



## Bijlage: Informatie over aanpak meta-analyses

EEF

## **Main steps for creating a new Toolkit strand according to the EEF**

### Identify theme or topic

- Scope existing evidence (e.g. meta-analyses and systematic reviews)
- Define theme or topic (for search terms)
- Draft protocol for the review

### Searching

- Pilot and refine search strings (check against meta-analyses/ existing reviews)
- Identify search gateways/ devise search strategy
- Apply and record searches

### Screening for inclusion

- Create reference lists for each search in reference manager (e.g. Endnote)
- Import references into EPPI-Reviewer
- Check for duplicates
- Screen on Title and Abstract
- Retrieve full text of included studies
- Screen on Full Text

### Data extraction

- Create strand specific coding tool (from existing reviews and expert informants)
- Main data extraction
- Effect size data extraction
- Strand specific data extraction

### Analysis

- Data checking and cleaning
- Meta-analysis
  - Impact analysis
  - Moderator variables
  - Padlocks

### Strand write up

- Main text template
- Costings (from included studies)
- Padlocks

De volgende “Protocol and Analysis Plan” en de “Appendices zijn gemaakt naar aanleiding van de volgende meta-analyse in de Toolkit:

<https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/behaviour-interventions/technical-appendix>



# **EEF Evidence Database Phase 2: Protocol and Analysis Plan**

## **Appendices**

January 2024



## Table of contents

|                                                                              |   |
|------------------------------------------------------------------------------|---|
| Table of contents .....                                                      | 2 |
| Appendix 1: EEF main data extraction (v 2.0 March 2022) .....                | 3 |
| Appendix 2: EEF Toolkit effect size data extraction (v 2.0 March 2022) ..... | 4 |
| Appendix 3: EEF Toolkit strand specific data extraction .....                | 5 |
| Appendix 4: Main Coding Guide.....                                           | 6 |
| Appendix 5: Effect Size Coding Guide .....                                   | 7 |
| Appendix 6: Sample meta-analysis R code.....                                 | 8 |

## **Appendix 1: EEF main data extraction (v 2.0 March 2022)**

## EEF main data extraction v 2.0 March 2022 (Shared)

- Section 1 What is the publication type?
  - Journal article  
*A report published in a peer-reviewed journal with an ISSN.*
  - Dissertation or thesis  
*A report of a study in a dissertation or thesis submitted as all or part of the assessment for a higher degree.*
  - Technical report  
*An unpublished report, technical report or document providing details of a research study or studies without an ISSN or ISBN. (EEF evaluation reports are classified as technical reports.)*
  - Book or book chapter  
*A report of a research study published in a book or book chapter with an ISBN*
  - Conference paper  
*A report of a study presented at a research conference and subsequently made more widely available.  
NB Peer-reviewed conference proceedings with an ISBN should still be classified as a conference paper.*
  - Other (Please specify)  
*A report not classifiable according to the categories above (e.g. a website). Please add further details in the notes field.*
- Section 2 What is the research design and which methods were used?
  - What is the intervention name?  
*Provide the name of the intervention, programme or approach as given in the report.*
  - How is the intervention described?  
*Brief summary of the intervention as provided in the report(s). Please include the rationale for impact on learning if given.*
  - What are the intervention objectives?  
*Please provide the specific objectives or aims of the intervention, programme or approach as provided in the report*
  - Is there more than one treatment group?  
*Does the research design include more than one arm or contrast so that more than one estimate of the impact of the intervention or approach can be made from a different comparison group or version of the intervention?*
    - Yes (Please specify)  
*Highlight in the text (or use the info box) to describe the design and specify the other interventions or comparisons relative to the main intervention group.*
    - No
    - Not specified or N/A
  - How were participants allocated?  
*How were the participants assigned or allocated to their group (i.e. treatment and control)?*
    - Random allocation (please specify)  
*Select this code where the report describes the participants' allocation to their group as random or pseudo-random (computer generated). Please highlight in the text or add information to the info box about the randomisation details.*
    - Non-random, but matched  
*No randomisation, but matched at allocation prospectively to balance on attainment (or on attainment and other variables).*
    - Non-random, not matched prior to treatment  
*No random allocation and not matched prior to treatment. The nature and extent of any group differences in attainment at baseline is described and then accounted for in the analysis of impact (retrospective matching).*
    - Unclear  
*Please only select this code if there are no details about control and intervention allocation or if the information is so unclear as to prevent a reasonable inference.*
    - Not assigned - naturally occurring sample (Prospective QED)  
*This is where researchers take advantage of a situation where a comparison can be made between groups from changes that either are planned but have not yet happened (prospective) which will give an estimate of the impact of the intervention or approach of interest.*
      - Retrospective Quasi Experimental Design (QED)  
*Where an experiment is created from a naturally occurring situation which has already*

