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An evaluation of the impact of Dialogic Book-sharing on Early Childhood Development (ECD) teachers and children in ECD Centres in Namibia

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EXECUTIVE SUMMARY

Academics at the University of Reading in the United Kingdom developed a Dialogic Book-sharing programme (DBS) to equip parents to support and stimulate their young children's cognitive and socio-emotional development. This programme has been systematically evaluated in South Africa and shown to produce dramatic improvements in children's language and concentration abilities, as well as to enhance their social understanding.

The Mikhulu Trust (MT) has recently adapted this DBS programme for pre-school teachers (the DBS-PS programme). In collaboration with the University of Namibia, and with support from the University of Reading, in 2020 the MT initiated an evaluation of this programme in Windhoek, Namibia. The objectives were ambitious, but the study was severely disrupted by the Covid epidemic. Nevertheless, 13 ECD teachers from 8 ECD centres in Windhoek were trained over four two-hour sessions. Their book-sharing skills were observed and rated before and some weeks after training, and aspects of the children's cognitive and socio-emotional functioning were similarly assessed before and after the training.

The training was extremely well-received by the teachers, all of whom improved their book-sharing skills dramatically, and all of whom were committed to continuing with book-sharing in their daily ECD work. The children's language skills markedly improved over the study period and their behaviour, especially their focal attention, also markedly improved.

The evidence from this study strongly supports the conduct of a large scale randomised controlled trial of the DBS-PS programme in Namibia and/or similar developing world contexts to establish the magnitude of the beneficial impact on children's cognitive and socio-emotional development.

BACKGROUND

There is strong and consistent evidence for the benefit of providing parents with training in dialogic book-sharing, or DBS (Dowdell et al, 2020). The key parenting dimension of sensitivity is markedly improved by such training, and parent-child reciprocity is considerably increased. Further, the beneficial impact on children's language development, especially their expressive language, is substantial (Dowdell et al, 2020). Benefit to the development of children's sustained attention has also been demonstrated (Cooper et al, 2014; Vally et al, 2015). Statistical analyses of mediation effects demonstrate convincingly that the improvements in the parents' book-sharing skills account for the improvement in child development (Murray et al, 2016). While the



focus of research attention into book-sharing has been almost exclusively concerned with the development of child language, evidence is also emerging of a positive impact on children's social development (Murray et al, 2016).

There is some evidence that DBS can have a positive impact when delivered to groups of children in a low-income pre-school setting. Thus, in randomised controlled trials of DBS interventions in such contexts, strong benefits to both child receptive and expressive language have been found in Canada (Hargrave & Senechal, 2000), rural Bangladesh (Opel et al., 2009), and Turkey (Simsek & Erdagon, 2015). Although samples have been small and assessment frames narrow, since the effect sizes for language are comparable to those achieved in the trials of parent training DBS, these findings are encouraging. A pilot study of a DBS intervention delivered in Lesotho has suggested benefits beyond child language development. Compared to children from ECD centres delivering their usual service, children from centres where the staff had received training in DBS showed a significantly lower level of behavioural problems (Tomlinson, 2019).

In light of the promising evidence for the efficacy of DBS in pre-school settings, in a collaboration between the Mikhulu Trust, the University of Reading, and the University of Namibia, a study of such an intervention was conducted in Namibia.

STUDY DESIGN AND CONDUCT

The study protocol was submitted for ethical scrutiny to the Namibia National Commission on Research Science and Technology (NCRST). Their approval to proceed was received in November 2019. In collaboration with the Namibian National Early Child Development (ECD) NGO Association, and with support from the Namibia Ministry of Education, Arts and Culture, and the Namibia Ministry of Gender Equality and Child Welfare, eight ECD centres in Windhoek were recruited to participate in the study. One or two ECD teachers from each ECD facility ($N=13$) were then provided with training by the MT in its dialogic book-sharing programme for pre-school teachers (DBS-PS). The study included these 13 teachers and the 115 three-to four-year-old children in their classes⁴.

⁴ Details of the DBS-PT training programme can be obtained from Kaathima Ebrahim of the Mikhulu Child Development Trust (SA) at info@mikhulutrust.org



Training was provided by the MT over four two-hour sessions. These were based on a set of PowerPoint slides with accompanying demonstration videos. Sessions one and two were delivered in person (by MT) to the full group of ECD teachers in two half-day sessions over a one-week period. Following these sessions teachers were encouraged to practise the techniques covered with the children in their centres. Half of the teachers received in-person mentorship visits from the MT Trainer. During the mentorship visit, the MT trainer observed the teacher's book-sharing practice with a group of children, and then had a one-on-one mentorship discussion on what the teacher did well and what she could improve on. Sessions three and four were meant to be delivered three weeks later, with the remaining half of teachers receiving their mentorship visits at that time. However, training was interrupted by a Covid lockdown and school closures. A revision session was therefore held three months later, online, followed immediately by sessions three and four, also delivered online. Mentorship was also provided to the teachers online.

