Implementing effective oral language interventions in preschool settings: no simple solutions [1]

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INTRODUCTION

Concern about the oral language skills of a significant minority of the preschool population is widespread; explanations are variously made at child, parent or school level [see Chapter 1, present volume]. Two groups of children appear particularly vulnerable in this context: those from disadvantaged backgrounds and those for whom English is an additional language. Meanwhile, there is a growing awareness that formulaic interventions are unlikely to address the range and variety of the children's language needs or be sensitive to the variety of contexts in which children are learning. Suggestions for quick-fix solutions are not uncommon (see Riley, Burrell, & McCallum, 2004) but these are rarely adequately evaluated. Detailed analyses of interventions are central to developing theory and practice as 'the more implementation and process data that are collected, the better the chance of explaining why interventions work relative to comparison conditions, when they do, and why they fail when they do not' (Pressley, Graham, & Harris, in press). We consider here the issues raised in devising and

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implementing oral language interventions in preschool contexts. Problems encountered in the design, execution and analysis of the study we describe are used to provide a framework for the development of future studies that can contribute to our understanding of evidence-based practice.

Our focus is an inner city multilingual environment where the development of oral language skills in the language of the education system (English) is often compromised. Early work in the area had established that oral language skills were reduced for a significant minority of children in the primary schools (Stuart, 1999). Our aim was to offer targeted oral language support prior to school entry with the aim of minimizing later effects of language disadvantage. The first step was to identify the nature and the extent of the problems.

Language learning and interventions

Valid and reliable interventions in preschool settings should be based on an understanding of a) the children's personal and social contexts, b) the processes involved in language acquisition, and c) a rigorous evaluation of the efficacy of the intervention. We examined the children's personal and social contexts by collecting baseline measures that examined the opportunities that children had to acquire English in the nursery context and to provide a profile their oral language skills in English.

Observations in a sample of nursery settings across the LEAs indicated that while there were opportunities to engage in oral language activities these were, typically, only used by a minority of children. Moreover, there were few opportunities for small-group work that built on oral language skills. Language modelling occurred in teaching and

small group activities whereas both outdoor and unstructured activities were dominated by language that was used to control behaviour. Measures of the children's language skills revealed low levels of both expressive and receptive language. Comprehension levels were significantly different to the children's non-verbal abilities, indicating that the children were not generally delayed. Vocabulary and narrative skills were specifically limited. These two components of the language system in conjunction with the development of the children's comprehension skills served as the basis for our intervention.

The content and process of the intervention

Vocabulary can be conceptualised as the building block of language (Anglin, 1993) and thus is central to the production and comprehension of language (Dockrell & Messer, 2004). Vocabulary knowledge is also a strong predictor of academic success, and plays a central role in cognitive development especially in relation to literacy and learning (Cunningham & Stanovich, 1997; Stanovich & Cunningham, 1993). Vocabulary is learnt in context and children 'capitalize effectively on the information-rich social context within which word learning occurs' (Baldwin & Moses, 2001, p. 318). Developing the children's lexical knowledge was, therefore, identified as a key component of the current intervention.

Effective language use depends on being able to link words in meaningful grammatical constructions to produce narratives. The ability to narrate emerges in the preschool years and by the time children enter school, a majority possess a basic repertoire of narrative abilities (Wolf, 1985). Children who enter school without basic

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narrative abilities are at risk; both language and literacy development are compromised (Bishop & Edmundson, 1987; Feagans & Appelbaum, 1986; Michaels, 1981). There are clear developmental changes in both the form and the content of narratives beginning in the early preschool years (age 3) and continuing across the life span (e.g., Applebee, 1978; Berman & Slobin, 1994; Chafe, 1980). Early narratives are often concerned with dramatic personal events such as illness or injury (Miller & Sperry, 1988; Sutton-Smith, 1986). Importantly, children's narratives can be enhanced by opportunities to engage in the retelling of familiar materials (McGregor, 2000). Thus the ability to produce oral narratives is an important skill for preschool children, a competence that was lacking in the current participants, and therefore constituted the second component of the intervention.