*occurred (retrospective) and two groups (or more) are compared to give an estimate of impact.*

- Regression discontinuity

*This is a type of design that identifies the causal effects of an intervention or approach by using or assigning a cutoff or threshold above or below which an intervention is evaluated (e.g. policy change where smaller classes are introduced in a district or a test is used to allocate students to additional support). By comparing results close to, but either side of the threshold, it is possible to estimate the effect of the intervention.*

- What was the level of allocation?

*At which level was the assignment to intervention and control group conducted?*

- Individual

*The assignment was at the level of the individual student or pupil. No account was taken of class or school. All of the individual participants were included as a single group for allocation or randomisation.*

- Class

*The class or usual teaching group of the students was the level at which the intervention or approach was allocated. Intact classes were allocated or assigned to the intervention or approach (taking no account of school).*

- School - cluster

*The school was the level of assignment and all pupils in a single school are allocated to the same grouping (i.e. a single school would not include both intervention and control).*

- School - multi-site

*The school is the level of assignment, but each school contains both intervention and control groups. The design allows a within school comparison to be made.*

- Region or district

*The region or district is the level at which the assignment is made.*

- Not provided/ not available

*A description of the level of allocation is not provided or available in the report.*

- Not applicable

- How realistic was the study?

*Was the intervention implemented under "real world" conditions? Factors to consider in assessing the 'ecological validity' include where the intervention took place (usual educational setting for educational approaches of this kind) and who taught or led the intervention with the pupils (e.g. did it involve usual teachers or other education professionals).*

- High ecological validity

*Select this code where the intervention or approach seems realistic for schools or teachers to adopt.*

*Any adaptations to enable the research to be conducted do not appear to affect the validity of the findings and implications for schools. Studies which take place in schools and are taught by the usual teachers or staff have high ecological validity.*

- Low ecological validity

*Select this code where the intervention or approach does not seem realistic or practical for schools or teachers to adopt. Studies which take place in laboratory settings and are only taught by researchers have low ecological validity.*

- Unclear

*Select this code where there are no details about where the intervention took place or who was responsible for its delivery and it is not possible to infer sufficient details to make a judgement about the ecological validity of the study.*

- Section 3 Where did the study take place?

- Please add specific information about the location.

*Further information on where the study took part (e.g. city, district, urban, suburban, rural etc.) as provided by the study.*

- Specific to the location or place

*Information about the specific place where the research was undertaken (e.g. name of the city, state, city or region)*

- Information about the type of location

*Information about what kind of location (e.g. urban, rural, suburban).*

- No information provided

*Please use this code if there is no further information about the specific location (place name) or the type of location (e.g. urban/ rural).*

- In which country/countries was the study carried out? (Select ALL that apply)

*Countries which are recognised as sovereign states by the United Nations. If you think there is a country missing, please ask!*

- UK (Select all that apply)

- England

- Northern Ireland
- Scotland
- Wales
- USA
- Afghanistan
- Albania
- Argentina
- Angola
- Armenia
- Austria
- Australia
- Azerbaijan
- Bahamas, The
- Bahrain
- Bangladesh
- Belarus
- Barbados
- Belize
- Belgium
- Benin
- Bhutan
- Bosnia and Herzegovina
- Botswana
- Brazil
- Bolivia
- Brunei Darussalam
- Burkina Faso
- Bulgaria
- Cabo Verde
- Cambodia
- Canada
- Cameroon
- Central African Republic
- Chad
- Chile
- Colombia
- Congo
- Costa Rica
- Côte d'Ivoire / Ivory Coast
- Croatia
- China
- *If just Hong Kong, use Hong King code only, NOT China*
- Cuba
- Cyprus
- Denmark
- Czech Republic
- Dominican Republic
- Egypt
- Ecuador
- El Salvador
- Equatorial Guinea
- Estonia
- Eritrea
- Ethiopia
- Finland
- Fiji
- France
- Gabon
- Georgia
- Gambia, The
- Germany
- Greece
- Ghana
- Guatemala
- Grenada

