## Ready to Learn Cluster randomised trial

### Background

This study was part of a wider programme of work undertaken by Barnardo’s Northern Ireland (NI) to develop an early intervention with a focus of raising literacy and numeracy achievement amongst primary-school pupils, and particularly those from socially disadvantaged backgrounds. With the support of The Atlantic Philanthropies and the Office of the First Minister and Deputy First Minister (OFMDFM), the Ready to Learn intervention was designed by Dr Hannah Jane Braiden (Educational Psychologist and Research Consultant) and Roz McFeeters (Experienced Teacher and Primary School Principal), with Julie Healy (Barnardo’s NI, Ready to Learn Programme Manager). The data presented as part of this study concern the evaluation of the intervention, carried out by a team of researchers at the Institute of Child Care Research at Queen’s University Belfast (QUB), led by Prof Geraldine Macdonald, currently at Bristol University.

### Ethical Approval

Ethical approval for the study was secured from Queen’s University Belfast. As no serious adverse consequences were deemed likely, the research team did not establish a data monitoring committee to monitor cumulated data. However, an International Advisory Committee (IAC) received regular reports on study progress.

### The Intervention

The Ready to Learn intervention was an after school programme that targeted academic and social skills of pupils. The programme included two components delivered according to a manual:

(a) An academic programme, designed to enhance literacy achievement – the primary outcome that the programme aimed to influence.

(b) A social programme incorporating social, emotional and behavioural regulation skills – the secondary outcome.

The content of the Academic programme reflected the ‘Talking and Listening’ component of the Northern Ireland Foundation Stage curriculum and focused on skills such as: Attention and listening; Phonological awareness; Concepts of print and beginnings of print; Oral language, social use of language and thinking; Extended vocabulary. The programme was delivered on afternoon sessions on three days per week, with the after-school programme being presented to participants as a “Club”. Each Club was staffed by a team led by a qualified teacher and other assistants (all qualified early years professions), with a ratio of at least 1 adult to 8 children.

The social programme drew on social learning theory, and used the principles of basic positive behaviour skills. The type of skills promoted included turn taking, sharing, and following rules and routines.

In addition, the Ready to Learn programme included a Family Literacy Strand, designed to help parents or carers of children taking part in the programme, and support them in taking an effective role in engaging with their child’s education and learning.

## Methods

The Programme was evaluated using a Randomised Trial design, with Schools being the unit of randomisation. Schools were stratified by school size and type of school. There were 16 schools taking part: 9 were allocated to the Intervention (Ready to Learn programme), and 7 to the Control group. Children within the schools allocated to the Control group received the usual curriculum. Overall, 584 pupils were enrolled in the study. Of these, 345 were in schools taking part to the intervention, and 239 in schools in the control arm of the study.

Within the 16 schools taking part in the study, all pupils in Year 1 (aged approximately 5 years) were eligible to take part in the Programme and its Evaluation. The Programme and its Evaluation were conducted longitudinally from School Year 1 (children aged approximately 5 years) to School Year 3 (children aged approximately 7 years).Some children dropped out of the Programme and its Evaluation (e.g. because they moved to a different School); New pupils that joined the participating Schools in Year 2 and Year 3 were also eligible to join the Programme and its Evaluation: new pupils were eligible to join the study arm (Ready to Learn vs. Usual Curriculum) according to group to which their School was allocated. Only three pupils moved from one school in one arm of the study to the school in another arm. In the analyses, these individuals were considered in the group to which they were originally allocated.

The Programme was evaluated by collecting a series of measures of pupils’ verbal, phonetic, reading, and other literacy-related skills, as well as measures concerning pupil’s social-affective competencies and problem behaviour, as described in Table 1. Some measures were collected every year across the three years of the Programme and its Evaluation, but others, e.g. the British Picture Vocabulary Scale (BPVS), were only collected in School Year 1 (baseline) and in Year 3. The York Assessment of Reading Comprehension (YARC) was only administered in Year 3.