Finally we considered the importance of comprehension and children's abilities to draw inferences. Inferences are based on the integration of world knowledge and text knowledge and are important precursors to the production of oral and written text. Inferences in a narrative are based on three identifiable sources of information including the Why or How; the Who, What, When and Where; and the understander's world knowledge about information that was specified in the narrative (Warren, Nicholas, & Trabasso, 1979). The ability to draw inferences is central to development of reading comprehension (Cain, Oakhill, Barnes & Bryant, 2001; Cain & Oakhill, 1999; Cornoldi & Oakhill, 1996; Oakhill & Garnham, 1988). Previous research with a similar population in primary classes highlighted problems with reading comprehension despite adequate decoding skills (Stuart, 2004). The third element of the intervention therefore focused on

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developing children's abilities to draw inferences in narrative contexts, thus supporting comprehension.

Our initial review of the literature and analysis of the skills of the children from the locality identified three components of oral language that were compromised in the current cohort: vocabulary, narrative and inferencing skills. These three dimensions comprised the content (the WHAT) of our intervention. We used two distinct sets of evidence to develop a rationale for how the development of children's language skills was to occur (the HOW). One set of evidence relates to adults' use of language during interaction with children, and the factors associated with increases in children's language development. These factors include the expansion of children's utterances into well-formed equivalents, the recasting of children's utterances into other grammatical forms or using other lexical items, commenting on the child's actions and focus of attention and following the child's lead. Thus the ways in which adults talked with the children in the course of the intervention was seen as central to its success.

The second set of evidence relates to the organisation of the nursery setting. In preschool contexts the nature of language interactions is influenced by the size of the group. The larger the group taking part in the interaction, the less linguistic production there is and the simpler the structure of the utterances made (Pellegrino & Scopesi, 1990). However, it would be wrong to assume that interventions are best provided one-to-one. Peer interactions enhance language abilities in preschoolers (Goldstein, English, Shafer, & Kaczmarek, 1997; Robertson & Ellis Weismer, 1977) and preschoolers' narratives are influenced by what they hear from their peers (McGregor, 2000). Our intervention therefore involved working with children with differing language abilities in small groups

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in a linguistically responsive manner using materials that were related to familiar activities and local contexts.

Evaluating and measuring change

Identifying valid and reliable effects of interventions is problematic; methodological and statistical issues are paramount. To identify an intervention-specific effect it is important to have both a control group and a 'realistic' comparison group (Pressley & Harris, 1994). Moreover, within the skills measured, a distinction needs to be drawn between specific effects and general effects. Obtaining positive effects on the specific variables and no effect on the general or untargeted variables permits confidence that the positive outcomes are not due to Hawthorne or other general effects (Campbell & Stanley, 1966).

For the majority of children some change will occur in test performance in the absence of any targeted intervention. Analysis must control for this; scores can be analysed in at least three different ways, e.g. *t* tests based on gain scores (normalised gain score, Hake, 1998), ANCOVA or split-plot. Some statisticians argue that 'in most cases you should analyse the data in several ways' (Wright, 2003, p. 130), although these comparisons are virtually never published outside the statistical literature (see Wright, in press). The current project addressed these methodological pitfalls by including a realistic comparison group which offered children all the features of the main intervention except the key linguistic components. Both targeted and non-targeted language skills were measured and analyses were carried out using more than one statistical approach.

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METHOD

Participants

One hundred and forty-two children participated in the study. Fifty-three children were exposed to the 'Talking Time' (TT) intervention, 41 children were exposed to story reading (SR) and 48 children attended the nursery that served as a comparison.

Study design

To evaluate the impact and efficacy of TT children's progress in the target nursery was compared with two other groups. To compare children's progress with typical developmental trajectories for the population, a successful nursery with a strong oral language philosophy was identified and served as a comparison nursery (C). To contrast the specific effects of the TT activities and staff training, a second nursery was identified where children were exposed to additional oral language – small-group story telling sessions (SR), effectively a comparison intervention. The variables common to both TT and SR were small groups (maximum size five), regular activity, minimum period of ten minutes and group membership remaining constant.

'Talking Time'

Table 1 presents each area of language competence and the ways in which these were translated into developmentally-appropriate activities. These activities typically occur in preschool provision, are consistent with and complement the Stepping Stones outlined for

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the Foundation Stage curriculum (QCA, 2000)[2]. The intervention was carried out over two terms; vocabulary development and inference activities occurred in the first term while the narrative activities were introduced in the second term when children had acquired greater levels of oral language competence[3]. Children took part in the activities twice a week. The activities lasted for approximately ten minutes.