- Guinea-Bissau
- Guinea
- Guyana
- Haiti
- Honduras
- Hong Kong (see China)
- Hungary
- Iceland
- Indonesia
- India
- Iran
- Iraq
- Ireland
- Italy
- Israel
- Jamaica
- Japan
- Jordan
- Kenya
- Kazakhstan
- Kuwait
- Kiribati
- Lao (or Laos)  
*Lao People's Democratic Republic*
- Kyrgyzstan
- Latvia
- Lebanon
- Liberia
- Lesotho
- Libya
- Liechtenstein
- Luxembourg
- Lithuania
- Madagascar
- Macedonia
- Malaysia
- Malawi
- Mali
- Maldives
- Malta
- Marshall Islands
- Mauritania
- Mauritius
- Micronesia
- Mexico
- Moldova
- Mongolia
- Morocco
- Mozambique
- Namibia
- Myanmar (Burma)
- Nepal
- Nauru
- The Netherlands
- New Zealand
- Nicaragua
- Nigeria
- Niger
- Norway
- Pakistan
- Palau
- Panama
- Papua New Guinea
- Paraguay
- Peru

- Philippines
- Poland
- Puerto Rico (US dependency)
- Portugal
- Qatar
- Romania
- Rwanda
- Russia
- Saint Kitts and Nevis
- Saint Lucia
- Saint Vincent and the Grenadines
- San Marino
- Samoa
- Saudi Arabia
- São Tomé and Príncipe
- Serbia
- Senegal
- Seychelles
- Sierra Leone
- Slovakia
- Singapore
- Slovenia
- Solomon Islands
- South Africa
- Somalia
- South Korea / Republic of Korea
- South Sudan
- Sri Lanka
- Spain
- Sudan
- Suriname
- Swaziland / Eswatini
- Sweden
- Switzerland
- Taiwan
- Syria
- Tanzania
- Tajikistan
- Thailand
- Timor-Leste
- Togo
- Tonga
- Tunisia
- Trinidad and Tobago
- Turkey
- Turkmenistan
- Tuvalu
- Ukraine
- Uganda
- United Arab Emirates
- Uruguay
- Uzbekistan
- Vanuatu
- Venezuela
- Vietnam
- West Indies (Use for Caribbean colonial dependencies)
  - Cayman Islands (United Kingdom)*
  - Anguilla (United Kingdom) Antigua and Barbuda Aruba (Netherlands) Bonaire (Netherlands)*
  - British Virgin Islands (United Kingdom) Curaçao (Netherlands) Guadeloupe (France)*
  - Martinique (France) Montserrat (United Kingdom) Nueva Esparta (Venezuela) Saba*
  - (Netherlands) Saint Barthélemy (France) Saint-Martin (France) Sint Eustatius (Netherlands)*
  - Sint Maarten (Netherlands) United States Virgin Islands (United States) Federal*
  - Dependencies of Venezuela (Venezuela) Turks and Caicos Islands (United Kingdom)*
- Yemen
- Zambia

