Evaluation of the Elkan Talking Matters Programme

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Executive Summary

Background
An independent evaluation of the Elkan Talking Matters programme was carried out by a research team in the department of Human Communication Sciences, University of Sheffield. Talking Matters is a training programme aimed at staff who work with pre-school children in early years settings. Talking Matters aims to facilitate knowledge of and skills in supporting children's speech, language and communication and therefore improve outcomes in children's speech, language and communication. The training is delivered to either Key Communication Practitioners (KCPs) or Lead Communication Practitioners (LCPs). KCPs are staff within an early years setting and LCPs work across early years settings in a Local Authority (LA). KCPs and LCPs cascade their training to all the staff they work with in a setting and therefore aim to develop the knowledge and skills of a wider range of staff across early years settings. The overall aim of the evaluation was to determine the impact of the Talking Matters programme on the receptive and expressive language abilities of young pre-school children. Further aims included exploring the potential impact of the differing KCP and LCP programmes, gender differences as well as the levels of deprivation across the participating settings. The evaluation also reported on practitioners' self-perceived confidence in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of young children in their settings as an outcome of completing the Talking Matters programme.

Method
The independent evaluation recruited children from 13 early years settings across four LAs. Each LA provided one KCP setting, one LCP setting and one setting which did not receive the Talking Matters programme and so formed a control setting. In total, five KCP settings, four LCP and four control settings were recruited. Attempts were made to over-recruit a total of 180 children between the ages of 1 year and 6 months and 2 years and 6 months across the settings to the study in order to minimise the high expected rates of attrition. At the baseline (time 1) assessment, 43 children were in the control settings group, 43 children in the KCP group and 40 children in the LCP group (a total recruitment of 126 children). The children's language was assessed using a face to face standardised language measure called the Pre-School Language Scales 5th Edition (PLS-5) (Zimmerman et al 2014). This yielded standardised receptive and expressive language scores as well as a total language raw score. At the baseline assessment/time 1, 126 children across the three groups completed the PLS-5. The Talking Matters Programme was then implemented in the KCP and LCP settings but not the control settings. The post-intervention/time 2 PLS-5 assessment was completed after the implementation of the programme with a total sample of 87 children across the groups (37 children in the control group, 32 children in the KCP group and 18 children in the LCP group). Descriptive and statistical comparisons between the children's performance on the PLS-5 at time 1 and time 2 were carried out in each group, i.e., control, KCP and LCP. Effect sizes were also calculated. Comparisons were not made across groups and instead the comparison focused on the change made from time 1 to time 2 in each group. Maturation was accounted for by comparison to a control group.

Over 400 practitioners who participated in the Talking Matters programme completed a pre and post practitioner confidence questionnaire measuring their perceived confidence in the areas targeted in the Talking Matters programme. The questionnaire consisted of 13 questions and

was completed by the practitioners before starting the programme and then on completion of the programme. The pre and post responses were compared and statistically analysed.

Results
The main findings from the study confirmed the wide range of receptive and expressive language abilities in young children below the age of 3 years. No significant gender differences were identified in the children's receptive and expressive language abilities. The expected high attrition rate from time 1 to time 2 was confirmed. Children in the KCP and LCP groups made more progress in their receptive and expressive language scores from time 1 to time 2 compared to children in the control group. Although more progress was made in the KCP and LCP groups, this progress did not reach statistical significance. Children in the KCP group made the most progress and more progress than children in the LCP group. For the total language raw score, an increase in mean scores was found for the KCP, LCP and control groups with children in the KCP group making the most progress followed by the children in the LCP group and the least progress in the children in the control group. The increase in mean scores in the KCP and LCP groups did reach statistical significance but not in the control group. The KCP and LCP groups were combined to make a combined intervention group. In comparison to the control group, the combined intervention group made more progress on receptive and expressive language as well as the total language raw score. On expressive and receptive language, the increase in the combined intervention group approached statistical significance. On the total language raw score, the increase in the combined intervention group was statistically significant. No effects of deprivation were identified.

On completion of the Talking Matters programme, practitioners reported a highly significant statistical increase in their self-perceived confidence in understanding children's speech, language and communication and working to facilitate the speech, language and communication abilities of the young children in their settings.

Summary and conclusions
The independent evaluation of the Talking Matters programme shows that children in settings who received the programme made more progress in their receptive and expressive language abilities when compared to children in settings who did not receive the programme. Settings receiving the KCP programme made more progress than those receiving the LCP programme. Although the progress in language abilities is modest, they are identifiable when compared to a control group. Statistical analysis showed that although the progress in the KCP and LCP groups was not significant for receptive and expressive language, it was significant for the total language raw score. When the KCP and LCP groups were combined, the progress in this combined intervention group approached statistical significance for receptive and expressive language whereas it did not in the control group. On the total language raw score, the increase in the combined intervention group was significant whereas it was not in the control group.

The Talking Matters programme significantly increased the confidence of practitioners in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of the young children in their settings

This was a complex evaluation to deliver and complete due to several factors including the wide range in the type and demographics of the early years settings, the wide range in the language abilities of the children and the design of the evaluation in conjunction with variations in the timing of the delivery of the Talking Matters programme.

Finally, the independent evaluation shows that the Talking Matters programme does make a positive impact on the receptive and expressive language abilities of young children across a range of early years settings. The findings indicate that the KCP model of delivery may be more effective than the LCP model of delivery. The Talking Matters programme makes a statistically significant impact on practitioners knowledge of and confidence in supporting children's speech, language and communication.

Background

Elklan developed their Talking Matters programme for staff in Early Years settings in 2015. The programme aims to build on the recommendations from the Early Language Development Programme (ELDP) which ran from 2011 to 2015 (Office for Public Management, 2014). The ELDP aims to raise awareness, knowledge and confidence in supporting children's early speech, language and communication (SLC) development by using a cascade model to train staff working in Early Years settings. Elklan's contribution to the ELDP was to develop a course called 'Speech and Language Support for 0-3s' which was offered to some practitioners to extend their learning from the ELDP core training. Reports from the ELDP project can be downloaded from the ICAN website (http://www.ican.org.uk/en/ICAN-Training/Early/ELDP.aspx). The Talking Matters programme was designed to further develop this work into a 'sustainable and embedded programme with potential reach across England' (Elklan, 2016, p4). The programme offers training to Early Years staff, and ensures support and continuity through accredited Lead Communication Practitioners (see below) who are able to offer the training relatively independently of Speech and Language Therapists or Elklan, thus increasing accessibility and reducing costs. Talking Matters aims 'to improve outcomes for children in early years settings, 0-5 years, in the development of speech, language and communication' and 'to develop the capacity of early years practitioners to support parents in developing their children's SLC' (Elklan, 2016, p7).

The settings involved in the Talking Matters programme are identified as either Lead Communication Practitioner (LCP) settings or Key Communication Practitioner (KCP) settings. Lead Communication Practitioners do not necessarily come from specific settings. For example, they could be Early Years staff working across the Local Authority. LCPs are assigned to participating settings to cascade training (see below). Key Communication Practitioners (KCPs) are staff within a setting who are available to provide on-site support and guidance to other staff in the setting about children's communication development and how to facilitate this.

Local Authorities (LAs) were asked to identify five LCPs in their area to be assigned across 25 settings which they identified to receive the Talking Matters programme. In around half of these settings, LAs identified two KCPs. The training programme involved 128 settings across six Local Authorities (data provided by Elklan, April 2016).Training was delivered to LCPs and KCPs by eight accredited Elklan tutors via six face-to-face courses and nine e-learning courses. All courses were aimed at supporting communication development in 0-3 year olds.

All LCPs and KCPs received the full Elklan training. Following the training, and submission of an appropriate portfolio of work, KCPs' learning was accredited at Level 2 or 3 (equivalent standard to UK GCSE or 'A' level). LCPs then cascaded a less in-depth course, 'Communication Counts', to all staff in 5 settings each. LCPs supported settings to change and develop practice in their settings and to undertake an externally accredited audit to achieve *Communication Friendly Setting* status. Following this, LCPs were able to gain a Level 4 award. Approximately half of these settings, 69 from a total of 128 (Elklan, 2016) had KCPs, whereas the remaining 59 did not. Both KCP and LCP settings were then intended to embed and implement this learning. In total, LCPs recorded training 1329 staff across their areas.

Therefore, all 128 settings involved in receiving training have an assigned Lead Communication Practitioner (LCP); 69 of these also have two Key Communication Practitioners (KCPs) working within the setting. Settings with a KCP have two practitioners with more indepth knowledge working in the setting. Settings with a LCP but no KCPs had support from the LCP who had more in-depth knowledge but on a visiting type basis with a

maximum of four visits. This means that the KCP settings had greater access to a practitioner with more in-depth knowledge who worked in the setting and was available most of the time.

Elklan approached the project researchers in the Department of Human Communication Sciences (HCS) at the University of Sheffield to undertake an evaluation of the Talking Matters programme. Members of the research team had previously been involved in the evaluation of the ELDP in 2014 (Clegg, Vance & Rohde, 2015). Elklan are conducting their own evaluation of the impact of the training on practitioner confidence and skill and this is reported in this evaluation report. The current evaluation considers the impact of the training on the children attending early years settings staffed by those who have received the training. All stages in the discussion and design were agreed with Elklan prior to commencement. It was agreed that the evaluation would involve selected settings whose staff had participated in the Talking Matters programme either as KCP or LCP settings, as well as control settings which had not received the Talking Matters training in any form. Following discussions with the research team, a control comparison design was chosen rather than a repeated baseline measure design. This was due to the complexity of the timeline of both the implementation of the Talking Matters programme and the evaluation. It would not have been possible to administer two repeated measures at the baseline assessment. Settings would identify participants and the evaluation team would visit the settings to carry out baseline and outcome measure assessments of the participants' language and communicative skills. The progress made by children between baseline and outcome would be analysed to ascertain if the participants demonstrated improvements in their communicative ability, which could not be accounted for by typical maturation (as compared to the control group).