Both teachers and children were assessed within the ECD centres before the training was provided, during February and March 2020, and they were then assessed again some weeks after the training, between November and December 2020.

During the study period, the Covid-19 epidemic resulted in all the 8 ECD centres being closed for variable amounts of time. The duration of the children's exposure to book-sharing delivered by the trained teachers, therefore, varied considerably, ranging from 3 to 18 weeks, with an average duration of 10.36 weeks ($SD=5.35$).

ASSESSMENTS⁵

Teachers' book-sharing skills:

A rating scale was established comprising 10 key book-sharing skills (see Figure 1). Each teacher was asked to share a book with the children in their class and the assessor, who observed the teachers, rated each skill on a four-point Likert scale. This assessment was carried out both before and after training. A skill was rated as present if evidenced a great deal during the book-sharing session (e.g., the teacher 'encourages the children to participate by asking questions').

⁵ Further details of both the content and conduct of the assessments can also be obtained from Kaathima Ebrahim (info@mikhulutrust.org).



At the final assessment, teachers were also asked 10 specific questions about their experience of the DBS-PS training and their future book-sharing plans.

Children's development:

Before and after the training, teachers completed a set of questions on aspects of each child's development. These questionnaires covered the following areas:

- i) Attention problems. The five items from the Attention/Hyperactivity sub-scale of the Strengths and Difficulties Scale, or SDQ (Croft et al, 2015) were used. The teachers were asked for a general assessment of each child's attention, not just during book-sharing. An item was rated as problematic if the teacher strongly agreed with the statement (e.g., the child 'Is easily distracted, their concentration wanders').
- ii) Language development. The six items of the Language sub-scale of the Brief Early Skills and Support Index, or BESSI (Hughes, et al, 2015) were used. A skill was rated as present if the teacher strongly agreed with the statement (e.g., the child 'Understands wh-questions (like 'what', and 'who' and 'where)').
- iii) Child behaviour during book-sharing. Teachers were asked three questions on the children's behaviour during book-sharing. The item was rated as present if the teacher stated that the child always showed the quality in question (e.g., the child 'pays attention'). The teachers were also asked whether the child ever chose to look at books.

Before and after the training, for a sub-sample of the children, the child's behaviour while looking at a wordless picture book was observed by the assessor and rated on five pre-defined dimensions. Each child sat with the assessor in a quiet space, with the teacher present, and was given a wordless book to look at, while the assessor "was just finishing some work". The session was ended after five minutes. The item was rated as present if judged to be constantly present (e.g., the child 'holds the book well').