- Zimbabwe
- What is the educational setting (Select ALL that apply)  
*What is the type of educational setting that the students attend which is the focus of the intervention or approach?*
  - Nursery school/pre-school  
*A separate nursery school or pre-school setting or a nursery or early years class in a primary school.  
The focus is on the type of setting or educational provision.*
  - Primary/elementary school  
*A school for children of normal school age (depending on the jurisdiction).  
The focus is on the type of school or setting. Pupils will typically be between the ages of 5 and 11.*
  - Middle school  
*An intermediate school provided in some jurisdictions for pupils between their primary (or elementary) and secondary educational stages.*
  - Secondary/High school  
*A school for older pupils, after primary or elementary education (and after middle school where provided). Pupils will usually be between the ages of 11 and 18.*
  - Residential/boarding school  
*A school where pupils reside as well as study; boarding either by week or over a term.*
  - Independent/private school
  - Home
  - Further education/junior or community college  
*A formal educational setting for older secondary pupils. Students will usually be 16 or older, but still studying for school-level, vocational or professional qualifications (i.e. not higher education or leading to a Bachelor's degree)*
  - Other educational setting (please specify)  
*An educational setting which cannot be classified under one of the other definitions. Please provide details of the educational setting as given in the study (e.g. field centre, museum classroom, concert or rehearsal hall, public theatre, workplace training, etc.)*
  - Outdoor adventure setting  
*Educational activities taking place outdoors such as Outward Bound courses, sailing and kayaking or canoeing, camping, climbing or courses based at an outdoor education centre. All studies classified under the Toolkit strand 'Outdoor adventure learning' should be included. Field studies centres where the activities focus solely on school subjects like Geography or Biology should not be included (please use 'Other' for these and specify the type of setting).*
  - No information provided
- Section 4 What is the sample of the study?
  - What is the overall sample analysed?  
*What is the total number of participants in the data analysed (both intervention and control/comparison)? Please only write a numeric value and highlight additional details on the study PDF.*
    - Other information about the overall sample  
*If needed (such as where information can't be highlighted), please add notes regarding overall sample size.*
  - What is the gender of the students?  
*Please indicate the gender of the total sample.*
    - Female only
    - Male only
    - Mixed gender  
*Provide the percentage of female pupils in the study (T & C). Please highlight the section or add details of where this can be found in the report.*
    - No information provided
  - What is the age of the students? (Select ALL that apply)  
*Please provide additional information if available (e.g. grade level(s), mean age, or mean and standard deviation).*
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - 9
    - 10
    - 11

- 12
- 13
- 14
- 15
- 16
- 17
- 18
- No information provided
- What is the proportion of low SES/FSM students in the sample?  
*What proportion of the students in the study are receiving free school meals (FSM) or reduced price lunches or are identified as being from a low socio-economic status? If possible, record this as a percentage. Please highlight or add further details as reported in the study.*
  - FSM or low SES student percentage  
*Please add the percentage of pupils in the sample who are receiving free school meals (FSM) or reduced price lunches or are identified as being from a low socio-economic status background.*
  - Further information about FSM or SES in the study sample.  
*Please highlight any details provided in the study about the socio-economic status of the students involved in the research (such as eligibility for free or reduced price school meals or lunches).*
  - No SES/FSM information provided  
*Select this option if there is no information about the socio-economic status of the students involved in the research (such as eligibility for free or reduced price school meals or lunches).*
- Section 5 What was involved in the intervention?  
*Details about the intervention, approach or policy being evaluated.*
  - What type of organisation was responsible for providing the intervention?  
*Please indicate what kind of organisation was responsible for the provision or management and organisation of the intervention?*
    - School or group of schools
    - Charity or voluntary organisation
    - University/ researcher
    - Local education authority or district  
*Local education authority or district (government or public funding)*
    - Private or commercial company
    - Other (please provide details)
  - Was training for the intervention provided?  
*Was training provided to the delivery team as part of the preparation and support for the intervention? If so, who provided it?*
    - Yes (Please specify)  
*Please highlight the text or add details to the info box as provided in the report.*
    - No
    - Unclear/ Not specified
  - Who is the focus of the intervention? (Select ALL that apply)  
*Who is the main focus of the intervention study? Although the interest of the Toolkit is on student outcomes, the focus of behavioural change may be on others in educational settings, such as teachers or parents. NB All interventions must report outcomes on student's attainment.*
    - Students  
*The main focus of the intervention is on the behaviours, interactions or activities of the students or pupils. Others may be involved (such as in training to deliver or implement a new approach), but the main aim is to change students' activities, behaviours and interactions to improve educational outcomes.*
    - Teachers  
*The main focus of the intervention is on the teachers and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims focus on the teachers as a clear or explicit part of the rationale.*
    - Teaching assistants  
*The focus of the intervention includes teaching assistants or teacher's aides (and/or other para-professionals) and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims involve teaching assistants as part of the process.*
    - Other education practitioners
    - Non-teaching staff  
*The main focus of the intervention is on the non-teaching staff in schools and their behaviours, interactions and activities. This includes all staff who would not normally have a teaching role (e.g. administrative staff, lunchtime supervisors, facilities management etc.). Although the final*