The overall aim of the evaluation was to determine the impact of the Talking Matters programme on the receptive and expressive language abilities of young pre-school children. Further aims included exploring the potential impact of the differing KCP and LCP programmes, gender differences as well as the levels of deprivation across the participating settings. The evaluation also reported on practitioners' self-perceived confidence in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of young children in their settings as an outcome of completing the Talking Matters programme.

Method
Participants were recruited from thirteen Early Years settings across four Local Authorities (LAs). These LAs were selected from six potential LAs according to availability of suitable settings. Each LA provided one KCP setting, one LCP setting, and one setting which was not due to receive the Talking Matters programme which would act as the control setting. One LA was unable to provide one KCP setting with sufficient potential participants, and so the 'KCP setting' for this LA became two settings providing smaller numbers of participants. Note that, in the analysis of the data these two settings will be considered as one. Participating control settings were prioritised to receive the training following the conclusion of the study. Settings were assigned a project code TM ('Talking Matters') followed by a letter: TMA-TMC are settings in one Local Authority; TMD-TMF in another, and so on (see table 1 for an overview of the participating settings).

Settings
All settings were providers of Early Years care, e.g., nurseries, pre-schools and children's centres. Some settings were attached to mainstream primary schools. Settings were identified according to availability and in consultation with settings staff.

Table 1 Settings according to group (i.e., control, KCP and LCP). Settings TMC1 and TMC2 each provided fewer participants and so are counted together as the KCP setting for their Local Authority (LA).

	TMA	TMB	TMC1	TMC2	TMD	TME	TMF	TMG	TMH	TMI	TMJ	TMK	TML
Control	X				X			X			X		
LCP		X				X			X			X	
KCP			X	X			X			X			X

Settings had been established for varying lengths of time, from 27 years (setting TMB) to one year (TMC2). Settings catered for a range of children, from a maximum of 25 children per session to a maximum capacity of 105. Some settings had more children on role than spaces available (with not all children attending all sessions), whereas other had fewer children on role than spaces available. Staff numbers ranged from ten to 30 and in all settings either some or all staff held appropriate Early Years qualifications at Level 2 or above (see table 2). Six of the settings operated a Key Person system for each attending child. This system assigns a particular member of staff to each child to act as their 'Key Person' who is their 'principal' carer within the setting. The Key Person is the usual first point of call for any concerns regarding the child and typically comes to know the child better than other members of staff. It must be noted that one member of staff in setting TMB had previously received the Elklan Under 5s training, while another had received training under the ELDP. All other settings had no staff with any prior experience of Elklan or other related training programmes.

Only two of the settings operated in term time only and four gave information on extra-curricular activities such as breakfast clubs. All settings except setting TML accepted children up to the age of five years and only three of the settings had a lower age limit above 3 months (either 2;0 or 2;6). Setting TML accepted children between the ages of 0 and four years. Setting buildings ranged from purpose-built facilities, to shared sites with an attached primary school, to converted former residential properties. While two settings were attached to faith schools, only one stated that it gave priority for places to children from an appropriate faith background (in this instance, Catholic).

In their most recent Ofsted reports, seven settings were rated 'Good' in all areas (with one improving from 'Satisfactory'); one was rated 'Outstanding' in most areas, and four held 'Outstanding' ratings in all areas. The remaining setting had yet to be visited by Ofsted, though another setting run by the same provider was rated 'Outstanding' in 2013. Several Ofsted reports made specific mention of speech, language and communication, though others made no such mention. Setting TMD (a control setting) was an accredited ICAN setting. Setting TML (a KCP setting) included an early years communication worker on the staff.

Indices of Deprivation
Table 2 gives information about each of the settings' areas taken from the English Indices of Deprivation 2015. Data were accessed from the Indices of Deprivation Explorer tool at http://dclgapps.communities.gov.uk/imd/idmap.html. The Indices of Deprivation provide comparative information on deprivation in 32844 small areas of the country ('low layer super output areas'; LSOAs), each with a population of, on average, 1500 people. Although published in 2015, the majority of the data were collected in 2012/2013. The Indices cover several domains of deprivation, including income, employment, and education and skills as well as living environments, and barriers to housing and services. The most commonly used index is the Index of Multiple Deprivation (IMD). It is important to note that the indices are comparative only as they do not provide any specific definition of 'deprivation'. The Indices provide information on relative deprivation on a percentage scale. For example, a given area

may be ranked as <30 on the Index of Income, meaning that it is in the 30% most deprived areas for income. A different area might be ranked as >80%, meaning that it is in the 20% least deprived areas for income.

For the purpose of this study, table 2 gives data on the key areas of income, employment, and education, skills and training, as well as data from the IMD. The settings participating in this evaluation are in a range of different areas. For example, it can be seen that setting TMA is in a relatively un-deprived area, being one of the 20% least deprived areas of the country (IMD), and one of the 10% least deprived areas in the domain of employment. On the other hand, setting TMB is in a relatively deprived area, being one of the 30% most deprived areas overall (IMD), and one of the 20% most deprived areas for education, skills and training. It can also be seen that settings TMC1 and TMC2, which shared the role of KCP setting in their Local Authority are broadly comparable in terms of deprivation.

The settings were ranked from the most deprived to the least deprived (see table 3, page 10). Five settings were ranked in the 50% most deprived areas, eight settings in the 50% least deprived areas with four of these eight settings in the 30% least deprived areas according to the IMD. The group allocation across control, KCP and LCP varied with more LCP settings (n=3) in the 50% most deprived settings compared to one control and one KCP setting. More control (n=3) and KCP (n=4) than LCP settings (n=1) were in the 50% least deprived settings. Of the four settings in the 30% least deprived areas, none of these were LCP settings compared to two control and two KCP settings. In summary, more LCP than control and KCP settings were in the more deprived areas.

Participants
Each setting was asked to identify up to 15 children to participate in the evaluation giving a potential maximum number of 180 participants. The research team aimed to over-recruit participants in order to minimise the effects of high expected participant attrition between baseline and outcome assessment. Therefore maximising the amount of children participating at both time 1 (pre-intervention) and time 2 (post-intervention). Exclusionary criteria were: children already known to local speech and language therapy services; children who had reached the age of 36 months (3;0) at time 1 (T1); and children with English as an Additional Language (EAL). EAL was determined by insufficient exposure to English to be able to complete the assessments successfully enough to reflect an accurate record of their abilities, as judged either by the setting staff, or by the assessing SLT on observation within the setting and in discussion with setting staff. It was decided to exclude those known to speech and language therapy services as atypical development could skew the outcome data and potentially limit the findings. Children who had reached the age of 36 months would be outside the target age for the Talking Matters programme and therefore could invalidate results. It was also considered necessary for participants to have sufficient command of the English language to engage with the assessment in order to provide valid performance data. It should also be noted that gender was not used as an exclusionary criteria. Participants were coded according to gender in order to enable further analysis.

Table 2: Descriptions of the 13 settings including data taken from the English Index of Multiple Deprivation (IMD) 2015 for each setting

Setting	Local Authority	Number of staff	Staff qualifications	Ofsted rating	Term time only?	IMD rank (/32844)	IMD %	IDD rank	IDD %	ED Rank	ED %	EST rank	EST %
TMA	Windsor & Maidenhead	27	Majority have Early Years qualifications at Level 3 or above; 2 working towards Foundation Degree	Outstanding in all areas 01/2013	No	29273	>80	23895	>70	29675	>90	27508	>80
TMB	Windsor & Maidenhead	9	Manager: Early Years degree; 5 others Level 5 or equivalent. Over 50% have Diploma in Pre-School Practice	Good in all areas 06/2012	No	8981	<30	7935	<30	9094	<30	5860	<20
TMC1	Windsor & Maidenhead	10	Supervisor & Deputy supervisor: BA Child Development; other staff all NVQ Level 3 Childcare	Outstanding in all areas 08/2012	Yes	20375	>60	14221	<50	17983	>50	18283	>50
TMC2	Windsor & Maidenhead	Not given	Manager: Foundation Degree in Childhood & Education	N/A Opened 2014	No	19084	>50	19329	>50	19572	>50	21294	>60
TMD	Lancashire	10	All have Early Years qualifications at Level 2 or above	Good in all areas 09/2013	No	10031	<40	11125	<40	7414	<30	10386	<40
TME	Lancashire	10	Manager: Early Years Professional Status; 7 have qualifications from Level 2-6; 2 apprentices	Good with outstanding features 06/2013	No	15366	<50	15912	<50	10494	<40	10901	<40
TMF	Lancashire	12	Manager: BTEC National Diploma L3 Catering Services	Good in all areas; up	No	26607	>80	25569	>60	20630	>60	26849	>80

ID	Location	No.	Qualifications	Ofsted	Flag								
			(nursery nursing); 1 QTS; 10 Level 2-5	from satisfactory 12/2015									
TMG	Barnet	26	15 have Early Years qualifications Level 3 and above	Good in all areas; up from satisfactory 05/2015	No	17811	>50	14590	<50	17795	>50	30321	>90
TMH	Barnet	18	17 have Early Years qualifications. Head of Early Years has Early Years Professional Status & BA Early Childhood & Education. 2 have Early Childhood Studies foundation degrees.	Good in all areas 08/2011	No	13622	<50	14375	<50	18817	>50	24621	>70
TMI	Barnet	21	Manager: BA Early Childhood Studies & Early Years Professional Status. 80% of staff have degrees; 2 QTS	Good in all areas 05/2013	No	23123	>70	22963	>60	25466	>70	30639	>90
TMJ	Isle of Wight	30	26 have Early Years qualifications at Level 2 and above	Good in all areas 06/2015	No	23997	>70	20260	>60	20022	>60	17915	>50
TMK	Isle of Wight	13	All have Early Years qualifications	Outstanding in most areas 08/2010	Yes	17664	>50	16334	<50	14184	<50	11395	<40
TML	Isle of Wight	19	17 have Early Years qualifications from Level 2 to Early Years Professional Status	Outstanding in all areas 04/2014	No	13113	<40	15491	<50	9934	<40	8699	<30