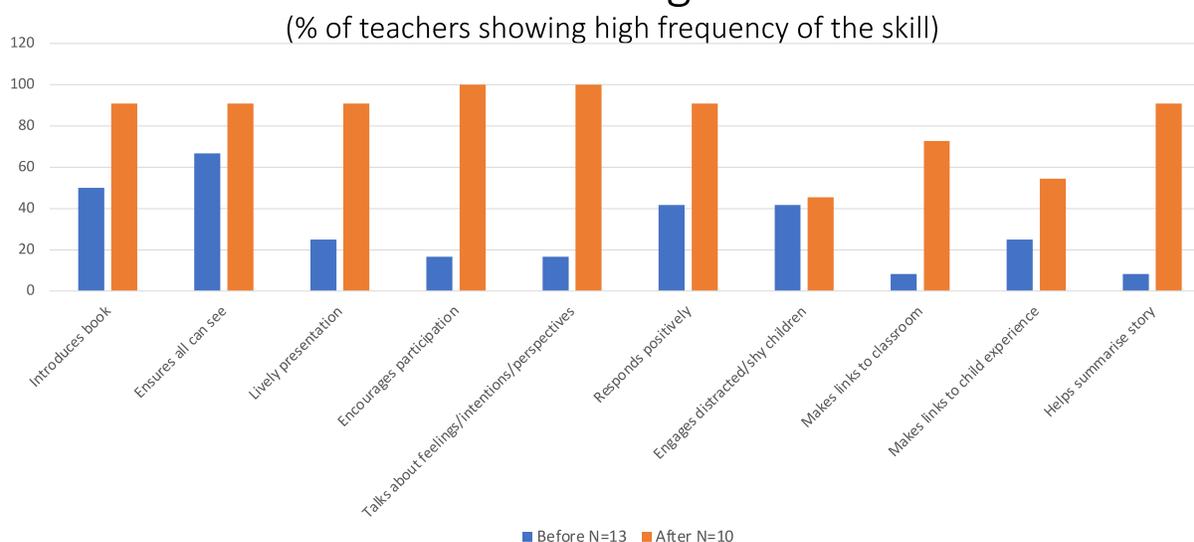
RESULTS



Teachers' book-sharing skills

Of the 13 original teachers, it was possible to reassess 10 of them. Figure 1 below shows the percentage of teachers rated as showing a high frequency of the 10 behaviours rated during book-sharing. It can be seen that on all, but one dimension (encouraging shy children to participate), the ratings of teacher behaviour after training showed a marked increase in desirable behaviours compared with pre-training rates. Of particular note is that after training, all the teachers actively encouraged the children to participate in the book-sharing session and discussed aspects of the book characters' experience (feelings, intentions, perspectives). All, except one teacher consistently responded positively to the children's contributions, and all, but one teacher actively helped the children summarise the story at the end of the session.

Fig. 1. Observed Teacher Behaviour during Book-sharing



Children's development

Of the 115 three- to four-year-old children included in the study, the number in each class ranged from 2 to 18, with an average of 8.85 ($SD=5.43$) children per class. Half of the children were boys (49.7%). After the training it was possible to reassess 39 of these original children. In the figures below, the performance of the children before training is shown at baseline for the full

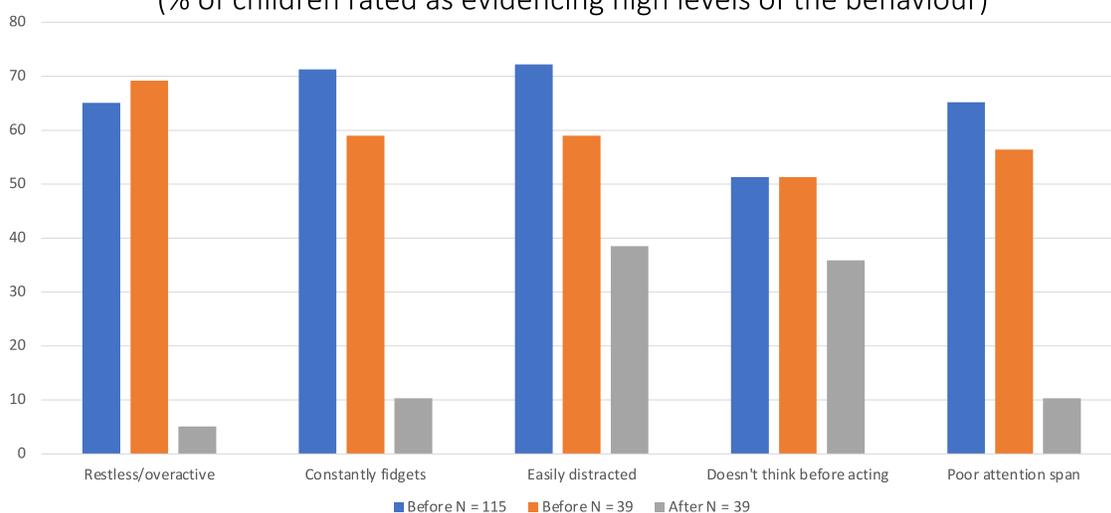


sample of 115, and at both baseline and follow up for the subsample of 39 who were assessed on both occasions. As can be seen in Figures 2 and 3, for none of the measures of attention and language was there a material difference *at baseline* between the performance of the full sample and the subsample of 39 children on whom data were available both before and after training. The subsample of 39 children assessed both before and following training therefore can be considered representative of the full sample of 115 children.

Child attention

Figure 2 below shows the prevalence of child attention problems. As can be seen, for all five of the SDQ attention sub-scale items, high rates of disturbance were reported at the baseline assessment, with prevalence ranging from just over 50% to just over 70% of the children. Ratings post-training showed a marked decrease in problems or all items, with rates of children with problematic behaviour dropping to 10% or fewer for three key items ('restlessness/over-activity', 'fidgetiness', and 'poor attention span').