Table 1: Outcomes and Measures

**Primary outcomes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Source*** | ***Outcome*** | ***Measures*** | ***Time of testing*** | ***Mode of collection*** |
| Children | Reading Abilities | York Assessment of Reading Comprehension (YARC) | Year 3 only | Researcher |
| Children | Literacy | Concepts about Print (CAP) | Years 1 and 3 | Researcher |
| Children | Phonetic Skills | The Naming Speed and Non-Word Reading Tests from the Phonological Assessment Battery (PhAB) | Years 1, 2 and 3 | Researcher |
| Children | Phonetic Skills | Word Recognition and Phonic Skills [WRaPs3] | Years 1, 2 and 3 | Researcher |
| Children | Vocabulary Skills | British Picture Vocabulary Scale- II (BPVA-II) | Years 1 and 3 | Researcher |
| Children | Attitudes to reading | Elementary Reading Attitude Survey | Years 1, 2 and 3 | Researcher |

**Secondary Outcomes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Source*** | ***Outcome*** | ***Measures*** | ***Time of testing*** | ***Mode of collection*** |
| Children | Problem Behaviour | Strengths and Difficulties Questionnaire (SDQ) | Years 1, 2 and 3 | Teacher-reported questionnaire |
| Children | Social Skills | The Social Skills Scale of the teacher-report Child Preschool and Kindergarten Behaviour Scales (PKBS) | Years 1, 2 and 3 | Teacher-reported questionnaire |
| Children | Emotional competence | The Assessment of Children’s Emotional Skills (ACES) | Years 1, 2 and 3 | Researcher |

The first measurement occasion was when pupils were in primary School Year 1. Due to the tight timetable imposed on the study, and the necessity of minimising the burden of data collection on both children and teachers, the first measurement took place in the first semester of the year, when children had already started participation in the programme. The third measurement took place in the last semester of Year 3, when pupils completed participation in the programme. There was no further follow-up measurement after delivery of the programme.

All measures were collected by trained university researchers. The only exception concerns the SDQ and PKBS assessments, which were completed by teachers familiar with the pupil.

In Table 2, we provide a list of the variables available. A short description of the variables and their characteristics is included.