IMD = Index of Multiple Deprivation; IDD = Income Deprivation Domain; ED = Employment Domain; EST = Education, Skills and Training Domain

Table 3 Ranking of the 13 settings according to the English Index of Multiple Deprivation (IMD) 2015

Setting	Condition/ Group	IMD rank (/32844)	IMD %	IDD rank	IDD %	ED rank	ED %	EST rank	EST %	Ranking of deprivation
TMB	LCP	8981	<30	7935	<30	9094	<30	5860	<20	1 (most deprived)
TMD	Control	10031	<40	11125	<40	7414	<30	10386	<40	2
TML	KCP	13113	<40	15491	<50	9934	<40	8699	<30	3
TME	LCP	15366	<50	15912	<50	10494	<40	10901	<40	4
TMH	LCP	13622	<50	14375	<50	18817	>50	24621	>70	5
TMC2	KCP	19084	>50	19329	>50	19572	>50	21294	>60	6
TMK	LCP	17664	>50	16334	<50	14184	<50	11395	<40	7
TMG	Control	17811	>50	14590	<50	17795	>50	30321	>90	8
TMC1	KCP	20375	>60	14221	<50	17983	>50	18283	>50	9
TMI	KCP	23123	>70	22963	>60	25466	>70	30639	>90	10
TMJ	Control	23997	>70	20260	>60	20022	>60	17915	>50	11
TMF	KCP	26607	>80	25569	>60	20630	>60	26849	>80	12
TMA	Control	29273	>80	23895	>70	29675	>90	27508	>80	13 (least deprived)

IMD = Index of Multiple Deprivation; IDD = Income Deprivation Domain; ED = Employment Domain; EST = Education, Skills and Training Domain

Across all the settings, 129 children were identified and consent provided by a parent/carer. Three children were subsequently removed from the study due to withdrawal of consent or insufficient exposure to English to enable completion of the assessment as judged by the assessor. The total number of children initially recruited was therefore 126 comprising 63 male participants and 63 female participants. The mean number of children initially recruited from each setting was 10.5.

The mean age of all participants at Time 1 (T1) was 27.81 months (S.D. 4.89) with ages ranging from 16 months (1;04) to 35 months (2;11). Table 4 shows participant age information divided by gender.

Table 4: **Age and gender of all the participants across all the settings**

	Male (n=63)	Female (n=63)
Mean age (months)	28.10	27.43
Standard deviation	5.08	4.76
Range	19 (16-35)	18 (17-35)

Study design
For each setting, data was collected at two time points. The first at time 1 (T1) before staff in the setting received the Talking Matters programme and once approximately six months later at time 2 (T2) after the programme. The inclusion of control settings established a baseline against which to compare the language development of children in the KCP and LCP settings. Due to the time constraints, a repeated baseline measure study design was not feasible. The timing of T2 data collection was constrained by delays in delivering the training, practical concerns relating to each setting, and difficulties in the retention of the young participants over the summer holiday period. Therefore, it was not always possible to visit settings for T2 data collection at a consistent time following the training across all settings. Table 5 shows the design and timeline of the study.

Table 5 Design and timeline of the evaluation study

November 2015-February 2016	January-March 2016	May-September 2016
Time 1 (T1)		Time 2 (T2)
Baseline Data Collection	Elklan training to the setting	Outcome Data Collection

To further understand the length of time between the T1 baseline and T2 post intervention assessments, table 6 shows the mean number of days from the T1 to T2 assessments for the control, KCP and LCP settings.

Table 6 Length of time between the T1 and T2 assessments in the control, KCP and LCP settings

	Mean days from T1 to T2	Minimum (months)	Maximum (months)	Approximate months from T1 to T2
Control (n=4)	203.78 (27.00)	162 days (5 months)	282 days 9 months)	6 months
KCP (n=5)	200.11 (23.87)	162 days (5 months)	225 days (7 months)	6 months
LCP (n=4)	205.91 (22.26)	169 days (5 months)	280 days (9 months)	6 months

The mean number of days between the T1 and T2 assessments was very similar across the control, KCP and LCP settings. The control and LCP settings had a longer maximum time at 9 months compared to 7 months for the KCP settings.

Ethics

The study received ethical approval from the University of Sheffield Ethics Committee in July 2015. Standard procedures were followed in the ethics application. These included the production of information sheets and consent forms aimed at both participating settings and parents/carers of potential participants. Information sheets and consent forms were produced in language appropriate to the target audience. Potential participants were given information about how to contact the research team with any questions or concerns and it was made clear that consent could be withdrawn by parents at any time with no explanation required. Assessors ensured that they had received completed and signed consent forms before meeting any given participant to carry out the assessment.

Measures

Children's language development was measured at both T1 and T2 by a face-to-face direct play-based assessment of language comprehension and expression using the Pre-School Language Scales 5th Edition (PLS-5) (Zimmerman, I., Steiner, V., Pond, R. 2014). This is a standardised assessment measure with normative data which allows for the calculation of standardised scores. Due to the age of the participants, this assessment needed to be short with assessments taking no longer than 30 minutes. A familiar member of staff, usually a Key Worker was present during the assessments in order to enable participants to settle in the assessment room and thus perform to the best of their ability. Assessments were carried out by qualified speech and language therapists who received training in the administration of the PLS-5 from the Evaluation Co-ordinator (authors). The assessors were blind to whether the setting was a control, KCP or LCP setting. The PLS-5 yields standardised scores for receptive and expressive language and a raw score for total language. These scores were used in the analyses.

While the PLS-5 includes a Home Communication Questionnaire for parental report of communicative abilities, it was decided not to use this as an additional source of participant data. Due to constraints of time, likelihood of poor participation or return rates, and concerns over the objectivity of parental responses (based on Clegg, Vance and Rohde 2015, accessible at http://www.ican.org.uk/~/media/Ican2/Training/Downloads/Sheffield%20ELDP%20Report.ashx)

Procedures

All assessment visits were initially arranged by the research team in conjunction with the settings. Given that many children attend their early years setting for specified sessions rather than for full five days a week, visit dates and times were arranged to enable a maximum number of participants to be seen while causing minimal disruption to the setting. Travel to the settings was arranged by the research team according to need and practicality, including overnight accommodation where required. Assessors were provided with contact details for the key contact person in each setting, and were expected to confirm their attendance directly with this key person. Any issues which arose prior to an assessment visit were dealt with by the research team and the setting. Once on site, assessors were able to deal with any difficulties in the most appropriate manner, either directly or in contact with the research team. Following an assessment visit, assessors judged whether an additional visit would be necessary or possible, and, if so, made arrangements for additional visits directly with the setting before informing the research team. The research team then made any necessary travel or accommodation

arrangements. Assessors and settings staff were encouraged to contact the research team at any time with any questions or concerns.

Each participant's name and date of birth were provided to assessors, who then assigned a participant code. The first participant seen in setting TMA was assigned the code TMA1, and so on. This information was then returned to the research team either by hand or by recorded delivery. Confidential participant information (name and date of birth only) was then stored on the University of Sheffield's computer system with access only provided to members of the research team, and paper copies of the information were destroyed. Prior to outcome assessment visits, assessors were provided with printed copies of confidential information for participants in settings which they would visit, and kept secure by them then destroyed following the visit. In this way data were anonymised.

Ideally, settings were asked to provide a quiet, separate space for assessors to see the children in. This was not always possible, and so settings were coded as having separate spaces, semi-separate spaces within the child's usual nursery area, or no separate space (that is, assessments were carried out in the same area as other children were playing).

Analysis
Following assessment visits, assessors returned their anonymised assessment scoresheets to the research team, either by hand or by recorded delivery. Scoresheets were scored by the research team and data entered into SPSS statistical analysis software. Scoresheets were then stored securely within the Department of Human Communication Sciences, University of Sheffield, with only members of the research team having access. Data entered into SPSS included not only participant scores but also age in months, gender, date of assessment, condition of setting (control, KCP or LCP), information on the assessment space (as detailed in the 'Procedures' section above), whether participants were speakers of English as an Additional Language, and any noted information on their performance in the assessment, such as whether assessors had been forced to finish assessment before reaching ceiling as participants had not cooperated, or whether participants had been removed from the study due to evidence of insufficient exposure to the English language.

Practitioner Confidence Questionnaire
As part of their research into the impact of the Talking Matters programme on practitioner confidence, Elklan asked practitioners to complete a measure of their own confidence before and after receiving the Talking Matters programme. The questionnaire was devised by Elklan and consisted of 13 questions asking practitioners to rate their confidence in the areas targeted by the Talking Matters programme.   Practitioners competed the same questionnaire before and then after completing the Talking Matters programme. Elklan devised and co-ordinated this aspect of the evaluation.

The 13 questions comprising the questionnaire are detailed below:
Question 1: How confident would you be to describe the difference between the terms 'speech', 'language' and 'communication'?
Question 2: How confident do you feel in identifying young children with speech, language and communication delay or who are at risk of delay?
Question 3: How confident do you feel in tracking the progress of young children's speech, language and communication skills?
Question 4: Which monitoring tools do you currently use to assess and track the progress of young children's speech, language and communication skills?
Question 5: How confident do you feel in knowing the difference between an environment which is or is not communication friendly?

Question 6: Thinking about your interaction with young children, how confident do you feel that your style of interaction promotes the communication of all young children but particularly those who have or are at risk of speech, language and communication delay?