- outcome may be to improve students' attainment, the focus and study aims include the non-teaching staff as part of the rationale.*
- Senior management  
*The main focus of the intervention is on the senior management in schools (e.g. headteachers, deputy head teachers, heads of department) and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims include the senior management as part of the rationale.*
  - Parents  
*Parents or carers of students in the educational settings involved are involved because of their parental or caring responsibilities.*
  - Other (Please specify)
- What is the intervention teaching approach? (Select ALL that apply)  
*What was the main teaching or learning approach used for an intervention session?*
- Large group/class teaching (+6)  
*A large group (more than 6 students) with a teacher or supporter of the intervention, typically in a classroom setting.*
  - Small group/intensive support (3-5)  
*Intensive small group provision by a teacher, teaching assistant or other supporter of the intervention in small group setting (3 - 5 participants in a group), sometimes in a separate teaching space or classroom.*
  - Paired learning  
*Two pupils either working together, or peer teaching each other*
  - One to one  
*One to one instruction where the teacher is not a peer, but a teacher, teaching assistant, volunteer or other education professional.*
  - Student alone (self-administered)  
*Pupils or students working through study materials independently and/or unsupervised.*
  - Other (Explain in notes)
- Were any of the following involved in the intervention or approach?
- Digital technology  
*The main approach depends on the use of digital technology (e.g. tablets, laptops, software, internet) by pupils or teachers (e.g. interactive whiteboards).*
    - Yes
    - No
  - Parents or community volunteers  
*Parents or community volunteers working with their children (or other pupils).*
    - Yes
    - No
- When did the intervention take place? (Select ALL that apply)  
*When was the intervention delivered?*
- During regular school hours  
*The intervention or approach takes place completely or mainly during regular school hours.*
  - Before/after school  
*The intervention or approach takes place completely or mainly before or immediately after normal school hours. This should mainly apply to activities taking place on school or normal educational settings.*
  - Evenings and/or weekends  
*Where the intervention or approach takes place during evenings or weekends. Activities which take place immediately after school and at school (or in the same educational setting) should not be included.*
  - Summer/ holiday period  
*Where the educational activity takes place as additional time in what would normally be a holiday period (e.g. summer holidays or other vacation times).*
  - Other (please specify)
  - Unclear/ not specified  
*Use this code where there are no details provided of when the intervention was delivered and where the information provided does not allow a reasonable inference to be made about timing.*  
*The usual inference for most interventions where the timing is not specified will be 'During regular school hours'. If this inference cannot reasonably be made please indicate in the notes the details in the report which produce the ambiguity or lack of clarity.*
- Who was responsible for the teaching at the point of delivery? (Select ALL that apply)  
*Please provide details (e.g. staff involved, training level provided, number/ proportions of staff). This should focus on the experience of pupils, rather than any initial training and support.*