Fig. 2. Teacher-reported Child Attention Problems
(% of children rated as evidencing high levels of the behaviour)



Child language

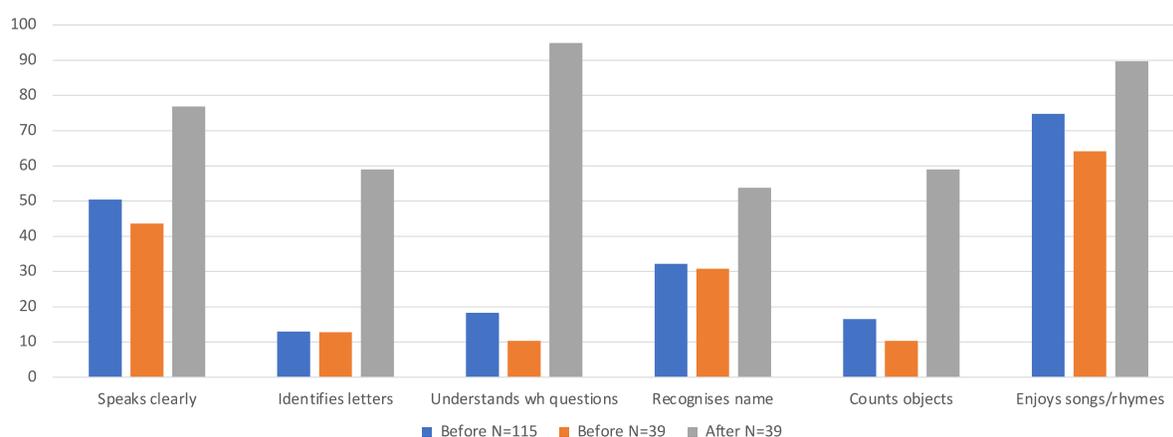
Figure 3 below shows the teachers' ratings of the children on the six items of the BESSI sub-scale of language development. As can be seen, at the follow up assessment, for all items,



there was a marked increase in the prevalence of the desired behaviour. Notably, given its prominence within DBS, the item showing the greatest improvement was understanding 'what/who/where/why' questions'.

Fig. 3. Teacher Reports of Child Language Development

(% of children showing clear evidence of the skill)



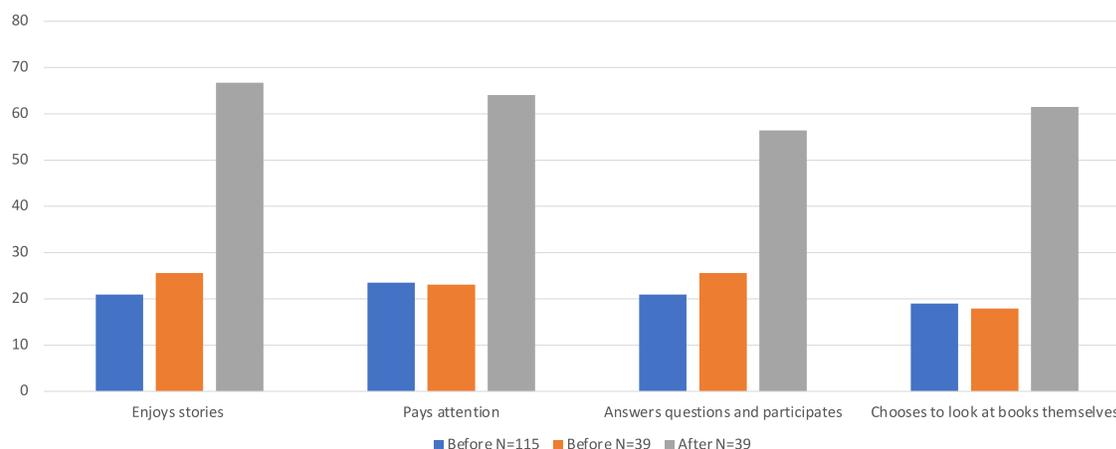
Child behaviour during book-sharing

Figure 4 below shows the teachers' ratings of the children's behaviour during book-sharing sessions. As evident from the figure, only around 20% of the children were rated by the teachers before the training as always showing desirable behaviours during book-sharing. At the assessment after training, however, levels rose dramatically to around 60% of children on all items.



Fig. 4. Teacher Reports of Child Behaviour in Book-sharing and with Books

(% of children always evidencing the behaviour during book-sharing sessions)