INSERT TABLE 1 HERE

Talking with young children

Talking with young children whose language skills are limited is both difficult and demanding. Staff discussions were held about understandings of language development and particular emphasis was placed on the ways in which language models provided by adults and peers have a significant impact on a child's developing oral language skills. Staff were provided with a number of training sessions both to familiarise themselves with the activities but also to highlight and discuss the specific types of language that supports children's communication skills. The importance of adult recasts of children's utterances and the drawing of appropriate contrasts between words and grammatical constructions while retaining the child's basic meaning was seen as central to such activities. Staff were encouraged to avoid direct questions and demands, following an inflexible script or forcing the child to repeat what was said. Children's language skills

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[2] It was important that the staff saw the intervention as consistent with but extending current government guidelines.
[3] Details of the intervention are available from the authors

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were assessed at the beginning and end of the intervention. Fidelity of the intervention was ensured by weekly visits to the nursery.

'Story reading'

A comparison intervention was developed. This condition exposed children to language but did not necessarily require them to use language. Age-appropriate stories were identified and stories were repeated as appropriate to ensure familiarity with content and language. Children took part in the story reading situation twice a week. Staff were trained in story-telling techniques but no specific information about language development was provided. The story lasted for approximately ten minutes. Children's language skills were assessed at the beginning and end of the intervention, and fidelity of the intervention was ensured by weekly visits to the nursery.

Efficacy and impact

All children were expected to improve over time but no specific or differential effect was expected for non-verbal abilities or tasks tapping phonological skills, as these were not targeted in the intervention. We predicted that both intervention groups (I) would improve in their comprehension abilities but the TT group would demonstrate greater gains. In addition we predicted that the TT group would demonstrate an enhanced ability to produce oral language as measured by vocabulary, sentence repetition and narrative skills.

RESULTS

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Table 2 presents the measurements used to assess baseline performance and changes following the intervention.

INSERT TABLE 2 HERE

As predicted there was a general increase in performance over time. As a group at the end of the intervention the children were producing sentences with an average length of three words, their naming vocabulary was at the 19th centile and their comprehension skills were at the 11th centile. This contrasted with non-verbal abilities, 29th centile, which continued to be in the average range.

The results indicated that while both interventions supported children's performance on tasks that drew on language skills. TT had a direct impact on four of the tasks that assessed language competencies that were targeted in the intervention: comprehension, naming vocabulary, narrative length and sentence repetition. These skills underpin oral language competence. The limited improvement in children's oral narratives was a source of significant concern.

Generalization

Baseline data examining teachers talk with children had indicated that nurseries provided few opportunities for language modelling or facilitative use of language. Analysis of the teacher talk data following the intervention indicated that there were no changes in the level or type of oral language produced in the control nursery in terms of language modelling or overall facilitative language. In contrast there were highly

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significant positive changes in the nursery that had implemented the TT intervention. Some changes were note in the SR nursery but these were not statistically significant. These data indicate that the intervention and training provided with TT had generalised to interactions throughout the nursery.

DISCUSSION

Problems, lessons learned and future developments

The current project demonstrated that it was possible to facilitate language development by means of a systematic programme based on current understanding of language development. Intervention research also provides the opportunity to raise questions about the application of theory to practice in an evidence-based fashion. In this final section we consider five aspects of the intervention implementation that should inform the development of future studies in the area.

Children's needs

The levels of oral language skills of the children in the current study raised considerable challenges for the staff. A large proportion of the children were functioning at the very early stages of language development, with many children at the beginning the study producing only one- and two-word utterances in English. Such needs were difficult to address; staff had not been provided with the appropriate training in oral language development during their initial training and regular informed support was not available. As a result there was not a principled understanding of the language skills that needed to

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be acquired, how this might be facilitated and the long-term nature of the task. This resulted in an idealised and simplified notion of how language is acquired. Indeed at the end of the study staff felt that the children's oral language skills were appropriate for school entry. This perception contrasted with objective measures of language performance. Staff did not use difficulties and problems to develop subsequent changes in the curriculum; rather such problems allowed the inference that the problem was inherent within the child. There is a clear need for concrete guidance in turning objectives into practice.

