is likely that
9 equality of positive involvement is associated with more balanced scaffolding where both
10 child and parent contribute to the interaction process, rather than one person dominating the
11 interaction with a likely failure to build on the other's interest or preferences. In their
12 recommendations to assessors concerned with the 'success' of a book reading session,
13 Kaderavek and Sulzby (1998) suggest that successful shared book reading involves parents
14 and children who are 'in tune' with each other, are both actively participating in the session
15 and jointly co-constructing knowledge and shared understanding (see also van Kleeck et al.,
16 2003). Furthermore, previous investigations indicate that this type of interaction appears to be
17 supportive of children's future language skills and independent narrative (Dickinson, 1991),
18 and has been linked to strong affective relationships (Cameron and Pinto, 2009).

19 Accordingly, we decided to examine whether personalised books resulted in a more equal
20 distribution of positive engagement behaviours than occurred with other comparable books.
21 Given that smiles and laughs are widely recognised as signals that participants, including
22 infants (see Keller et al. 1988), are happy and approve of the situation, we defined positive
23 engagement as the frequency of child's and parent's smiles and laughs during the observed
24 interaction.

1 Another aspect of our consideration of parent-child enjoyment of the session (see
2 Kaderavek and Sulzby, 1998) and related to our focus on the transactional influences in
3 shared book reading (Fletcher and Reese, 2005), was an interest in whether the reading
4 partner or the content of the book appeared to be the source of smiles and laughs. To this end,
5 we coded parents' and children's positive engagement behaviours as either a 'smile preceded
6 by look at the book' or 'smile preceded by child's or parent's reaction' (depending on whether
7 coding children's or parents' smiles). In this way we aimed to provide information about
8 which of the triad in the interaction (child, partner or book) was instrumental in bringing
9 about any observed positive affect and ways in which child and parent influenced one another.
10 This was an exploratory measure, with no clear predictions regarding the effects of
11 personalised books.

13 **Aims of the present study**

14 With the above considerations in mind, we decided to compare shared book reading involving
15 a personalised book constructed with the help of the parent with reading that involved a non-
16 personalised book containing similar information, but without any reference to the child or
17 their interests. Based on the the findings on the attractiveness of books with personalised
18 features (Janes and Kermani, 2001), we predicted that personalised books would generate
19 more engagement and more equal positive interaction than a non-personalised book. In
20 addition, we compared shared book reading involving a personalised book with shared book
21 reading involving a favourite book of the child, i.e. book which was very familiar to the child
22 and which provided a benchmark for high levels of engagement. As a result, the parent-child
23 engagement behaviours in the observed sessions were analysed to address the following
24 research questions:

1 Do personalised books result in higher levels of engagement than non-personalised
2 and a child's favourite book in both young children and their parents?

3 Do personalised books result in more equal patterns of positive interaction and is this
4 attributable to the book characteristics and/or one of the reading partners?
5

6 **Method**

7 **Participants**

8 Parents and children were recruited to meet the following eligibility criteria: the parent was a
9 native English speaker and the child had typical language development and was aged between
10 1 and 3 years. Participants were recruited initially through advertisement in the local media.
11 However, because we failed to recruit enough participants in this manner, we also used
12 snowball sampling, in which one participant recommended another family etc. This
13 procedure resulted in a sample of seven parent-child dyads.

14 Details about the children in the study were supplied by the parents who reported no
15 concerns about children's cognitive or language development and at the home visit, all
16 children appeared to be developing typically, with no concerns regarding their language or
17 cognitive development. There were three boys and four girls in the study, aged between 12
18 and 33 months, with a median age of 22 months. Four children had older siblings; three
19 children were an only child. Out of the seven families, two fathers and five mothers took part
20 in the study. When enquired about their child's general engagement in book reading, six
21 parents rated their child's general engagement in book reading as '*a lot*' and one parent as '*a*
22 *bit*' on a four-point scale of 1=*a lot*; 2=*a bit*; 3=*not much*; 4=*not at all*. The same response
23 pattern was obtained from parents rating their own engagement in book reading, with one
24 parent rating his general engagement in reading with his child as '*a bit*' and six parents as '*a*
25 *lot*'. All parents reported that their children asked for reading on a regular basis. In all the

1 families that were visited, reading to children was a clearly established routine, with all
2 parents regularly reading to their child at bedtime, some in the mornings (N=4) and some
3 '*anytime during the day*' (N=2). Three parents reported that they first started reading to their
4 child when he or she was younger than 6 months, four parents said they introduced the first
5 book after the child turned one year (but was younger than 2 years). Four parents indicated
6 they read with their child 7-9 times per week and three parents more than 10 times per week.
7 Only one parent had created a book for her child before, based on her daughter's pictures,
8 with the aim to '*share a story of her life*'.