Question 7: How confident do you feel in supporting children to understand and name new vocabulary?

Question 8: How confident do you feel in helping young children to understand things you say to them?

Question 9: How confident do you feel in helping children to develop their talking skills?

Question 10: How confident do you feel in using play and everyday situations to promote the speech, language and communication skills of all young children but particularly those with a delay or at risk of delay in these skills?

Question 11: How confident do you feel in talking to parents about their child's speech, language and communication development?

Question 12: How confident do you feel in talking to parents about how you and the family can work together to develop the speech, language and communication skills of a young child with a delay or at risk of a delay in these skills?

Question 13: How confident do you feel in understanding the advice given to you by someone like a speech and language therapist or teaching advisor when they visit your setting to discuss a child?

All questions were rated on the following scale with the exception of question 4:
1: not at all confident
2: a little confident
3: reasonably confident
4: confident
5: extremely confident

For the purposes of the statistical analysis, the responses were re-coded as follows:
0: not at all confidence
1: a little confident
2: reasonably confident
3: confident
4: extremely confident

Pre and post training questionnaire data was available for 473 respondents. While most respondents completed the questionnaire fully on both occasions, some respondents did not give an answer to each question on both occasions, so for some questions the sample size is slightly reduced.

Data were entered into the SPSS statistical package and paired-sample t-tests were conducted to compare the mean responses on the questionnaire pre and post the training.

Results
Results: Time 1 (T1) Baseline Data
This section begins with a descriptive analysis of the data gathered from the baseline (T1) assessment visits. Data from outcome (T2) assessment visits will then be presented. Finally, comparative data from baseline and outcome assessment visits will be presented and statistically analysed.

Data from the initial assessment visits provides the baseline language scores of the participants. Data are presented for all settings and then presented according to setting

condition/group (control, KCP, LCP) and finally gender. Results are presented for raw scores and standardised scores for receptive and expressive language separately as well as the total language raw score.

All data was analysed to determine the distribution of scores (receptive language, expressive language and total language) in the control KCP and LCP groups. The mean, median and scores of skewness and kurtosis are shown in appendix 1. Interestingly, although there was a wide range in the scores across the control, KCP and LCP groups, the data in general was normally distributed with some exceptions for receptive language.

Raw scores from each individual setting: receptive language score, expressive language score and total language score at T1

There is a wide variation in the receptive, expressive and total language raw scores of the children across the settings (see table 7). Setting TMH has the lowest mean total score at 43.00 and setting TMG has the highest mean total score at 64.64.

Setting TMH also has the lowest mean score for both receptive (19.67) and expressive language (21.17). Setting TMG has the highest mean score for receptive language at 32.55. Overall, participants in setting TMH gained the lowest mean scores overall, and settings TMC1 and TMG had the highest overall scores with both these settings performing at a similar level.

This difference in scores may be accounted for by the ages of the participants in these settings. The mean age of participants in setting TMH was 23.92 months, whereas in setting TMC1 participants had a higher mean age of 29.12 months and 27.18 in setting TMG.

Table 8 shows the standardised receptive and expressive language scores. Standardised scores take into account participants' ages and show how the participant is performing relative to their same-age peers.

Participants in setting TMG had the highest mean standardised score overall for receptive language at 105.00 Setting TMH had the lowest mean standardised score for receptive language at 76.75.This pattern was replicated for expressive language. Setting TMG had the highest mean standardised score for expressive language at 104.09 and setting TMH had the lowest mean score for expressive language at 79.58.

For receptive language, the smallest standard deviation (S.D.) was in setting TMB with a S.D. of 11.51. The highest S.D. was in setting TMI at 40.49 and this setting is a clear outlier as the second-highest S.D. was 19 in setting TMD. For expressive language, the lowest S.D. was 6.96 in setting TMB again and the highest was 19.71 in setting TMK.

The highest S.D. for receptive language was in setting TMI with a range of 101. Again, this is an outlier and the second-highest range was in setting TMD at 64. The smallest range of standardised scores for receptive language was in setting TMC1 with a range of 29. For expressive language the highest range was in setting TMJ at 70 and the smallest was in setting TMB at 21.

In summary, the variation in language abilities across the children was wide and reflects the variation reported for receptive and expressive language abilities in this population of young children.

Table 7 Time 1 (T1) Receptive language, expressive language and total language raw scores for participants in each setting.

Setting		T1 total score	T1 receptive score	T1 expressive score
TMA (n=8)	Mean (S.D.)	57.63 (6.90)	29.00 (4.21)	28.63 (2.88)
	Range	19	12	8
TMB (n=7)	Mean (S.D.)	58.86 (5.18)	31.57 (4.01)	27.29 (2.50)
	Range	15	10	7
TMC1 (n=4)	Mean(S.D.)	63.50 (11.15)	31.75 (5.97)	31.75 (5.38)
	Range	25	13	12
TMC2 (n=8)	Mean (S.D.)	61.25 (12.35)	31.13 (6.31)	30.13 (6.42)
	Range	33	17	18
TMD (n=12)	Mean (S.D.)	52.75 (13.22)	26.42 (7.06)	26.33 (7.19)
	Range	48	20	28
TME (n=11)	Mean(S.D.)	56.09 (13.11)	27.55 (6.35)	29.09 (6.09)
	Range	49	21	22
TMF (n=12)	Mean (S.D.)	56.50 (15.00)	28.67 (8.87)	27.83 (6.39)
	Range	46	28	18
TMG (n=11)	Mean (S.D.)	64.64 (10.13)	32.55 (4.63)	32.09 (6.36)
	Range	32	13	20
TMH (n=12)	Mean (S.D.)	43.00 (9.48)	19.67 (3.37)	21.17 (6.01)
	Range	32	11	17
TMI (n=10)	Mean (S.D.)	51.30 (7.90)	27.60 (4.97)	24.70 (5.33)
	Range	28	18	20
TMJ (n=12)	Mean (S.D.)	60.90 (13.19)	29.00 (5.12)	26.75 (4.33)
	Range	28	14	14
TMK (n=10)	Mean (S.D.)	52.44 (13.00)	30.40 (7.31)	30.50 (6.74)
	Range	49	25	24
TML (n=9)	Mean (S.D.)	55.83 (12.15)	26.33 (6.67)	26.11(6.75)
	Range	44	23	22
Total (n=126)	Mean (S.D.)	55.83 (12.15)	28.19 (6.65)	27.56 (6.32)
	Range	58	29	32

Table 8 Standardised scores for receptive and expressive language and total raw score in each setting relative to the Index of Multiple Deprivation (IMD) for each setting at T1

Setting	Group	IMD ranking		T1 standardised receptive language scores	T1 standardised expressive language scores	Total language raw score	Total language raw score ranking
TMB	LCP	1 (most deprived)	Mean (S.D.)	94.71 (11.51)	84.14 (6.96)	58.86 (5.18)	9
			Range	36	21	15	
TMD	Control	2	Mean (S.D.)	80.25 (19.00)	81.67 (19.15)	52.75 (13.22)	4
			Range	64	68	48	
TML	KCP	3	Mean (S.D.)	91.22 (15.74)	89.56 (15.83)	55.83 (12.15)	5
			Range	51	70	44	
TME	LCP	4	Mean (S.D.)	83.18 (14.20)	88.36 (14.76)	56.09 (13.11)	6
			Range	47	51	49	
TMH	LCP	5	Mean (S.D.)	76.75 (14.02)	79.58 (14.69)	43.00 (9.48)	1 (lowest)
			Range	45	50	32	
TMC2	KCP	6	Mean (S.D.)	94.16 (13.98)	93.25 (13.73)	61.25 (12.35)	11
			Range	36	39	33	
TMK	LCP	7	Mean (S.D.)	88 (18.24)	90.6 (19.71)	52.44 (13.00)	3
			Range	57	58	49	
TMG	Control	8	Mean (S.D.)	105.00 (14.55)	104.09 (17.34)	64.64 (10.13)	13 (highest)
			Range	52	57	32	
TMC1	KCP	9	Mean (S.D.)	88 (13.09)	90.75 (13.96)	63.50 (11.15)	12
			Range	29	31	25	
TMI	KCP	10	Mean (S.D.)	80.4 (40.49)	92.1 (16.08)	51.30 (7.90)	2
			Range	101	50	28	
TMJ	Control	11	Mean (S.D.)	99.75 (13.25)	92.75 (12.29)	60.90 (13.19)	10
			Range	43	42	28	
TMF	KCP	12	Mean (S.D.)	100.25 (16.68)	97 (10.26)	56.50 (15.00)	7
			Range	60	40	46	
TMA	Control	13 (least deprived)	Mean (S.D.)	100 (14.31)	97.5 (11.05)	57.63 (6.90)	8
			Range	42	27	19	

Language abilities of the participants according to group, i.e., control, KCP and LCP at T1

This section presents the standardised receptive and expressive language scores as well as the total language raw score of the children in each of the groups, i.e., the control group, the KCP group and the LCP group at T1.

Receptive Language

Table 9 Standardised scores for receptive language in the control, KCP and LCP groups

	Control (n=43)	KCP (n=43)	LCP (n=40)
Mean	95.70	96.90	84.50
SD	18.01	14.20	15.70
Range	70 (57-127)	67 (66-133)	58 (60-118)

The LCP mean score for receptive language is lower than the mean scores for the KCP and control groups, though with a smaller range. The highest score was in the KCP group with the control group slightly below. However, data from all three groups have a wide range and a large standard deviation.

Expressive Language

Table 10 Standardised scores for expressive language in the control, KCP and LCP groups

	Control (n=43)	KCP (n=43)	LCP (n=40)
Mean	93.44	93.02	85.60
SD	17.32	13.60	15.30
Range	68 (61-129)	59 (66-125)	70 (59-129)

As with receptive language, the mean standardised scores on expressive language are lower in the LCP group than the KCP and control groups, though this time with a wider range than for receptive language. There is little difference between the mean scores of the control and KCP groups.