Children's progress

The length of the current intervention was insufficient to support the development of expressive language as measured by the children's narrative production. There are empirical and theoretical reasons to believe that understanding precedes expression. As such the gains in comprehension should be viewed as a positive first step. However, the current cohort of children will require additional support to develop these skills in the primary classroom. Given the intransigence of expressive language development there is a need to extend these principles into reception and KS1 classes and provide a systematic evaluation of their efficacy. Supporting oral language development is a long-term activity.

The analysis of data at the group level over the period of time has inevitably meant that group results on standardised assessments have been reported. It has not been possible to profile changes in individual students. An important further question is how

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different types of students fared in the intervention. This requires data collection from naturalistic communication over longer time periods.

Training

The pilot work and intervention identified a number of specific training issues. The realities of the preschool setting placed limitations on the staff's ability to organise the nursery programme in such a way that all children would be provided with the opportunity to engage in the activities. The significant demands in meeting government targets reduced time for more flexible individually-tailored activities. Indeed this meant that when the intervention project was finished staff felt that the maximum time available for oral language work in groups was ten minutes a week. The role of the head teacher in supporting the work was paramount.

Fidelity

An important dimension of the present study was the researcher's presence in the nurseries on a weekly basis. This ensured that the interventions were implemented as intended and allowed a monitoring of the difficulties in intervention. These observations played a central role in understanding the difficulties staff had in eliciting narratives. We are therefore confident that this is an area in need of further work.

Viability

The two interventions presented served to enhance the children's oral language skills, both had strengths and weaknesses. These contributed to the staff decisions as to their

viability for supporting children's early language development. TT had the more powerful effect on the children's language and generalised to oral language input throughout the nursery. However, the staff found it difficult to programme the activities and considerable amounts of external training and support were required. For this reason, staff did not continue with the programme at the same level of intensity at the end of the intervention period. In contrast, although SR provided some improvement in oral language but it did not generalise. SR highlighted the importance of oral language whilst placing fewer demands on the staff, and the school intended to continue with the activity at the end of the intervention period.

CONCLUSION

Our study indicates that interventions need to be systemic. Firstly, they need to consider both the WHAT and the HOW of the intervention. Both aspects should be based on current best evidence about language learning for preschool children. It is no longer acceptable to devise interventions on what is thought to work or what is thought to be 'good practice'. However, in addition, it is critical to address the wider context and needs of both the learners and the teachers. Failure to address the former will mean that materials and procedures will be ineffective whereas failure to address the latter will mean that the intervention does not happen as planned or does not continue after the initial implementation phase. As we have shown when these factors are addressed even preschool language support that happens twice weekly for short periods can enhance comprehension. Extending these results to narrative language and evaluating the longer term effects of such programmes requires further work.

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Tables

Table 1. Target Language Skills and supporting activities

Table 2. Baseline measurements and change overtime

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Table 1. Target Language Skills and supporting activities

Target	Talking Time activity	Aims
Development of core vocabulary	Acting out	Develop core vocabulary through play-acting around themes. Data from parental questionnaires and age of acquisition norms were used to help identify target vocabulary.
Ability to use language to predict and infer	Story Talk	Develop the children's abilities to hypothesize about objects and activities and to draw literal and inferential conclusions by structuring discussions around pictures in books.
Production of narrative text	Hexagon game	Support narrative development by using photographs of common activities in the child's environment. The pictures were chosen following consultation with the staff and piloting in a nursery not involved in the study. The photographs (on hexagonal cards) can be connected to form a series of narrative stories.

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Table 2. Baseline measurements and change overtime

Competence		Change predicted from comparison groups	Overall improvement	Differential improvement between groups[4]	Comment
Non-verbal	Block Building	X	Yes	No group differences	
	Picture similarities	X	Yes	I > C	It can be argued that both these tasks draw on semantic
Language contribution	Early number	?	Yes	I > C	knowledge and are thus associated with language level

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[4] Significant differences at the .05 level controlling for baseline performance

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Table 2. Baseline measurements and change overtime (cont)

Competence		Change predicted from comparison groups	Overall improvement	Differential improvement between groups[5]	Comment
Core language skills	Non-word repetition	X	Yes	No group differences	
	Sentence repetition	√	Yes	TT > SR	
	Comprehension	√	Yes	TT > SR	
	Naming vocabulary	√	Yes	TT > SR	
	Narrative length	√	Yes	TT > SR	
	Narrative information	√	Yes	No group differences	

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[5] Significant differences at the .05 level controlling for baseline performance