10 **Study protocol**

11 There were three different types of books used in the study: a personalised book, a non-
12 personalised book and the child's favourite book. In order to create personalised books,
13 parents were asked to take seven pictures of any things, places or activities their child enjoyed
14 and to provide a simple storyline to accompany them. The draft text and parents' pictures
15 were then formatted using RealeWriter software, which offered an easy-to-use and efficient
16 way of creating electronic books. The non-personalised book was a book created by the first
17 author of the study, using the RealeWriter software and photographs and text showing similar
18 objects and activities as in the personalised book, but with no pictures or text featuring the
19 target child as the protagonist. The personalised book was taken as a model for the creation of
20 the non-personalised book, with a similar story structure, pictures, and grammatical
21 complexity of the text. This procedure ensured that the two books had the same or almost the
22 same number of words and pictures, a method followed in previous book comparison studies
23 (cf. Kim and Anderson, 2008). The books were then printed and laminated by the researcher
24 and given to the parent on the day of the home visit. The *favourite book* was a book chosen

1 by the parent on the day of observation, following researcher's prompt: 'Would you like to
2 choose one of your child's current favourite books?'

3

4 **Procedure**

5 The families were visited at home. Before the videotaped reading sessions, parent who
6 volunteered to participate in the study was given a short questionnaire to complete and was
7 interviewed about the family's general reading practices at home (see description of
8 participants). Parents were then given the personalised book and non-personalised book to
9 share with their child and were asked to choose one of their child's current favourite books.
10 To control for possible order effects, the three books were presented in counterbalanced order
11 across participants. Parents were asked to read the books as they normally would with their
12 child, in a room of their choice. The interaction was recorded with a non-intrusive video
13 camera.

14 After the reading session, parents were given a short questionnaire asking them to rate
15 their and their children's engagement when reading the three books. Data obtained from these
16 additional measures are not reported here, but the findings mirror those obtained using the
17 video analyses.

18 Analysis of all video clips was performed using Focus II software. This enabled a
19 detailed annotation of behavioural categories. To measure the reliability of the coding
20 procedure, six video sessions were viewed independently and re-coded by a second coder.
21 These sessions were chosen randomly, across each parent-child pair (resulting in a total of 21
22 sessions). Cohen's weighted Kappa was used as a measure of agreement; all items were
23 reliable at or above 0.85 level. Any disagreements were resolved through discussion to arrive
24 at a final rating used for data analyses.

25

1 **Measures**

2 The coding system provided information about the frequency of behaviours and was based on
3 behaviour categories identified in a pilot study and used in previous research (Moody et al.,
4 2001; Hynd, 2006). A description of these behaviours, which include pointing, vocal activity,
5 smiles and laughs and less engaged behaviours, along with some examples and relevant
6 research sources are shown in Table 1. In addition, the smiles and laughs of each partner were
7 coded to ascertain whether this type of reaction /behaviour was preceded by a look at the book
8 or a look at the partner; a separate analysis was carried out for the children and for the parents.

9
10 Table 1 to be inserted about here

11
12 **Results**

13 **Children's engagement**

14 The mean numbers of behaviours that occurred with each type of book are given in Figure 1,
15 with the mean values displayed above the columns. To check whether the behaviours were
16 independent of each other, Pearson correlations were calculated between all the frequencies of
17 children's behaviours. These were all non-significant at $p > .05$, indicating independence of
18 observed children's behaviours.

19
20 Figure 1 to be inserted about here

21
22 The Kolmogorov-Smirnov one sample test was used to check whether the data were normally
23 distributed; when this was not the case, non-parametric statistics were employed.