- Research staff  
*Select this code where the intervention or approach was delivered largely or exclusively by researchers or the research team.*
- Class teachers  
*Select this code when the intervention or approach was taught or delivered by professional teachers as part of their usual teaching or wider professional activity.*
- Teaching assistants  
*Select this code where the majority of the teaching or delivery of the intervention is undertaken by teaching assistants (or teacher's aides, para-professionals, auxiliary teachers, nursery nurses in early years settings and other cognate terms). These will be staff usually employed by a school, but without a full teaching qualification.*
- Other school staff  
*Staff employed by the school, but neither teachers nor teaching assistants (or those in similar paid roles). It includes administrative staff, lunch-time supervisors, facilities staff.*
- External teachers  
*Teachers or other professional educational staff hired or employed by the research team or the delivery organisation.*
- Parents/carers  
*Parents or carers whose main relationship with the intervention is through their parental or caring responsibilities. This includes where parents working with their own children, or working with other children in the school or educational setting that their own children attend.*
- Lay persons/volunteers  
*Adults (over 18 years) involved as volunteers or undertaking unpaid work who provide the majority of the support to pupils or lead in the delivery of the intervention to students.*
- Peers  
*Other students or pupils at the same school or educational setting as the intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socio-economic or cultural background.  
University students tutoring primary school pupils would not be classified as 'peers'.*
- Digital technology  
*Include digital technology where the technology has a role in the educational activity, such as where automated feedback or marking is provided, or where it provides an explicit teaching role (intelligent tutoring or the use of explanatory videos) or where differentiated activities are offered or allocated automatically to learners. Incidental use of technology which is usually involved in the normal teaching and learning activities of the intervention group should not be included as this has already been recorded.*
- Unclear/not specified  
*Use this code where there are no details provided of who or how the intervention was delivered or where the information provided does not allow a reasonable inference to be made.*
- What was the duration of the intervention?  
*Duration of the intervention or approach (from beginning to end). This may differ from the duration of the research project or evaluation which could involve pre- and post-testing periods. Please standardise to weeks and fractional part of weeks (e.g. 2 weeks, 0.5 week). Academic year=38 weeks. Highlight and add only numeric data in the info box. If there is no information provided, please write "Not specified" in the 'Info' box.*
- What was the frequency of the intervention?  
*What is the frequency of the intervention (as delivered)? E.g. daily, twice weekly, weekly monthly. Please use the week as the standard unit (e.g. once a week =1, twice a week = 2, every fortnight = 0.5) Highlight additional information and add only numeric data in the info box.*
- What is the length of intervention sessions?  
*What is the length in minutes of a typical session? Add only numeric data in the info box.*
- Are implementation details and/or fidelity details provided?  
*Are details provided about how successfully the intervention was implemented or taken up? Please indicate what type of information by selecting the appropriate checkbox and highlighting relevant text in the report.*
  - Qualitative  
*Please select if qualitative details about the intervention or approach are provided, such as describing and issues or challenges about implementation, or comments on the training and/or implementation process.*
  - Quantitative  
*Please select if quantitative details about implementation are provided, such as number of schools or teachers trained, or number of sessions attended.*

- No implementation details provided.  
*No details about the implementation process are provided.*
  - Are any costs for the intervention reported?  
*Are there any financial costs or details reported?*
    - Yes (Please add details)  
*If this option is selected, please add details as provide in the report(s).*
    - No
  - Who undertook the outcome evaluation?  
*Here we are interested in how independent the evaluation was.*
    - The developer  
*This is the usual option and should be selected unless the information is unclear or confusing. This is where the researcher or developer evaluated their own programme or approach.*
    - A different organization paid by developer  
*The development team is different from the evaluation team but it is commissioned directly by the developer or researcher who developed the intervention approaches.*
    - An organization commissioned independently to evaluate  
*The research team is different from the evaluation team and commissioned independently (e.g. EEF reports).*
    - Unclear/not stated  
*There is insufficient information about the status of the evaluation research to indicate or infer how independent the evaluation is.*
    - Is this an EEF evaluation?  
*If the evaluation was funded by the Education Endowment Foundation please select.*
      - Yes
      - No
- Section 6 What kind of primary outcomes are reported?
  - What kind of tests were used? (Select ALL that apply)  
*What type(s) of test(s) were used to measure the intervention outcomes on learning at pupil/student level?*
    - Standardised test (Please specify)  
*A standardised test is administered and scored in a consistent way. The properties of the test are established through piloting on a group to determine the mean and spread of the scores for a particular target group. Standardised tests are usually named and the properties published.*  
*Please add the name of the test(s) used, a brief description and any details reported.*
    - Researcher developed test (Please add details)  
*A test developed or designed for a specific research project. Please add any details as provided in the report(s).*
    - School-developed test (Please add details)  
*A test or examination developed and used by a school or schools involved in the research as part of their usual assessment approach. Please add any details as provided in the report(s).*
    - National test or examination (Please specify)  
*A test or examination used in regional or national evaluations of student and school performance. These may be optional or compulsory, but are organised and/ or administered by the regional or national education administration in a particular jurisdiction.*
    - International tests (Please specify)  
*Tests used for international comparisons of student performance (e.g. PISA, TIMMS, PIRLS etc.). Please specify the name of the test.*
  - Curriculum subjects tested (Select ALL that apply)  
*If the outcomes relate to the subjects of the school curriculum outcomes, record which subjects are included.*
    - Literacy (first language)  
*Aspects of literacy including speaking and listening, reading and writing. Include study of literature when this is first language study.*
      - Reading comprehension  
*This may include aspects such as main idea identification and passage comprehension. When a test provides different outcomes, e.g. TOWRE (Test of Word Reading Efficacy) provides word attack, word identification, & passage comprehension, choose passage comprehension as main outcome.*
      - Decoding/phonics  
*These measures gave a focus on recognizing letters and making the correct sounds associated with the letters or letter combinations. They made be referred to as phonological or phonemic awareness.*
      - Spelling  
*Where the focus is on the correct spelling of words.*