Table 2. List of Variables

| **Variable Name** | **Label** | **Description** | **Values** | **Variable Type** |
| --- | --- | --- | --- | --- |
| ID | Study Number | Unique identifier for each pupil in the study.  NOTE: pupils are nested within schools (see variable: ‘school’). | 1-587 | Categorical |
| school | School Study Number. | Unique identifier for each school in the study.  NOTE: pupils are nested within schools. | 1-16 | Categorical |
| stgroup | Study Group | Whether pupil was in a school assigned to the Intervention or the Control arm of the study. NOTE: schools were randomly allocated to the intervention or control arm. | 0=Control; 1=Intervention | Categorical |
| schooltype | Type of School | Whether school is a state school, catholic-maintained, or integrated school. | 1=State-maintained School; 2=Catholic-maintained School; 3=Integrated school | Categorical |
| schoolsize | School Size | Categorical variable describing the general school size | 1=Small; 2=Medium;  3=Large | Ordinal |
| male | Male | Dummy variable for pupil’s gender, whereby 1 indicates male, 0 female. | 0=No; 1=Yes | Categorical |
| fsm | Entitled to free school meals: | Whether pupil is entitled to Free School Meals. | 0=No; 1=Yes | Categorical |
| ethnother | Non British/Irish | Dummy variable to indicate ethnic origin of the child, whereby 0 indicates a child of White British or Irish heritage, and 0 indicate a child belonging to any other ethnic or mixed ethnic group | 0=No; 1=Yes | Categorical |
| nonenglish | English not first language | Dummy variable to indicate first language spoken at pupil’s home, whereby 0 indicates English as first language, 1 indicates any other language | 0=No; 1=Yes | Categorical |
| bpvs\_stw1 | BPVS standardized wave 1 | British Picture Vocabulary Scale (BPVS): Pupil’s standardised scores in wave (year) 1 | 69-127 | Interval |
| bpvs\_stw3 | BPVS standardized wave 3 | British Picture Vocabulary Scale (BPVS): Pupil’s standardised scores in wave (year) 3 | 68 – 115 | Interval |
| bpvs\_agew1 | Pupil’s age at time BPVS wave 1 completed | Age of pupil (in years, and decimals of year) at time BPVS wave 1 was completed | 4.273785 -5.763176 | Interval |
| bpvs\_agew3 | Pupil’s age at time BPVS wave 3 completed | Age of pupil (in years, and decimals of year) at time BPVS wave 3 was completed | 6.422998 -7.887748 | Interval |
| cap\_totw1 | W1 CaP total | Concept About Printing (CAP) total score in wave (year) 1 | 0 -20 | Count |
| cap\_totw3 | w3 CaP total | Concept About Printing (CAP) total score in wave (year) 3 | 2-22 | Count |
| cap\_agew1 | Age at completion CAP W1 | Age of pupil (in years, and decimals of year) at time CAP wave 1 was completed | 4.273785 -5.730322 | Interval |
| cap\_agew3 | Age at completion CAP w3 | Age of pupil (in years, and decimals of year) at time CAP wave 3 was completed | 6.422998 - 7.887748 | Interval |
| phabnw\_tot\_w1 | PHAB Non-Word reading total score W1 | Phonological Assessment Battery (PHAB), Non-Word reading total raw score in wave (year) 1 | 0 -20 | Count |
| phabnw\_tot\_w2 | PHAB Non-Word reading total score W2 | Phonological Assessment Battery (PHAB), Non-Word reading total raw score in wave (year) 2 | 0 - 20 | Count |
| phabnw\_tot\_w3 | PHAB Non-Word reading total score W3 | Phonological Assessment Battery (PHAB), Non-Word reading total raw score in wave (year) 3 | 0 – 20 | Count |
| phab\_age\_w1 | Age at completion PHAB W1 | Age of pupil (in years, and decimals of year) at time PHAB test wave 1 was completed | 4.769336 - 6.31896 | Interval |
| phab\_age\_w2 | Age at completion PHAB W2 | Age of pupil (in years, and decimals of year) at time PHAB test wave 2 was completed | 5.765914 -7.263518 | Interval |
| phab\_age\_w3 | Age at completion PHAB W3 | Age of pupil (in years, and decimals of year) at time PHAB test wave 3 was completed | 6.743327 -8.317591 | Interval |
| phabnw\_stan\_w2 | PHAB Non-Word reading standardised score W2 | Phonological Assessment Battery (PHAB), Non-Word reading Standardised Scores in wave (year) 2 | 81-131 | Interval |