24 Across the three conditions, there was a significant difference in the children's vocal activity
25 (repeated measures ANOVA, $F(2, 7) = 6.57, p = .012, \eta^2 = .523$) and smiles and laughs

1 (Friedman test statistic $\chi^2(2) = 3.93, p = .049$), but no significant difference in pointing or less
2 engaged behaviours. Post-hoc comparisons showed higher frequency of children's vocal
3 activity with the personalised than with the non-personalised book and these were significant
4 at $p = .069, (t(6) = 2.216)$ and between personalised and the child's favourite book significant
5 at $p = .011, (t(6) = -3.610)$. There were significantly more smiles and laughs with the
6 personalised than with the non-personalised book (Wilcoxon signed rank test $Z = -2.06, p =$
7 $.039$). All other comparisons were statistically non-significant.

8

9 **Parents' engagement**

10 Initial correlation analyses showed that all behaviours coded for parents were independent
11 from each other at $p < 0.05$.

12 Figure 2 to be inserted about here

13

14 As can be seen in Figure 2, there were no examples of the parents producing behaviours that
15 would involve negative or less engaged behaviours. Across the three conditions, ANOVAs
16 revealed that there was an overall significant difference in parents' vocal activity ($F(2, 7) =$
17 $5.5, p = .02, \eta^2 = .479$) and smiles and laughs ($F(2, 7) = 5.7, p = .018, \eta^2 = .487$), but no
18 significant difference in pointing. Post-hoc comparisons showed that there were significantly
19 more instances of parental smiles and/or laughs when reading the personalised book than the
20 non-personalised ($t = -.263, p = .039$) or child's favourite book ($t = -.249, p = .047$). Also,
21 when reading the personalised book, parents were significantly more verbal than with the
22 favourite book ($t = -.319, p = .019$) and the non-personalised book ($t = -.265, p = .038$).

23

24 **Mutual parent-child positive engagement**

1 For each type of book, the frequency of children's smiles and laughs was expressed as a
2 proportion of the total number of smiles and laughs of both the child and his or her parent.
3 Figure 3 shows the degree of correspondence between parents' and children's smiles and
4 laughs, (represented by the position of the division line between parents' and children's
5 proportions). To evaluate whether any of the books provided a more equal proportion of
6 parents' and children's smiles and laughs, a calculation was made of the difference between
7 50% and the lowest proportion of smiles and laughs that had been calculated for either the
8 child or his/her parent. Complete equality produced a score of 0% (i.e. 50% - 50%) and if one
9 person only demonstrated a particular behaviour this gave a score of 50% (i.e. 50% - 0%). A
10 repeated measure ANOVA in these proportions across the three types of book did not reveal
11 any significant differences. Therefore, the personalised book was not found to promote a
12 more equal distribution of positive behaviours between the two participants.

13 Figure 3 to be inserted about here

14
15 We were also interested in finding out whether the source of parents' and children's smiles
16 and laughs was the book or the partner. For this purpose, an analysis of parents' and
17 children's positive engagement behaviours were coded according to whether smiles and
18 laughs were preceded by a look at the book or a look at the reading partner; this was done
19 separately for children and parents. An initial ANOVA involving parent/child as the between
20 subjects factor with type of smile (look at book or look at partner) and type of book (favourite,
21 personalised and non-personalised) produced a significant 3 way interaction ($F(2, 24) =$
22 $7.624, p = .003, \eta^2 = .388$). This provided the justification for planned comparisons using
23 repeated measures one way ANOVAs to investigate whether there were differences between
24 each type of smiling across the three types of book for children and for parents (i.e. repeated
25 measures ANOVA 3 books x 2 types of smile). For children there was a significant effect of

1 'smiles preceded by looks at books' ($F(2, 7) = 7.3, p = .008, \eta^2 = .549$). For parents, there
2 was a significant effect of 'smiles preceded by child's reaction' ($F(2, 7) = 17.211, p = .001,$
3 $\eta^2 = .741$). Paired sample t-test showed that for children, there was a significantly higher
4 proportion of smiles triggered by looks at the book for the personalised as opposed to the non-
5 personalised book ($t = -3.06, p = .022$) and for the personalised as opposed to favourite book
6 ($t = -2.56, p = .043$). For parents, there were significantly more instances of smiles resulting
7 from child's reactions for the personalised than with non-personalised books ($t = -6.58, p =$
8 $.001$) and than the child's favourite books ($t = -4.47, p = .004$). Thus, it seems that instances
9 of parents' and children's smiles and laughs were most frequently observed with the
10 personalised books, but they were brought about by different mechanisms in parents and
11 children.