Total Language Score – Raw Score

Table 11 Total language raw scores in the control, KCP and LCP groups

	Control (n=43)	KCP (n=43)	LCP (n=40)
Mean	57.53	55.98	53.85
SD	10.91	12.54	12.98
Range	34-82	33-83	28=86

Again, the mean total language raw score was lower in the LCP group compared to the control and KCP groups. The control group gained the highest mean score.

Analysis of gender at T1

An analysis of gender was conducted to determine if there are any gender differences in receptive and expressive language in the participants at T1. The detailed results are shown in table 14, page 21.

Table 12 shows the mean standardised scores of participants on receptive language according to gender across all the settings

Table 12 Gender analysis of participants on receptive language (mean standardised score)

	Male (n=63)	Female (n=63)
Mean	89.92	91.46
SD	17.54	22.23
Range	70	127

The mean receptive standardised language score was similar in the males and females with a slightly higher score in the females. There was a large amount of variation in both the females and males with a smaller amount in the males. Statistical analysis using a t-test showed that the difference between males and females was not significant (t= -.43; p = .67).

A similar pattern was found for expressive language where males and females had similar mean standardised scores with the females gaining a slightly higher score (see table 11). Again, there was a large amount of variation in the males and females with more in the males than females. Statistical analysis using a t-test showed that the difference between males and females was not significant (t= -.46; p= .65).

Table 13 Gender analysis of participants on expressive language (mean standardised score)

	Male (n=63)	Female (n=63)
Mean	90.14	91.44
Median	90	91
SD	17.96	13.31
Range	67 (59-126)	63 (66-129)

Table 14 Summary of the gender differences across the control, KCP and LCP groups

Condition	Gender		T1 receptive standardised score	T1 receptive percentile	T1 expressive standardised score	T1 expressive percentile	T1 actual age (months)	T1 age equivalent (months)
Control (n=43)	Male (n=23)	Mean	93.09	42.42	91.65	37.15	29.14	24.70
		SD	20.51	34.33	20.45	34.91	3.919	6.67
		Range	70	95.8	65	95.5	14	26
	Female (n=20)	Mean	98.70	48.60	95.50	39.65	26.90	25.40
		SD	14.56	28.28	13.07	26.23	3.66	5.49
		Range	58	94	58	94	15	24
LCP (n=40)	Male (n=22)	Mean	83.82	22.00	85.32	24.79	28.36	22.50
		SD	14.45	22.84	17.23	28.52	5.05	7.58
		Range	49	72	63	92.7	19	29
	Female (n=18)	Mean	85.28	25.91	85.83	20.39	28.78	23.39
		SD	17.42	29.01	13.03	22.5	5.01	7.06
		Range	58	87.6	58	94	17	28
KCP (n=43)	Male (n=18)	Mean	93.33	39.72	94.11	40.44	26.50	23.44
		SD	15.65	29.36	14.85	28.51	6.16	7.37
		Range	50	85	45	83	18	24
	Female (n=25)	Mean	90.12	48.00	92.24	33.12	26.88	24.96
		SD	28.62	25.90	12.81	24.4	5.32	6.85
		Range	127	91	59	94	16	26

Results: Time 2 (T2) Outcome Data

This section begins with a descriptive analysis of the data gathered from the outcome (T2) assessment visits. Data are presented for all the individual settings and then according to group (control, KCP or LCP). Results are presented for raw scores first and then standardised receptive and expressive language scores.

Comparative data from the baseline and outcome assessments are then presented and analysed to determine the change in expressive and receptive language scores as well as total language raw scores from T1 to T2 in each of the control, KCP and LCP groups.

Receptive, expressive and total language raw scores across the individual settings

At T2, there is again a wide variation in the language abilities of the participating children. Table 15 shows the range of raw scores across the settings. Similar to T1, setting TMH has the lowest mean total language score (52.50). It should be noted that only two children were seen at T2 in this setting. Setting TMA has the second-lowest mean score (63.13). Setting TMG has the highest mean total score (75.33). This setting also had the highest mean total language score at T1.

For receptive language, the setting with the highest mean score was TMI (38.00). At T1, setting TMG had the highest mean receptive language score. The lowest mean score for receptive language was in setting TMH (27.50), as at T1. The second-lowest mean score is in setting TMA (31.88).

For expressive language, the highest mean was in setting TMI (37.78). The lowest mean scores are again seen in setting TMH (25.00), with the second-lowest being found in setting TMA (31.25).

In summary, the wide variation in language scores across the raw scores for receptive and expressive language and total language score should be noted.

Receptive and expressive standardised scores across the individual settings

Descriptive analysis of the standardised scores for receptive and expressive language at T2 (see table 16) shows that setting TMI has the highest mean standardised score for receptive language (107.67). At T1, the highest receptive mean standardised score was in setting TMG (98.67) (which at T2 has the third highest mean score). The lowest receptive mean standardised score was in setting TMK at 83.57.

The highest standardised score for expressive language was in setting TMI at 110.78. The lowest score was in setting TMH (79.00) with the second-lowest setting as TMK (86.43). A comparison of this data to T1 shows that in setting TMI children had higher expressive and receptive language scores compared to the other settings over the duration of the project.

In summary, there is a wide variation in the standardised receptive and expressive language scores of the participating children. This confirms the variability of early language abilities in young children which is expected and reported in the literature.

Table 15 Raw scores at T2 for participants in each group (control, KCP and LCP): receptive, expressive and total language scores across individual settings

SETTING		T2 total score	T2 receptive score	T2 expressive score
TMA (n=8)	Mean (S.D)	63.13 (7.77)	31.88 (4.60)	31.25 (4.23)
	Range	24	13	11
TMB (n=4)	Mean (S.D.)	74.50 (3.32)	37.00 (2.94)	37.50 (1.29)
	Range	7	6	3
TMC2 (n=4)	Mean (S.D.)	72.50 (7.72)	37.00 (4.83)	35.50 (3.10)
	Range	18	11	7
TMC2 (n=5)	Mean (S.D.)	74.40 (9.45)	37.00 (5.36)	35.40 (5.32)
	Range	21	13	13
TMD (n=11)	Mean (S.D.)	67.18 (5.91)	33.45 (3.59)	33.73 (2.90)
	Range	18	12	8
TME (n=5)	Mean (S.D.)	69.60 (7.02)	34.20 (5.36)	35.40 (1.82)
	Range	17	13	4
TMF (n=10)	Mean (S.D.)	69.20 (12.95)	35.00 (7.07)	34.20 (6.44)
	Range	41	20	22
TMG (n=9)	Mean (S.D.)	75.33 (11.12)	37.78 (5.31)	37.56 (6.06)
	Range	39	18	21
TMH (n=2)	Mean (S.D.)	52.50 (.70)	27.50 (2.12)	25.00 (1.41)
	Range	1	3	2
TMI (n=9)	Mean (S.D.)	74.11 (7.96)	38.00 (4.27)	37.78 (5.12)
	Range	23	14	14
TMJ (n=9)	Mean (S.D.)	69.11 (6.43)	35.56 (3.21)	34.11 (4.23)
	Range	19	7	12
TMK (n=7)	Mean (S.D.)	66.43 (16.49)	33.14 (8.82)	33.29 (7.78)
	Range	45	23	22
TML (n=4)	Mean (S.D.)	65.75 (6.39)	32.25 (3.20)	33.50 (3.42)
	Range	14	7	8
Total (n=87)	Mean (S.D.)	69.47 (9.93)	34.98 (5.38)	34.61 (5.18)
	Range	48	26	24

Table 16 Standardised scores across individual settings for receptive and expressive language at T2

Setting		T2 standardised receptive language scores	T2 standardised expressive language scores
TMA (n=8)	Mean	86.38 (9.90)	86.75 (9.69)
	Range	28	28
TMB (n=4)	Mean	91.50 (5.76)	96.50 (11.12)
	Range	12	24
TMC2 (n=4)	Mean	92.25 (12.36)	91.00 (7.07)
	Range	29	15
TMC2 (n=5)	Mean	93.20 (9.01)	92.60 (10.74)
	Range	24	29
TMD (n=11)	Mean	83.73 (9.01)	86.55 (7.23)
	Range	31	26
TME (n=5)	Mean	89.60 (7.47)	95.40 (8.56)
	Range	18	21
TMF (n=10)	Mean	98.00 (10.47)	97.90 (12.60)
	Range	37	35
TMG (n=9)	Mean	98.67 (7.63)	101.67 (10.01)
	Range	23	34
TMH (n=2)	Mean	86.50 (16.26)	79.00 (4.24)
	Range	23	6
TMI (n=9)	Mean	107.67 (12.48)	110.78 (14.50)
	Range	35	50
TMJ (n=9)	Mean	99.44 (8.31)	99.00 (11.65)
	Range	19	33
TMK (n=7)	Mean	83.57 (14.85)	86.43 (15.12)
	Range	40	44
TML (n=4)	Mean	84.75 (11.36)	90.25 (13.60)
	Range	24	32
Total (n=87)	Mean	92.99 (12.31)	94.74 (13.12)
	Range	66	74

Table 23 Change scores from T1 to T2 for the KCP and LCP settings ranked according to IMD