| phabnw\_stan\_w3 | PHAB Non-Word reading standardised score W3 | Phonological Assessment Battery (PHAB), Non-Word reading Standardised Scores in wave (year) 3 | 79-131 | Interval |
| phab\_pct\_w1 | PHAB Picture naming speed W1 | Phonological Assessment Battery (PHAB), Picture naming speed (in seconds) in wave 1 | 56 -398 | Interval |
| phab\_pct\_w2 | PHAB Picture naming speed W2 | Phonological Assessment Battery (PHAB), Picture naming speed (in seconds) in wave 2 | 35-328 | Interval |
| phab\_pct\_w3 | PHAB Picture naming speed W3 | Phonological Assessment Battery (PHAB), Picture naming speed (in seconds) in wave 3 | 57-234 | Interval |
| phab\_dig\_w1 | PHAB Digit naming speed W1 | Phonological Assessment Battery (PHAB), Digit naming speed (in seconds) in wave 1 | 41-958 | Interval |
| phab\_dig\_w2 | PHAB Digit naming speed W2 | Phonological Assessment Battery (PHAB), Digit naming speed (in seconds) in wave 2 | 48-448 | Interval |
| phab\_dig\_w3 | PHAB Digit naming speed W3 | Phonological Assessment Battery (PHAB), Digit naming speed (in seconds) in wave 3 | 34-198 | Interval |
| WRAPS\_tot\_w1 | Total WRAPS score (baseline) | Word Recognition and Phonic Skills Test (WRAPS), total row score in wave (year) 1 | 0-22 | Count |
| WRAPS\_stdz\_w1 | Standardised WRAPS score | Word Recognition and Phonic Skills Test (WRAPS), Standardised Score in wave (year) 1 | 70-125 | Interval |
| wrap\_age\_w1 | WRAP age w1 | Age of pupil (in years, and decimals of year) at time WRAPS test wave 1 was completed | 4.416153 - 5.785079 | Interval |
| WRAPS\_tot\_w2 | WRAP w2 total | Word Recognition and Phonic Skills Test (WRAPS), total row score in wave (year) 2 | 0-52 | Count |
| WRAPS\_stdz\_w2 | Wrap Stand sc w2 | Word Recognition and Phonic Skills Test (WRAPS), Standardised Score in wave (year) 2 | 61-130 | Interval |
| wrap\_age\_w2 | wrap age w2 \_dec | Age of pupil (in years, and decimals of year) at time WRAPS test wave 2 was completed | 5.535934 -6.926763 | Interval |
| WRAPS\_tot\_w3 | WRAP w3 total | Word Recognition and Phonic Skills Test (WRAPS), total row score in wave (year) 3 | 3-59 | Count |
| WRAPS\_stdz\_w3 | Wrap Stand sc w3 | Word Recognition and Phonic Skills Test (WRAPS), Standardised Score in wave (year) 3 | 62-132 | Interval |
| wrap\_age\_w3 | wrap age w3 \_dec | Age of pupil (in years, and decimals of year) at time WRAPS test wave 3 was completed | 6.436687 7.887748 | Interval |
| Completed\_Yarc | Did child complete YARC test | Categorisation of pupils that underwent the York Assessment Reading Comprehension (YARC) battery according to whether they were unable to complete both test passages (-8), completed at least one test passage (0), completed both passages (1). | -8=Was not able to complete either; 0=Completed one passage; 1=Completed both passages | Categorical |
| yarc\_age\_w3 | Age at completion YARC W3 | Age of pupil (in years, and decimals of year) at time York Assessment Reading Comprehension (YARC) battery test wave 3 was completed | 6.625599 8.317591 | Interval |
| YARC\_Accuracy\_stz\_w3 | YARC stdz Accuracy w3 - observed scores | York Assessment Reading Comprehension (YARC) battery: Standardized Accuracy score in wave (year) 3 | 76-127 | Interval |
| YARC\_Rate\_stz\_w3 | YARC stdz Rate w3 - observed scores | York Assessment Reading Comprehension (YARC) battery: Standardized Rate score in wave (year) 3 | 70-130 | Interval |
| YARC\_Compreh\_stz\_w3 | YARC stdz Comprehension w3 - observed scores | York Assessment Reading Comprehension (YARC) battery: Standardized Comprehension score in wave (year) 3 | 74-130 | Interval |
| YARC\_accuracy\_cens | YARC acccuracy W3 - censored score for those unable to complete | Censored York Assessment Reading Comprehension (YARC) battery: Standardized Accuracy score in wave (year) 3.  Pupils that were unable to complete both YARC passages were given a standardized score lower than the lowest observed score in the sample (censoring from below). | 75-127 | Interval |