13 **Discussion**

14 We set out to answer the question of whether shared book reading which involves
15 personalised books is different from shared book reading with other comparable books. There
16 were several differences in the observed sessions according to the type of book that parents
17 and children shared, and these are discussed in relation to observations about the children, the
18 parents and aspects of joint interaction.

20 **Children's engagement with personalised books**

21 Using measures of engagement that have been identified in previous research and in pilot
22 work, the detailed video analysis showed that the highest frequencies of children's
23 engagement occurred with the personalised books. The frequency of the children's vocal
24 activity and smiling/laughing were significantly higher in the personalised than the non-
25 personalised and favourite book conditions. However, there was no statistical difference in

1 the amount of children's smiles and laughs between the personalised and favourite book.
2 Children's smiles following looks at the book were more frequent in the personalised than
3 non-personalised condition.

4 The findings suggest that personalised books have the potential to foster children's
5 language development through the promotion of speech and discussion during the session.
6 Flood's early research (1977) with pre-schoolers has indicated that most of the variance in
7 children's language gains from shared book reading can be explained by the total number of
8 words spoken by the child during the reading session. Consequently, our finding of higher
9 levels of children's vocal activity with personalised books is particularly encouraging when
10 considering longer-term benefits of this form of shared book reading.

11 It was anticipated that children's engagement with their favourite books would be
12 high, particularly because of the importance of familiarity with the reading material and the
13 repetitive nature of book reading interactions with young children (Horst et al., 2011). The
14 analyses allowed an examination of whether or not personalised books had an equivalent
15 attraction to a favourite book. No significant differences in the children's smiles and laughs
16 were found between the personalised and favourite books. This suggests that personalised
17 books have an immediate attraction to young children and this is equivalent or similar to that
18 of books which have an established track record of child's interest and engagement.

19 However, a degree of caution is needed here when interpreting these findings given that in
20 some respects, the boundaries between what is a personalised book and what is a favourite
21 book is somewhat blurred. The frequent exposure to favourite books implies that at some
22 point, children's favourite books become personally meaningful to them in terms of an
23 internalised memory for the characters, context and story line. It is possible that the child's
24 interest in the content of a book is the reason for it becoming a favourite one as the book

1 becomes 'personally relevant' to the child; although of course a favourite book is highly
2 unlikely to contain specific reference to the child.

3 Although it has been previously acknowledged that books with personalised features
4 have the potential to enhance children's active and meaningful engagement in shared book
5 reading (Allen et al., 2002; reference withheld), to date it is not clear whether this potential is
6 realised through the books' personal relevance for children or through other factors. In the
7 current study, the personalised and non-personalised books had similar content which only
8 differed according to its personal relevance to each child. Consequently, a factor that
9 contributes to the difference in the children's engagement with the two books is the personal
10 nature of the book content and/or an indirect result of parents being more involved in the book
11 creation process (for personalised books, the story and pictures had been supplied by parents).

12 Children smiled and laughed more with the personalised than with the non-
13 personalised books. Such a finding is in line with previous work which emphasises the
14 importance of following children's interest to promote their enjoyment and engagement in
15 reading (Fink, 2008) and offers evidence for the association between personalised aspects of
16 books and young children's increased positive book engagement (cf Kaderavek and Pakulski,
17 2007). Our analyses of the source of children's smiles indicated that there was a significantly
18 higher proportion of smiles and laughs following a look at the book with non-personalised and
19 favourite books. This adds weight to the suggestion that it was the content of the book that
20 led to the higher frequency of positive affect observed in children.

21 In their study of social interactions with infants and mothers, Hornik and Gunnar
22 (1988) defined infants' looks which were accompanied by smiles or positive affect as
23 'sharing looks' and as the infants' attempt to include their mothers in their experience. It may
24 be that seeing pictures of their own face, toys and other personally meaningful objects
25 depicted in the personalised books brought about more smiles in children because of their

1 intention to communicate their interest in the book. Jones et al. (1991) provide evidence that
2 infants as young as 10 months use smiles as communicative rather than emotional signs. The
3 youngest child in our study was older than 10 months, but all study participants were at the
4 first stages of their language acquisition. Their smiles could be therefore interpreted as an
5 attempt to involve mothers in their positive experience and to draw their attention to the
6 personalised book, for which there were overall more signs of children's interest than for the
7 non-personalised books.