Setting	Group	IMD ranking	Standardised expressive language	Standardised receptive language	Total language raw score
TMB (n=4)	LCP	1 (most deprived)	-3.21 (8)	+12.36 (2)	+15.64 (2)
TML (n=4)	KCP	2	+1.77 (5)	+0.69 (5)	+9.92 (9)
TME (n=5)	LCP	3	+6.42 (3)	+7.04 (3)	+13.81 (5)
TMH (n=2)	LCP	4	+9.75 (2)	-0.58 (7)	+9.50 (10)
TMC2 (n=5)	KCP	5	-0.96 (6)	-0.65 (8)	+13.15 (6)
TMK (n=7)	LCP	6	-4.43 (9)	-4.17 (9)	+13.99 (4)
TMC1 (n=4)	KCP	7	+4.25 (4)	+0.25 (6)	+9.00 (11)
TMI (n=9)	KCP	8	+27.27 (1)	+18.68 (1)	+22.81 (1)
TMF (n=10)	KCP	9 (least deprived)	-2.25 (7)	+0.90 (4)	+12.70 (7)

(+/- change from T1 to T2 score; (ranking of change from 1 = most change to 10 = least change))

Comparing standardised language scores from T1 to T2 in the control, KCP and LCP groups

This section of the analysis compares the change in receptive and expressive language scores from T1 (pre-intervention) to T2 (post intervention) for each group, i.e., control, KCP and LCP. A paired samples t-test is used to determine if the change in language scores from T1 to T 2 is significant in each group. Groups are not compared with one another. Instead, it is the change in scores from T1 to T2 in each group that is compared. In addition, effect sizes were also calculated to quantify the size of the difference between the control group and each intervention group (i.e., KCP and LCP). Effect sizes emphasise the size of the difference rather than confounding this with sample size. Effect sizes are interpreted as small, medium and large. Medium and large effect sizes indicate that the size of the difference between the control group and intervention group (i.e. KCP or LCP) is indicative of a substantial difference. Effect sizes can be used alongside the results from the statistical analyses. It must be noted that only the participants that took part in both assessments (T1 and T2) are included in this analysis and so the sample numbers are smaller than in the results described for T1.

Comparison of receptive language from time 1 to time 2 in control, KCP and LCP groups

The results and analysis for the comparison of the T1 and T2 receptive standardised language scores are described.

Table 17 Comparison of T1 and T2 receptive standardised language scores for the control KCP and LCP groups

	Control (N=37)		KCP (n=32)		LCP (n=18)	
	T1	T2	T1	T2	T1	T2
Mean	95.30	91.76 (-3.54)	89.87	97.59 (+7.72)	86.46	87.33 (+0.87)
SD	18.33	11.08	26.06	12.93	15.62	11.13
Range	57-127	73-113	66-133	75-130	60-117	64-104

(+/- change from T1 to T2 score)

An increase in T1 scores to T2 scores was identified for the KCP and LCP groups compared to the control group. The largest increase was found in the KCP group. There was a decrease in the control group. Both KCP and LCP groups show an increase in receptive language scores from T1 to T2 (difference shown in brackets). For the control group, the mean score of 95.30 (S.D. 18.33) at T1 decreased to 91.76 (S.D. 11.08) at T2. This difference of -3.54 was not significant (t=1.45; p=.16). For the KCP group, the mean score of 89.87 (S.D. 26.06) at T1 increased to 97.59 (S.D. 12.93) at T2. This was an increase of 7.72 but was not statistically significant (t=-1.45; p=.16; r=0.50). For the LCP group, the mean score of 86.46 (S.D. 15.62) at T1 increased by 0.87 to 87.33 (S.D.11.13) at T2. Although an increase, this was not statistically significant (t=-.26; p = .79; r = 0.40).

Comparison of expressive language from T1 to T2 in control, KCP and LCP groups

The results and analysis for the comparison of the T1 and T2 expressive standardised language scores are described.

An increase in T1 scores to T2 scores was found in the control, KCP and LCP groups. The largest increase was found in the KCP group then the LCP group and the smallest in the control group. For the control group, the mean score of 92.43 (S.D. 16.94) at T1 increased to 93.30 (S.D. 11.59) at T2. This difference was not significant (t= -.35; p=.73).

Table 18 Comparison of T1 and T2 expressive standardised language scores for the control, KCP and LCP groups

	Control (N=37)		KCP (n=32)		LCP (n=18)	
	T1	**T2**	**T1**	**T2**	**T1**	**T2**
Mean	92.43	93.30 (+0.87)	93.50	98.87 (+5.37)	88.61	90.33 (+1.72)
SD	16.94	11.59	13.37	14.26	15.67	12.60
Range	61-126	71-116	66-125	77-143	71-129	69-113

For the KCP group, the mean score of 93.50 (S.D. 13.37) at T1 increased to 98.87 at T2 (S.D. 14.26). This was an increase of 5.85 but was not statistically significant (t=--1.67; p=.10; r = 0.50). For the LCP group, the mean score of 88.61 (S.D. 15.67) at T1 increased to 90.33 (S.D.12.60) at T2. Although an increase of +1.72, this was not statistically significant (t=- .48; p = .63; r = 0.30).

Comparison of the total language score (raw scores) from time 1 to time 2 in control KCP and LCP groups
The results and analysis for the comparison of the T1 and T2 total language raw scores are described.

Table 19 Comparison of T1 and T2 total language raw scores for the control, KCP and LCP groups

	Control (N=37)		KCP (n=32)		LCP (n=18)	
	T1	**T2**	**T1**	**T2**	**T1**	**T2**
Mean	60.97	68.76 (+7.79)	55.84	71.28 (+15.44)	56.72	67.56 (+10.84)
SD	10.48	8.76	12.06	9.78	13.94	9.78
Range	34-81	52-92	33-79	44-85	32-66	44-85

(+/- change from T1 to T2 score)

There was a larger increase in T1 scores to T2 scores for the KCP and LCP groups compared to the control group. The largest increase was found in the KCP group then the LCP group followed by the control group. For the control group, the mean score of 60.97 (S.D. 10.48) at T1 increased to 68.76 (S.D. 8.78) at T2. This difference was not significant (t= -2.96; p=11). For the KCP group, the mean score of 55.84 (S.D. 12.06) at T1 increased to 71.38 (S.D. 9.78) at T 2. This increase was statistically significant (t= -10.94; p=.00; r = 0.60). For the LCP group, the mean score of 56.72 (S.D. 13.94) at T1 increased to 67.56 (S.D.12.22) at T2. This increase was statistically significant (t=- 4.31; p = .000; r = 0.60). On total language raw scores, the difference between T1 and T2 scores was significant for the KCP and LCP groups but not the control group.

Combining the KCP and LCP group compared to the control group
The next stage of the analysis combined the KCP and LCP groups into one intervention group to compare the T1 language scores against the T2 language scores across both these KCP and LCP groups.

Table 20 Comparison of T1 and T2 receptive standardised language scores for the KCP and LCP group combined and the control group

	Control (N=37)		KCP and LCP (n=50)	
	T1	T2	T1	T2
Mean	95.30	91.76 (-3.54)	88.64	95.60 (+6.96)
SD	18.33	11.08	22.73	13.17
Range	57-127	73-113	6-133	64-130

(+/- change from T1 to T2 score)

There was a larger increase of 5.26 in T1 scores to T2 scores for the KCP and LCP combined group compared to the control group. For the control group, the mean score of 95.30 (S.D. 18.33) at T1 decreased to 91.76 (S.D. 11.08) at T2. This difference of -3.54 was not significant (t=1.45; p=.16). For the KCP/LCP group combined, the mean score of 88.64 (S.D. 22.73) at T1 increased to 95.60 (S.D. 13.17). This was an increase of 6.96 and approached statistical significance (t=-2.45; p=.06; r = 0.50).

Table 21 Comparison of T1 and T2 expressive standardised language scores for the KCP and LCP group combined and the control group

	Control (N=37)		KCP and LCP (n=50)	
	T1	T2	T1	T2
Mean	92.43	93.30 (+0.87)	86.74	95.80 (+9.06)
SD	16.94	11.59	14.28	14.17
Range	61-126	71-116	66-129	69-143

(+/- change from T1 to T2 score)

There was a larger increase of 9.06 in T1 scores to T2 scores for the KCP and LCP combined group compared to the control group. For the control group, the mean score of 92.43 (S.D. 16.94) at T1 increased to 93.30 (S.D. 11.59) at T2. This difference of 0.87 was not significant (t= -.35; p=.73).   For the KCP/LCP group combined, the mean score of 86.74 (S.D. 14.28) at T1 increased to 95.80 (S.D. 14.17) at T2. This was an increase of 9.06 and approached statistical significance (t=-3.45; p=.055; r = 0.50).

Table 22 Comparison of T1 and T2 total raw language scores for the KCP and LCP group combined and the control group

	Control (N=37)		KCP and LCP (n=50)	
	T1	T2	T1	T2
Mean	60.97	68.76 (+7.79)	56.16	70.00 (+13.84)
SD	10.48	8.76	12.63	10.76
Range	34-81	52-92	56-85	59-90

(+/- change from T1 to T2 score)

There was a larger increase of 13.84 in T1 scores to T2 scores for the KCP and LCP combined group compared to the control group. For the control group, the mean score of 60.97 (S.D. 10.48) at T1 increased to 68.76 (S.D. 8.76) at T2. This difference was not significant (t= -2.96; p=11).   For the KCP/LCP group combined, the mean score of 56.16 (S.D. 12.63) at T1

increased to 70.00 at T2 (S.D. 10.76). This was an increase of 13.84 and was statistically significant (t=-10.58; p=.00; r = 0.50)

Exploring the potential influence of deprivation on change scores across the KCP and LCP settings/combined group

Table 23 (page 25) shows the language change scores for each setting from T1 to T2 and the ranking of each change score where 1 is the most change and 10 is the least change. The control settings have been removed and the remaining KCP and LCP settings re-ranked without the control settings. There are no clear findings here and no data to support the children in the settings in the more deprived areas as making more progress than those children in settings in less deprived areas.