| YARC\_rate\_cens | YARC rate W3 - censored score for those unable to complete | Censored York Assessment Reading Comprehension (YARC) battery: Standardized Rate score in wave (year) 3.  Pupils that were unable to complete both YARC passages were given a standardized score lower than the lowest observed score in the sample (censoring from below). | 69-130 | Interval |
| YARC\_compreh\_cens | YARC comprehension W3 - censored score for those unable to complete | Censored York Assessment Reading Comprehension (YARC) battery: Standardized Comprehension score in wave (year) 3.  Pupils that were unable to complete both YARC passages were given a standardized score lower than the lowest observed score in the sample (censoring from below). | 73-130 | Interval |
| garf\_recw1 | Garfield test - Recreational Reading w1 | Garfield reading attitude test: Recreational reading raw score in wave (year) 1 | 10-40 | Interval |
| garf\_acaw1 | Garfield test - Academic Reading w1 | Garfield reading attitude test: Academic reading raw score in wave (year) 1 | 10-40 | Interval |
| garf\_totw1 | Garfield test - Total w1 | Garfield reading attitude test: Total raw score in wave (year) 1 | 20-80 | Interval |
| garf\_agew1 | Age at completion Garfield Test w1 | Age of pupil (in years, and decimals of year) at time the Garfield attitude test was completed in wave (year) 1 | 4.769336-6.286106 | Interval |
| garf\_recw2 | Garfield test - Recreational Reading w2 | Garfield reading attitude test: Recreational reading raw score in wave (year) 2 | 10-40 | Interval |
| garf\_acaw2 | Garfield test - Academic Reading w2 | Garfield reading attitude test: Academic reading raw score in wave (year) 2 | 10-40 | Interval |
| garf\_totw2 | Garfield test - Total w2 | Garfield reading attitude test: Total raw score in wave (year) 2 | 23-80 | Interval |
| garf\_agew2 | Age at completion Garfield Test w2 | Age of pupil (in years, and decimals of year) at time the Garfield attitude test was completed in wave (year) 2 | 5.765914-7.263518 | Interval |
| garf\_recw3 | Garfield test - Recreational Reading w3 | Garfield reading attitude test: Recreational reading raw score in wave (year) 3 | 13-40 | Interval |
| garf\_acaw3 | Garfield test - Academic Reading w3 | Garfield reading attitude test: Academic reading raw score in wave (year) 3 | 10-40 | Interval |
| garf\_totw3 | Garfield test - Total w3 | Garfield reading attitude test: Total raw score in wave (year) 3 | 30-80 | Interval |
| garf\_agew3 | Age at completion Garfield Test w3 | Age of pupil (in years, and decimals of year) at time the Garfield attitude test was completed in wave (year) 3 | 6.743327-8.290213 | Interval |
| sdq\_temotion\_w1 | SDQ w1 Emotion | Strengths and Difficulties Questionnaire (SDQ): Emotion subscale raw total in wave (year) 1 | 0-9 | Interval |
| sdq\_tconduct\_w1 | SDQ w1 Conduct | Strengths and Difficulties Questionnaire (SDQ): Conduct subscale raw total in wave (year) 1 | 0-9 | Interval |
| sdq\_thyper\_w1 | SDQ w1 Hyper | Strengths and Difficulties Questionnaire (SDQ): Hyperactivity subscale raw total in wave (year) 1 | 0-10 | Interval |
| sdq\_tpeer\_w1 | SDQ w1 Peer Probs | Strengths and Difficulties Questionnaire (SDQ): Peer Problems subscale raw total in wave (year) 1 | 0-8 | Interval |
| sdq\_tprosoc\_w1 | SDQ w1 Prosoc | Strengths and Difficulties Questionnaire (SDQ): Pro-social subscale raw total in wave (year) 1 | 0-10 | Interval |
| sdq\_tebdtot\_w1 | SDQ w1 Tot Problem | Strengths and Difficulties Questionnaire (SDQ): total problem score in wave (year) 1 | 0-32 | Interval |
| sdq\_agew1 | Age SDQ w1 | Age of pupil (in years, and decimals of year) at time the SDQ was completed in wave (year) 1 | 4.616016-6.067077 | Interval |
| sdq\_temotion\_w2 | SDQ w2 Emotion | Strengths and Difficulties Questionnaire (SDQ): Emotion subscale raw total in wave (year) 2 | 0-10 | Interval |
| sdq\_tconduct\_w2 | SDQ w2 Conduct | Strengths and Difficulties Questionnaire (SDQ): Conduct subscale raw total in wave (year) 2 | 0-8 | Interval |