8

9 **Parents' engagement with personalised books**

10 Parents produced significantly more smiles or laughs and vocal activity with the personalised
11 than the non-personalised and child's favourite book. These effects might be due to
12 'ownership' as the personalised books were the only ones to have their content determined by
13 the parents. However, in the case of smiles or laughs this does not seem to be the whole story
14 as the personalised books had the highest proportion of smiles or laughs which followed a
15 look at the child rather than a look at the book. Consequently, it seems more likely that
16 parents' smiles or laughs were a response to the children's positive engagement rather their
17 own enjoyment generated by the content of the book. Previous research by Janes and
18 Kermani (2001) has found that immigrant parents from Mexico and Central America
19 perceived reading pre-selected commercially produced books as 'castigo' (punishment). It
20 was only when parents were encouraged to create their own books for their children that they
21 became positively motivated and engaged in shared book reading. Our findings agree with
22 those of Janes and Kermani, in that books created by parents generated the highest levels of
23 positive affect and talk around the story. Our results also suggest that these effects are not just
24 due to parental ownership and involvement, but also could be attributable to the children's
25 enjoyment of the books.

1 Whatever the reason for parents' higher frequencies of vocal activity and smiles or
2 laughs, these are important findings as previous research has shown that the use of parents'
3 talk around the book is linked to children's later literacy skills (DeTemple & Snow, 2003;
4 Reese, 1995) and high level of parental enjoyment of reading (evidenced by smiling and
5 laughing) is associated with children's learning outcomes (Cline, 2010). As such, our
6 findings should encourage application of this technique with more diverse samples where the
7 parents' engagement in shared book reading is generally low and therefore these effects might
8 be even more beneficial. Moreover, if parents' instrumental involvement in book creation
9 leads them to use more vocal communication, then it is desirable to support such engagement
10 through a variety of means, including, for example, digital technology (see the Our Story
11 application, available at <http://creet.open.ac.uk/projects/our-story/>).

12

13 **Parent-child mutual positive engagement with personalised books**

14 It was expected that personalised books might result in more equal contributions from child
15 and parent to the interaction in terms of smiling and laughing. However, analyses did not
16 support this expectation. The analyses of the sequences of events during social interaction
17 indicated that with the personalised books, the mechanisms which underlie parents' and
18 children's positive engagement were different; children's smiles were preceded by their looks
19 at the book whereas parents' smiles with the personalised books were mostly triggered by the
20 children's reaction. It is difficult to say whether this finding could be considered as a form of
21 mutual synchrony between parent and child, as previous research is not conclusive about the
22 importance of individuals reacting to a book and/or mutual sensitivity to each other. Ortiz and
23 colleagues (2001) found no significant association between observed parent variables (for
24 instance enthusiasm, number of questions asked per minute, positive feedback) and child's
25 interest in reading. Riedl Cross et al. (2011), on the other hand, found that parents whose

1 children scored high on a standardised language measure were more in tune with their
2 children's needs and abilities during book reading. Conversely, parents of children with more
3 limited language were mostly unaware of their children's abilities during book reading, such
4 as for example ability to respond to questions. It is therefore interesting to note that when
5 reading personalised books, parents were responding to their children's non-verbal clues, and
6 children, on the other hand, were more focused on the personalised character of their books
7 rather than on their parents reading with them.

8 Thus, when considering mutual book engagement between parents and children, it is
9 important to realise that children may be leading some aspects of the observed interaction
10 depending on how personally meaningful a book is. In this respect, the study highlights the
11 variety of self-regulated and self-based context of parents' and children's interest in books and
12 the importance for acknowledging the idiosyncratic nature of mutual parent-child shared book
13 reading engagement (cf Fletcher and Reese, 2005). The latter is an important concept in
14 research concerned with socio-culturally sensitive book reading interventions (see Ada, 1988;
15 Campoy et al., 2006) and makes our study directly relevant to the many research and policy
16 attempts which seek to maximise the learning benefits of shared book reading by making it an
17 enjoyable and entertaining event for both parents and their children (see Gadsden, 1996;
18 Cairney, 1997; Dunst et al., 2006; Moll and Cammarota, 2010).