Non-parametric analysis

Due to the non-normal distribution of the receptive language scores (appendix 1), all the statistical analyses above were repeated using a non-parametric version of the paired samples t-test (the wilcoxen signed rank test). The results from this non-parametric analyses did not differ from the parametric analyses.

ANOVA analyses

A two factor mixed design ANOVA was conducted for receptive language, expressive language and total language using the raw scores. The purpose of this ANOVA analysis was to determine the interaction between time and group, a main effect of time and a main effect of group. Post hoc t tests were then used to statistically analyse any change in scores from T1 to T2 in each of the control, KCP and LCP groups. Only those participants that took part in both assessments (T1 and T2) are included in this analysis and so the sample numbers are smaller than in the results described for all participants at T1.

Receptive Language

An increase in T1 scores to T2 scores was identified for the KCP and LCP groups compared to the control group. The largest increase was found in the KCP group with a slight decrease in the control group. There was no significant interaction between group and time ($F_{(2,84)}$ = 2.306, p=.106, partial eta squared = .052). There was a significant main effect of time ($F_{(1,84)}$ = 159.044, p = <0.001, partial eta squared = .654). The main effect of group approached significance ($F_{(2,84)}$=17.01, p<0.06, partial eta squared = 0.101). Post hoc pairwise t tests were conducted to analyse the change from T1 to T2 in each group. The mean score of the control group at T1 was 28.95 (SD 5.67). This decreased slightly to 27.50 (SD 4.58) at T2. This difference of -1.46 was not significant (t=1.45; p=.16; r=0.02). The mean score of the KCP group at T1 was 28.59 (S.D. 6.67). This increased to 36.06 (S.D. 5.46) at T2. This was an increase of 7.47 but was not statistically significant (t=-1.45; p=.16; r=0.50). The mean score of the LCP group at T1 was 28.44 (S.D. 7.28).This increased by 5.23 to 33.67 (S.D.6.58) at T2. Although an increase, this was not statistically significant (t=-.26; p = .79; r = 0.40).

Expressive Language

An increase in T1 scores to T2 scores was found in the control, KCP and LCP groups. The largest increase was found in the KCP group then the LCP group and the smallest in the control group. There was no significant interaction between group and time ($F_{(2,84)}$ = 1.76, p=.170, partial eta squared = .040). There was a significant main effect of time ($F_{(1,84)}$ = 127.02, p = <0.001, partial eta squared = .602). The main effect of group was not significant ($F_{(2,84)}$=.058, p=.94, partial eta squared = 0.01). Post hoc pairwise t tests were conducted to analyse the change from T1 to T2 in each group. The mean score of the control group at T1 was 28.00 (SD 5.59). This increased to 31.22 (SD 4.76) at T2. This difference of 4.22 was not

significant (t=1.45; p=.16; r = 0.40). The mean score of the KCP group at T1 was 27.56 (S.D. 6.10). This increased to 35.47 (S.D. 5.21) at T2. This was an increase of 7.91 but was not statistically significant (t=-1.45; p=.16; r=0.50). The mean score of the LCP group at T1 was 28.61 (S.D. 6.42).This increased by 5.28 to 33.89 (S.D.5.98) at T2. Although an increase, this was not statistically significant (t=-.26; p = .79; r = 0.40).

Total Language

There was a larger increase in T1 scores to T2 scores for the KCP and LCP groups compared to the control group. The largest increase was found in the KCP group then the LCP group followed by the control group. There was no significant interaction between group and time (F(2,84) = 2.49, p=.089, partial eta squared = .056). There was a significant main effect of time (F(1,83) = 184.088, p = <0.001, partial eta squared = .689). The main effect of group was significant (F(2,83)=.26.17, p=.48, partial eta squared = 0.92). Post hoc pairwise t tests were conducted to analyse the change from T1 to T2 in each group. The mean score of the control group at T1 was 60.97 (S.D. 10.48). This increased to 68.76 (S.D. 8.78) at T2. This difference was not significant (t= -2.96; p=11; R=0.04). The mean score of the KCP group at T1 was 55.84 (S.D. 12.06). This increased to 71.38 (S.D. 9.78) at T 2. This increase was statistically significant (t= -10.94; p=.00; r = 0.60). The mean score of the LCP group at T1 was 56.72 (S.D. 13.94). This increased to 67.56 (S.D.12.22) at T2. This increase was statistically significant (t=- -4.31; p = .000; r = 0.60). On total language raw scores, the difference between T1 and T2 scores was significant for the KCP and LCP groups but not the control group.

Comparing the KCP group with the control group

The next stage of the analysis compared the KCP group with the control group. The LCP group was excluded from this stage of the analysis due to the smaller number in the LCP group and so the KCP group was not compared with the LCP group. It was also important to determine the impact of the more intensive KCP intervention compared to the less intensive LCP on the children's language scores.

For receptive language, there was no significant interaction between group and time (F(1,67) = 3.19, p=.079, partial eta squared = .045). There was a significant main effect of time (F1, 67) = 183.862, p<0.001, partial eta squared = .733). The main effect of group was significant (F(1,67) = 16.88, p<0.01. partial eta squared = .08). The children in the KCP settings made significantly more progress in receptive language than the children in the control settings.

For expressive language, there was no significant interaction between group and time (F(1,67) = 1.921, p=.170, partial eta squared = .028). There was a significant main effect of time (F1, 67) = 134.171, p<0.001, partial eta squared = .667). The main effect of group was significant (F(1,67) = 12.42, p<0.03. partial eta squared = .03). The children in the KCP settings made significantly more progress in expressive language than the children in the control settings.

For the total PLS-5 score, there was no significant interaction between group and time (F(1,67) = 4.176, p=.065, partial eta squared = .02). There was a significant main effect of time (F1, 67) = 221.867, p<0.001, partial eta squared = .768). The main effect of group was significant (F(1,67) = 15.37, p<0.04. partial eta squared = .091). The children in the KCP settings made significantly more progress in total language scores than the children in the control settings.

A clearer indication of the children's progress is given by comparing age equivalent scores (see table above). Here, control children advanced by 2 months during the intervention. The intervention/treated children advanced by 7 months, a difference of five months compared to the control children. After the intervention, the KCP children's language age equivalent scores

are only a month behind their chronological age compared to 2 months behind at T1. After the intervention, the language age equivalent scores of the control children was 6 months behind their chronological age compared to 5 months at T1. The interaction between time and group, i.e., if children were in the KCP group or not was significant $(F1,67) = 9.67, p<0.03)$.

Results: Practitioner Confidence Questionnaire
Results from the statistical analysis of the pre and post practitioner confidence questionnaire are presented for each question on the questionnaire.

Question 1: How confident would you be to describe the difference between the terms 'speech', 'language' and 'communication'?

	Mean (S.D.)	Significance
Pre-course confidence (n=471)	2.07 (.84)	
Post-course confidence (n=471)	3.15 (.69(	p<0.001

Question 2: How confident do you feel in identifying young children with speech, language and communication delay or who are at risk of delay?

	Mean (S.D.)	Significance
Pre-course confidence (n=471)	2.20 (.83)	
Post-course confidence (n=471)	3.18 (.67)	p<0.001

Question 3: How confident do you feel in tracking the progress of young children's speech, language and communication skills?

	Mean (S.D.)	Significance
Pre-course confidence (n=468)	2.09 (.89)	
Post-course confidence (n=468)	3.11 (.69)	p<0.001

Question 5: How confident do you feel in knowing the difference between an environment which is or is not communication friendly?

	Mean (S.D.)	Significance
Pre-course confidence (n=461)	2.23 (.87)	
Post-course confidence (n=461)	3.31 (.67)	p<0.001

Question 6: How confident do you feel that your style of interaction promotes the communication of all young children, particularly those who have or are at risk of speech, language and communication delay?

	Mean (S.D.)	Significance
Pre-course confidence (n=463)	2.29 (.78)	
Post-course confidence (n=463)	3.11 (.64)	p<0.001

Question 7: How confident do you feel in supporting children to understand and name new vocabulary?

	Mean (S.D.)	Significance
Pre-course confidence (n=461)	2.27 (.81)	
Post-course confidence (n=461)	3.15 (.68)	p<0.001

Question 8: How confident do you feel in helping young children to understand things you say to them?

	Mean (S.D.)	Significance
Pre-course confidence (n=459)	2.39 (.79)	

Post-course confidence (n=459)	3.19 (.67)	p<0.001

Question 9: How confident do you feel in helping children to develop their talking skills?

	Mean (S.D.)	Significance
Pre-course confidence (n=462)	2.29 (.77)	
Post-course confidence (n=462)	3.17 (.66)	p<0.001

Question 10: How confident do you feel in using play and everyday situations to promote the speech, language and communication skills of all young children, but particularly those with a delay or at risk of a delay?

	Mean (S.D.)	Significance
Pre-course confidence (n=466)	2.26 (.77)	
Post-course confidence (n=466)	3.17 (.65)	p<0.001

Question 11: How confident do you feel in talking to parents about their child's speech, language and communication development?

	Mean (S.D.)	Significance
Pre-course confidence (n=459)	2.03 (.97)	
Post-course confidence (n=459)	3.01 (.79)	p<0.001

Question 12: How confident do you feel in talking to parents about how you and the family can work together to develop the speech, language and communication skills of a young child with a delay or at risk of a delay in these skills?

	Mean (S.D.)	Significance
Pre-course confidence (n=464)	1.97 (.97)	
Post-course confidence (n=464)	2.98 (.80)	p<0.001

Question 13: How confident do you feel in understanding the advice given to you by someone like a speech and language therapist or teaching advisor when they visit your setting to discuss a child?