| sdq\_thyper\_w2 | SDQ w2 Hyper | Strengths and Difficulties Questionnaire (SDQ): Hyperactivity subscale raw total in wave (year) 2 | 0-10 | Interval |
| sdq\_tpeer\_w2 | SDQ w2 Peer Probs | Strengths and Difficulties Questionnaire (SDQ): Peer Problems subscale raw total in wave (year) 2 | 0-8 | Interval |
| sdq\_tprosoc\_w2 | SDQ w2 Prosoc | Strengths and Difficulties Questionnaire (SDQ): Pro-social subscale raw total in wave (year) 2 | 0-10 | Interval |
| sdq\_tebdtot\_w2 | SDQ w2 Tot Problem | Strengths and Difficulties Questionnaire (SDQ): total problem score in wave (year) 2 | 0-31 | Interval |
| sdq\_agew2 | Age SDQ w2 | Age of pupil (in years, and decimals of year) at time the SDQ was completed in wave (year) 2 | 5.538672-7.274469 | Interval |
| sdq\_temotion\_w3 | SDQ w3 Emotion | Strengths and Difficulties Questionnaire (SDQ): Emotion subscale raw total in wave (year) 3 | 0-10 | Interval |
| sdq\_tconduct\_w3 | SDQ w3 Conduct | Strengths and Difficulties Questionnaire (SDQ): Conduct subscale raw total in wave (year) 3 | 0-8 | Interval |
| sdq\_thyper\_w3 | SDQ w3 Hyper | Strengths and Difficulties Questionnaire (SDQ): Hyperactivity subscale raw total in wave (year) 3 | 0-10 | Interval |
| sdq\_tpeer\_w3 | SDQ w3 Peer Probs | Strengths and Difficulties Questionnaire (SDQ): Peer Problems subscale raw total in wave (year) 3 | 0-9 | Interval |
| sdq\_tprosoc\_w3 | SDQ w3 Prosoc | Strengths and Difficulties Questionnaire (SDQ): Pro-social subscale raw total in wave (year) 3 | 0-10 | Interval |
| sdq\_tebdtot\_w3 | SDQ w3 Tot Problem | Strengths and Difficulties Questionnaire (SDQ): total problem score in wave (year) 3 | 0-30 | Interval |
| sdq\_agew3 | Age SDQ w3 | Age of pupil (in years, and decimals of year) at time the SDQ was completed in wave (year) 3 | 6.839151-8.180698 | Interval |
| PKBS\_soccop\_w1 | PKBS raw Social Cooperation w1 | Preschool and Kindergarten Behavior Scales (PKBS): raw Social Cooperation score in wave 1 | 6-36 | Interval |
| PKBS\_inter\_w1 | PKBS raw Interaction w1 | Preschool and Kindergarten Behavior Scales (PKBS): raw Interaction score in wave 1 | 2-33 | Interval |
| PKBS\_indep\_w1 | PKBS raw Independence w1 | Preschool and Kindergarten Behavior Scales (PKBS): raw Independence score in wave 1 | 6-33 | Interval |
| PKBS\_compos\_w1 | PKBS raw Composite w1 | Preschool and Kindergarten Behavior Scales (PKBS): Total score in wave 1 | 136-358 | Interval |
| pkbs\_agew1 | Age PKBS w1 | Age of pupil (in years, and decimals of year) at time the PKBS was completed in wave (year) 1 | 4.616016-6.067077 | Interval |
| stdzPKBS\_Indep\_w1 | STD Indep PKBS w1 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Independence score in wave 1 | 36-118 | Interval |
| stdzPKBS\_Coop\_w1 | STD cooperat PKBS w1 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Social Cooperation score in wave 1 | 41-120 | Interval |
| stdzPKBS\_Inter\_w1 | STD interact PKBS w1 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Interaction score in wave 1 | 46-120 | Interval |
| stdzPKBS\_Comp\_w1 | STD PKBS composite w1 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Composite score in wave 1 | 42-122 | Interval |
| PKBS\_soccop\_w2 | PKBS raw Social Cooperation w2 | Preschool and Kindergarten Behavior Scales (PKBS): raw Social Cooperation score in wave 2 | 10-36 | Interval |
| PKBS\_inter\_w2 | PKBS raw Interaction w2 | Preschool and Kindergarten Behavior Scales (PKBS): raw Interaction score in wave 2 | 3-33 | Interval |
| PKBS\_indep\_w2 | PKBS raw Independence w2 | Preschool and Kindergarten Behavior Scales (PKBS): raw Independence score in wave 2 | 12-33 | Interval |
| PKBS\_compos\_w2 | PKBS raw Composite w2 | Preschool and Kindergarten Behavior Scales (PKBS): Total score in wave 2 | 175-358 | Interval |
| pkbs\_agew2 | Age PKBS w2 | Age of pupil (in years, and decimals of year) at time the PKBS was completed in wave (year) 2 | 5.538672-7.274469 | Interval |
| stdzPKBS\_Indep\_w2 | STD Indep PKBS w2 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Independence score in wave 2 | 54-118 | Interval |