19 .

20 **Study limitations**

21 Before generalising our findings to larger cohorts, further confirmation of our results is
22 needed given the current small sample size and homogeneity of the sample. Furthermore,
23 when identifying what constitutes effective, mutual and equitable interaction, it is worth
24 considering whether analyses based on frequency of behaviours can be enhanced by
25 observations which capture other subtle qualitative aspects of social interaction, such as for

1 example self-other agreement or anticipation. With this caveat in mind, it would appear that a
2 specific feature of books, namely their personal significance to the parent and child,
3 influences parent-child engagement in the session. The study focus on personalisation, rather
4 than a specific book type or book genre, means that the findings add to the growing research
5 evidence regarding the importance of certain book features rather than book types (Anderson
6 et al., 2009, April). Furthermore, by finding a difference in relation to different book features
7 and for different aspects of parents' and children's engagement, the study contributes to
8 discussion of the interrelated influences in parent-child engagement in shared book reading
9 (cf. Reese and Cox, 2005). We therefore believe that personalised books are an area worthy of
10 future research, especially because they can be used with a wide variety of socioeconomic and
11 cultural groups, and it would be interesting to examine the variations in the books and their
12 effects on children and parents from various families and with different experiences.

13 **Conclusion**

14 Our focus on self-made personalised books was influenced by the growing interest in the
15 relationships between specific book features and parent-child positive engagement in shared
16 book reading. Personalised books (i.e. self-made books created specifically for the child) are
17 by definition culturally-sensitive and family-oriented resources, adjustable to parents' and
18 children's interests and needs. Interestingly, despite relatively wide-spread occurrence of
19 personalised books in homes and children's pre-schools, very few studies have looked at how
20 both parents and children respond to books which are personally meaningful to them.

21 Parents' and children's higher engagement levels with personalised books highlight some key
22 characteristics of these books and the importance of: (i) the content of children's books being
23 based on what children enjoy and have previously been exposed to, (ii) the book's personal
24 relevance to both parent and child during shared book reading and, (iii) parents' sense of
25 ownership in a book-reading intervention. Given the importance of enjoyment, and verbal

1 participation in parent-child shared book reading, future research is warranted on personalised
2 books and the specific response they facilitate in parents and children.

3

4

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1 **Tables and Figures**

2

3 Table 1: parents' and children's behaviours: coding framework

Variable	Specification	Details and examples	Scoring
1, Pointing			
<i>Child</i>	-the number of times the infant points or touches a picture or a line of text or the whole page (cf. Murphy, 1978)	Accidental touching or playing, chewing and, eating ^c was not counted as pointing. Also, turning pages, simply holding the book and interacting with flaps of flip-flap books was not considered as pointing	- frequency count obtained for each participant in each book session
<i>Parent</i>	-the number of times the parent points or touches a picture or a line of text or a letter or the whole text (cf. Whitehurst <i>et al.</i> 1988)		
2, Vocal activity			
<i>Child:</i>	- total number of vocalisations (see Crowe <i>et al.</i> 2004)	For younger babies, vocal activity include nonverbal sounds and slurred or simplified versions of ordinary words. Imitating animal sounds in response to questions like 'which animal is this?' were also included. For older toddlers, all of the above plus simple words were included.	-frequency count for each participant in each book session
<i>Parent:</i>		For parents, all verbal utterances were included, including imitating animal's sounds and providing backchannel responses (e.g. 'yeah, uh-huh'). A complete utterance was treated as one vocal act	

3, Smiles and laughs

Child and Parent

-total number of smiles and laughter (see Hynd, 2006)

Any smile or laughter observed during each reading session counted towards the indicator

-frequency count for each participant in each book session

4, Less engaged behaviours

Child

-total number of yawns, restless movements, looks away from the book and furtive departures

Any sign of lack of interest in the book or discomfort with the reading session counted as 'one' behaviour for each child per session

-frequency count for each participant in each book session

Parent:

-total number of yawns, restless or harsh movements, looks away from the book and furtive exits

Any sign of lack of interest in the book or discomfort with the reading session counted as 'one' behaviour for each parent per session