	Mean (S.D.)	Significance
Pre-course confidence (n=465)	2.29 (.87)	
Post-course confidence (n=465)	3.13 (.72)	p<0.001

Total scores on the Practitioner Confidence Questionnaire

	Mean (S.D.)	Significance
Pre-course confidence (n=472)	26.21 (7.9)	
Post-course confidence (n=472)	37.27 (7.0)	p<0.001

The results show that practitioner confidence increased across all 13 questions. Overall, practitioners were least confident before training on question 12 'talking to parents about how they can work together to develop the communication skills of their children'. Following training, this remained the question where practitioners were least confident. The largest increase in confidence was for question 1 'describing the difference between 'speech', 'language' and 'communication' and question 5 'knowing the difference between settings which are, or are not, communication friendly'. In summary, practitioners increased their confidence in all the areas targeted by the 13 questions on the questionnaire.

Summary of findings

An independent evaluation of the Elklan Talking Matters programme was conducted to determine the impact of the programme on the receptive and expressive language abilities of young children (aged between 1 year and 4 months to 2 years and 11 months) across a range of early years settings. The overall aim of the evaluation was to determine the impact of the Talking Matters programme on the receptive and expressive language abilities of young pre-school children. Further aims included exploring the potential impact of the differing KCP and LCP programmes, gender differences as well as the levels of deprivation across the participating settings. The evaluation also reported on practitioners' self-perceived confidence in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of young children in their settings as an outcome of completing the Talking Matters programme. An intervention group versus control group design was used where the participating children's receptive and expressive language abilities were measured before the programme was implemented into the settings and then after the implementation of the programme.

Within the intervention group, there were two further groups, a group of children who were in settings who had participated in the Key Communication Practitioner (KCP) programme and those in the Lead Communication Practitioner (LCP) programme. The children in the control settings did not participate in any aspect of the Elklan Talking Matters programme. All the participating children were assessed with a standardised receptive and expressive language measure that yielded standardised scores for expressive and receptive language as well as total language raw scores. Statistical comparisons between time 1 and time 2 language scores were made within each group and then with a combined KCP and LCP intervention group. Groups were not compared to one another.

There was a large amount of variation as to the timing of the programme implementation across the settings and therefore the timing of the pre-intervention (time 1) assessment and the post-intervention assessment (time 2). Time 1 data collected took place from November 2015 to February 2016, with the Talking Matters programme implemented across settings between January and March 2016. Time 2 data collection took place from May to September 2016. However, on closer examination (table 4b, page 10), the mean number of days between the T1 and T2 assessments across the control, KCP and LCP settings was very similar at around 6 months.

In summary, the main findings are:

- There was a wide variation in the type and demographics of the settings participating in the evaluation.
- There was a wide variation in the receptive and expressive language abilities of the participating young children aged from 1 year and 4 months to 2 years and 11 months.
- There were no significant gender differences in the receptive and expressive language abilities of the participating children. Females had slightly higher receptive and expressive language abilities but this difference was not statistically significant.
- Levels of deprivation varied across the settings. According to the IMD, five settings were ranked in the 50% most deprived areas, eight settings in the 50% least deprived areas with four of these eight settings in the 30% least deprived areas. More LCP settings than control and KCP settings were in the most deprived areas.
- As expected, there was a high attrition rate in this population between the time 1 and time 2 assessments despite over recruitment of children at time 1 and robust measures put in place to minimize attrition.
- For receptive language, children in the KCP and LCP settings made more progress than the children in the control settings. There was more progress in the KCP than LCP

settings. There was a small decrease in receptive language for children in the control settings. The progress made in the KCP and LCP settings was not statistically significant nor was the decrease in the control settings.

- For expressive language, children in the KCP, LCP and control settings all showed an increase in scores. The largest increase was in the KCP then LCP settings and the smallest in the control settings. None of the increases reached statistical significance.

- For the total language raw scores, increases were found for children in all three settings with the largest in the KCP then LCP settings and the smallest in the control settings. The increase in the KCP and LCP settings did reach statistical significance but not in the control settings.

- The KCP and LCP settings were combined to give a combined intervention group. In comparison to the control settings/group, this combined group made more progress than the control group on receptive and expressive language as well as the total language raw score. On expressive and receptive language, the increase in the combined group approached statistical significance. On the total language score, the increase in the combined group was statistically significant.

- Examination of the combined intervention group showed there was no clear data to support the impact of deprivation on the progress children made. Children in the settings in the more deprived areas did not make more or less progress than children in the settings in the least deprived areas.

- Practitioners completing the Talking Matters programme reported significantly increased confidence after the training in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of young children in their settings.

There are a number of methodological considerations in the interpretation of the findings from this evaluation. Firstly, there is a wide variation in the ages of the children, the settings they attend, the amount of time they spend in the settings and their receptive and expressive language abilities before the implementation of the Talking Matters programme. The expected high rate of attrition was confirmed and will have impacted on the representativeness of the participants at the time 2 assessment compared to the time 1 assessment. This is especially pertinent to the children in the LCP settings where there was the most attrition. In terms of the evaluation design, the second consideration is the use of an intervention group versus control group design rather than a repeated measures design. Finally, the analysis compared change in language scores from pre-intervention to post intervention in each group in line with the design of the study rather than comparing groups or repeated measures. The above caveats need to be considered in the interpretation of the findings.

Conclusions
This independent evaluation of the Talking Matters programme shows that children in settings who received the programme made more progress in their receptive and expressive language abilities when compared to children in settings who do not receive the programme. Settings receiving the KCP programme made more progress than those receiving the LCP programme. Although the progress in language abilities is modest they are identifiable when compared to a control group. Statistical analysis showed that although the progress in the KCP and LCP settings was not significant for receptive and expressive language, it was significant for the total language raw score. When the KCP and LCP settings were combined, the progress in this combined intervention group approached statistical significance for receptive and expressive language whereas it did not in the control group. On the total language score, the increase in the combined group was statistically significant and not in the control group.

Over 400 practitioners who participated in the Talking Matters programme reported significantly increased confidence in understanding children's speech, language and communication, and working to facilitate the speech, language and communication abilities of the children in their settings.

The study shows that the Talking Matters programme increases practitioners' confidence of their knowledge and skills in children's speech, language and communication and makes a positive impact on the receptive and expressive language abilities of young children across a range of early years settings.

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Appendix 1
Descriptive data analysis
Analysis of normal distribution

Table 1.1 Descriptive analysis of all the participants at the Time 1 data collection: mean (and standard deviation (S.D.), median, range and measures of normal distribution (skewness and kurtosis) and their significance

		Receptive Language	Expressive Language	Total raw score
Control (n=43)	Mean (S.D.)	95.70 (18.01)	93.44 (17.32)	57.53 (10.91)
	Range	70 (57-127)	68 (61-118)	34-82
	Median			
	Skewness	-.50	.14	.08
	Kurtosis	-.54	-.42	.08
	Significance	.02*	.20	.20
KCP (n=43)	Mean (S.D.)	96.90 (14.20)	93.02 (13.60)	
	Range	67 (66-133)	59 (66-125)	
	Median			
	Skewness	-1.9	.14	.45
	Kurtosis	.50	-.18	.76
	Significance	.01*	.20	.12
LCP (n=40)	Mean (S.D.)	84.50 (15.70)	85.60 (15.30)	
	Range	58 (60-118)	70 (59-129)	
	Median			
	Skewness	.29	1.02	.09
	Kurtosis	-.57	1.45	.15
	Significance	.20	.04*	.20

Table 1.2 Descriptive analysis of only those participants at both Time 1 and Time 2 data collection at Time 1: mean (and standard deviation (S.D.), median, range and measures of normal distribution (skewness and kurtosis) and their significance

		Time 1 Receptive Language	Time 1 Expressive Language	Time 1 Total raw score
Control (n=37)	Mean (S.D.)	95.30 (18.33)	92.43 (16.94)	60.97 (10.48)
	Range	70 (57-127)	65 (61-126)	53 (34-81)
	Median			
	Skewness	.04	.09	.24
	Kurtosis	-.97	-.94	.14
	Significance	.20	.20	.20
KCP (n=32)	Mean (S.D.)	89.87 (26.06)	93.50 (13.37)	55.84 (12.06)
	Range	67 (66-133)	59 (66-125)	46 (33-79)
	Median			
	Skewness	.50	.90	-.70
	Kurtosis	.69	1.31	.25
	Significance	.14	.08	.09

LCP (n=18)	Mean (S.D.)	86.46 (15.62)	88.61(15.67)	56.72 (13.94)
	Range	57 (60-117)	58 (71-129)	34 (32-66)
	Median			
	Skewness	-.61	.40	-.38
	Kurtosis	-.45	-.23	-.57
	Significance	.06	.20	.20

Table 1.3 Descriptive analysis of only those participants at both Time 1 and Time 2 data collection at Time 2: mean (and standard deviation (S.D.), median, range and measures of normal distribution (skewness and kurtosis) and their significance

		Time 2 Receptive Language	Time 2 Expressive Language	Time 2 Total raw score
Control (n=37)	Mean (S.D.)	91.76 (11.08)	93.30 (11.59)	68.76 (8.76)
	Range	40 (73-113)	45 (71-116)	40 (52-92)
	Median			
	Skewness	-.39	.13	.04
	Kurtosis	-.58	-.39	.05
	Significance	.18	.20	.20
KCP (n=32)	Mean (S.D.)	97.59 (12.93)	98.87 (14.26)	71.28 (9.78)
	Range	55 (75-130)	66 (77-143)	41 (44-85)
	Median			
	Skewness	-1.83	.08	.39
	Kurtosis	4.31	.20	.77
	Significance	.017*	.20	.07
LCP (n=18)	Mean (S.D.)	87.33 (11.13)	90.33 (12.60)	67.56 (12.22)
	Range	40 (64-104)	44 (69-113)	45 (44-89)
	Median			
	Skewness	.08	1.42	-.05
	Kurtosis	-.41	2.02	-.09
	Significance	.20	.10	.20