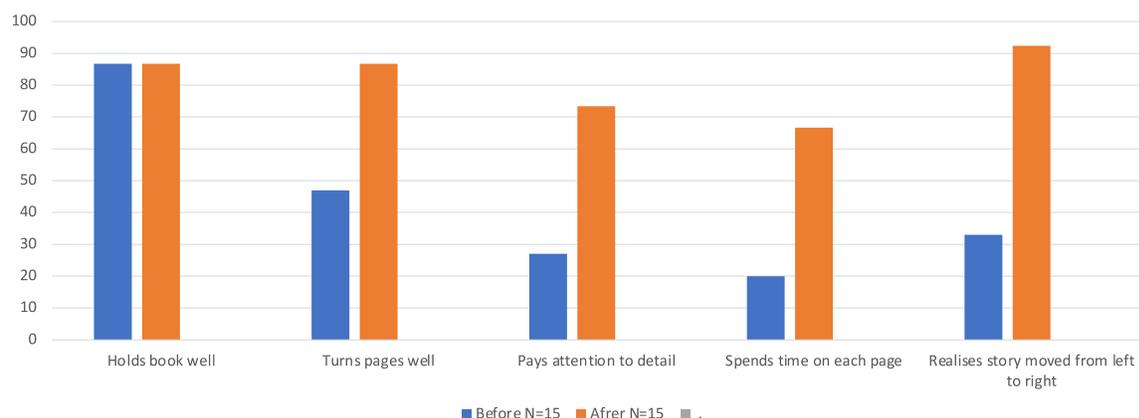


Child behaviour with a book

Figure 5 below shows the ratings made by the assessor of the children's behaviour while looking at a wordless picture book. A sub-sample of 51 children were observed at baseline. However, it was possible to reassess only 15 of these post-training, and therefore, only data for these 15 children are presented. As can be seen from the figure, aside from 'holding the book', which all 15 children did well at baseline, on all the dimensions, a considerably greater percentage of children showed the relevant behaviour post-training compared to pre-training. Notably, the largest change was evident in the children's understanding that the individual pictures in the book formed part of a coherent narrative. The time the children spent looking at the book increased, on average, almost two-fold: the mean looking time was 114.0 seconds ($SD=55.8$) before training and 206.0 seconds ($SD=89.1$) after training.



Fig. 5. Observed Child Behaviour with a Book
(% of children evidencing the behaviour throughout the session)



Teachers' views on the training

The 10 teachers who were assessed following training were asked their views on the training itself and their view of book-sharing as a pedagogic practice. All of the teachers rated the training as extremely interesting, informative, and enjoyable, and as having fundamentally changed the way in which they use books with the children in their class. They also all reported definite improvements in their children's language development and sustained attention and they reported similar improvement in the children's understanding of emotions and perspectives. They all reported that their children now experienced high levels of enjoyment of book-sharing and they all expressed a definite commitment to continuing with book-sharing in their future ECD work.

DISCUSSION

The training provided by the MT to the Namibian ECD teachers in DBS-PS was very well received and highly effective in improving teachers' book-sharing skills. Notably, all the teachers assessed after training had continued to provide book-sharing sessions to their class and intended to continue to do so. This bodes well for scaling up book-sharing within Namibian ECD centres.



The current assessment of the impact of providing DBS-PS training was compromised by the Covid-19 epidemic. The children's exposure to book-sharing was interrupted by long periods when schools were closed and, ultimately, it was possible to reassess only a third of the original sample. While this was most unfortunate, it is of reassurance in interpreting the findings that the sub-sample that was reassessed closely resembled the original sample both demographically and in terms of baseline measures.

The ratings made by the teachers of the children's attention and language at the follow up assessment showed a marked decrease in problematic behaviours and increase in desirable ones compared to pre-training levels. Their ratings of the children's behaviour during book-sharing also showed considerable improvement. This improvement was also evident in the assessor's observations of the children's behaviour with a picture book. These findings are consistent with the children's exposure to DBS having had a positive impact on both their cognitive and socio-emotional development. However, since the study did not include a control group, the findings are also consistent with the possibility that all the positive changes identified were a function of natural maturation: that is, all the children were some months older at the second assessment than they were at the first assessment and this maturation could have accounted for the improvements. Only a randomised controlled trial can definitively clarify which of these accounts is correct, or, more likely, how much improvement is a consequence of the exposure to DBS and how much to natural maturation. In this context, it is worth noting that when the original sample of 115 children assessed at baseline was divided into those who were three years old ($N=56$) and those who were 4 years old ($N=59$), there was no difference between these groups at baseline on any of the measures of attention, book-sharing behaviour, or behaviour with a book. For the indices of language development, there was only a small effect of age. This strongly suggests that the benefits evident in the current study on child attention, language, behaviour during book-sharing, and behaviour with a book, were in large measure, a function of the DBS-PS training provided to the teachers.

CONCLUSION AND RECOMMENDATIONS

In conclusion, evidence from this study confirm benefits to both teacher book-sharing skills and child outcomes in Namibia as in previous studies conducted by Mikhulu Trust in other countries. The study, therefore, strongly supports the conduct of a large scale randomised controlled trial of the DBS-PS programme in Namibia, to establish the magnitude of the beneficial impact of such training on both teachers' skills and children's cognitive and socio-emotional development.



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