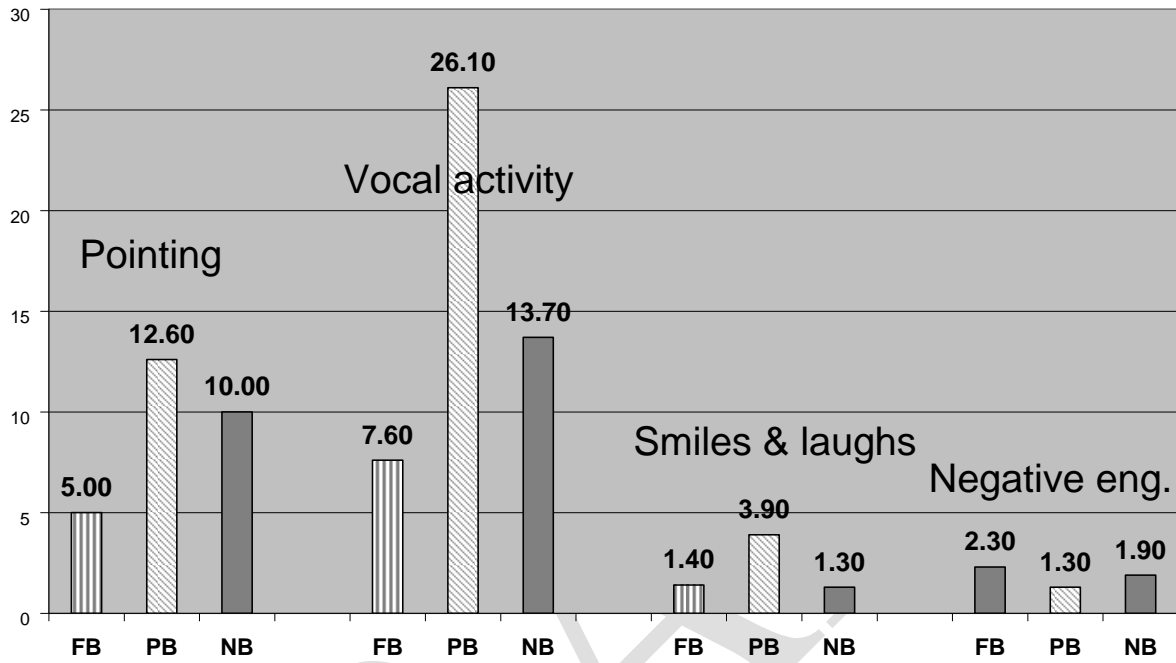
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1 Figure 1 The mean frequency of the children's behaviours with each of the types of books (FB
 2 = favourite book; PB = personalised book, NB = non-personalised book)

3



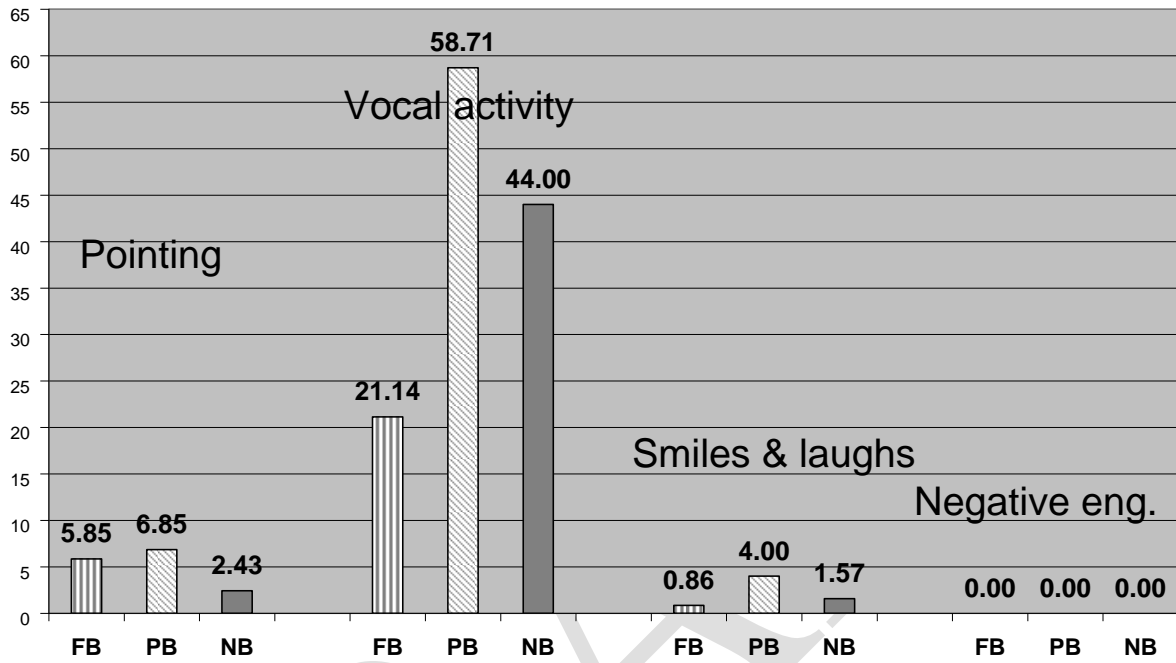
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2 **Figure 2** The mean frequency of the parents' behaviours with each of the types of books (FB