| stdzPKBS\_Coop\_w2 | STD cooperat PKBS w2 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Social Cooperation score in wave 2 | 52-120 | Interval |
| stdzPKBS\_Inter\_w2 | STD interact PKBS w2 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Interaction score in wave 2 | 48-120 | Interval |
| stdzPKBS\_Comp\_w2 | STD PKBS composite w2 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Composite score in wave 2 | 52-122 | Interval |
| PKBS\_soccop\_w3 | PKBS raw Social Cooperation w3 | Preschool and Kindergarten Behavior Scales (PKBS): raw Social Cooperation score in wave 3 | 6-36 | Interval |
| PKBS\_inter\_w3 | PKBS raw Interaction w3 | Preschool and Kindergarten Behavior Scales (PKBS): raw Interaction score in wave 3 | 8-33 | Interval |
| PKBS\_indep\_w3 | PKBS raw Independence w3 | Preschool and Kindergarten Behavior Scales (PKBS): raw Independence score in wave 3 | 12-33 | Interval |
| PKBS\_compos\_w3 | PKBS raw Composite w3 | Preschool and Kindergarten Behavior Scales (PKBS): Total score in wave 3 | 182-358 | Interval |
| pkbs\_agew3 | Age PKBS w3 | Age of pupil (in years, and decimals of year) at time the PKBS was completed in wave (year) 3 | 6.839151-8.180698 | Interval |
| stdzPKBS\_Indep\_w3 | STD Indep PKBS w3 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Independence score in wave 3 | 54-118 | Interval |
| stdzPKBS\_Coop\_w3 | STD cooperat PKBS w3 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Social Cooperation score in wave 3 | 41-120 | Interval |
| stdzPKBS\_Inter\_w3 | STD interact PKBS w3 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Interaction score in wave 3 | 60-120 | Interval |
| stdzPKBS\_Comp\_w3 | STD PKBS composite w3 | Preschool and Kindergarten Behavior Scales (PKBS): Standardised Composite score in wave 3 | 55-122 | Interval |
| aces\_fw1 | ACES face tot w1 | Assessment of Children’s Emotional Skills (ACES): face scale raw score in wave (year) 1 | 1-16 | Interval |
| aces\_sw1 | ACES sit tot w1 | Assessment of Children’s Emotional Skills (ACES): Situations scale raw score in wave (year) 1 | 1-11 | Interval |
| aces\_bw1 | ACES beh tot w1 | Assessment of Children’s Emotional Skills (ACES): Behaviour scale raw score in wave (year) 1 | 1-11 | Interval |
| aces\_totw1 | ACES tot w1 | Assessment of Children’s Emotional Skills (ACES): Total raw score in wave (year) 1 | 8-33 | Interval |
| aces\_agew1 | age ACES w1 \_d | Age of pupil (in years, and decimals of year) at time the ACES was completed in wave (year) 1 | 4.495551-6.017796 | Interval |
| aces\_fw2 | ACES face tot w2 | Assessment of Children’s Emotional Skills (ACES): face scale raw score in wave (year) 2 | 5-16 | Interval |
| aces\_sw2 | ACES sit tot w2 | Assessment of Children’s Emotional Skills (ACES): Situations scale raw score in wave (year) 2 | 1-12 | Interval |
| aces\_bw2 | ACES beh tot w2 | Assessment of Children’s Emotional Skills (ACES): Behaviour scale raw score in wave (year) 2 | 0-10 | Interval |
| aces\_totw2 | ACES tot w2 | Assessment of Children’s Emotional Skills (ACES): Total raw score in wave (year) 2 | 11-33 | Interval |
| aces\_agew2 | age ACES w2 \_d | Age of pupil (in years, and decimals of year) at time the ACES was completed in wave (year) 2 | 5.535934-6.926763 | Interval |
| aces\_fw3 | ACES face tot w3 | Assessment of Children’s Emotional Skills (ACES): face scale raw score in wave (year) 3 | 6-16 | Interval |
| aces\_sw3 | ACES sit tot w3 | Assessment of Children’s Emotional Skills (ACES): Situations scale raw score in wave (year) 3 | 1-12 | Interval |
| aces\_bw3 | ACES beh tot w3 | Assessment of Children’s Emotional Skills (ACES): Behaviour scale raw score in wave (year) 3 | 2-11 | Interval |
| aces\_totw3 | ACES tot w3 | Assessment of Children’s Emotional Skills (ACES): Total raw score in wave (year) 3 | 15-38 | Interval |
| aces\_agew3 | age ACES w3 \_d | Age of pupil (in years, and decimals of year) at time the ACES was completed in wave (year) 3 | 6.743327-8.290213 | Interval |