3 = favourite book; PB = personalised book, NB = non-personalised book)



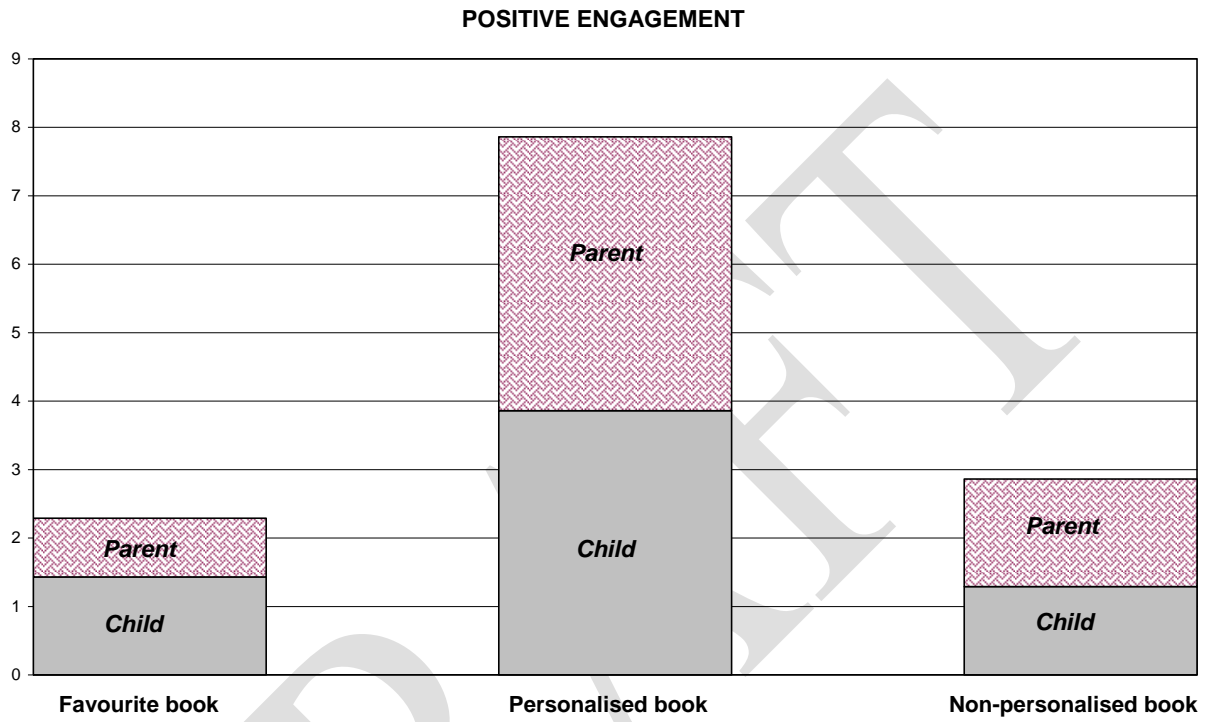
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1 Figure 3: Parent-child correspondence for smiles and laughs: proportion of behaviours
2 displayed for parent and child (FB = favourite book; PB = personalised book, NP = non-
3 personalised book)

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