- Reading other  
*e.g. phonics, reading fluency, vocabulary comprehension (receptive vocabulary)*  
*When a test provides different outcomes, e.g. TOWRE (Test of Word Reading Efficacy) provides word attack, word identification, & passage comprehension, choose passage comprehension as main outcome*
  - Speaking and listening/Oral language  
*Speaking and listening or oral language and communication outcomes, including vocabulary use (productive spoken vocabulary).*
  - Writing  
*A test of written language including quality, quantity and written vocabulary (range).*
- Mathematics  
*All aspects of mathematics including number and numerical operations, shape and space (geometry), algebra, data-handling etc.*
- Science  
*All general science subjects including physics, chemistry, biology as well as specific subjects such as ecology or astronomy.*
- Social studies  
*Either integrated social studies courses or programmes or separate curriculum areas of social studies (e.g. history, geography, civics, sociology, economics or anthropology).*
- Arts  
*Expressive and performing arts, including music, art, drama, drawing, painting, sculpture and the decorative arts.*
- Languages  
*Where the aim is to develop communicative or literacy capability in a language other than the first language or usual language of instruction in the school.*
- Other curriculum test  
*Please provide a description of the outcome as reported where it is a test of a school curriculum subject not included in the categories above (e.g. music, art, classics).*
- In addition to the primary educational attainment outcome, are there other outcomes reported?
  - Yes
  - No
- If yes, which other outcomes are reported?
  - Cognitive outcomes measured (Please specify)  
*If non-curricular cognitive outcomes are measured, please indicate and specify the outcomes (e.g. reasoning, memory, intelligence, etc.). Include the name of the test where possible (e.g. Raven's Matrices, Stanford-Binet Intelligence Scales etc.).*
  - Other types of student outcomes (Please specify)  
*e.g. attendance, measures of behaviour, health status, non-cognitive attitudes/dispositions, etc. as assessed through a test or a survey.*
  - Other participants (i.e. not students) outcomes (Please specify)  
*If outcomes are measured and reported for other participants involved in the research (such as teachers or parents), please note which participants and which outcomes have been measured e.g. parental participation.*

## **Appendix 2: EEF Toolkit effect size data extraction (v 2.0 March 2022)**

# EEF Toolkit effect size data extraction v 2.0 March 2022 (Shared)

Data extraction tool to support meta-analysis of the impact data from included studies. Updated March 2022 to address coding data format issues.

- Section 1 What are the details of the study design?
  - What was the study design?  
*What type of study design is used for the evaluation of impact?*
    - Individual RCT  
*An experimental design where individual participants are the unit of randomisation and no provision is made for clustering in the design or analysis.*
    - Cluster RCT  
*An experimental design where school or class is the unit of randomisation (i.e. all pupils in the same school are in same group and where classes are randomised between schools. The school-level variance should be assigned to either intervention or control in the analysis.*
    - Multisite RCT  
*An experimental design where both control and intervention pupils may be in the same class or school (within school/class) so that in the analysis the school or class level variance should be shared between intervention and control groups.*
    - Prospective QED  
*A quasi-experimental design which is planned in advance. There may be a prospective allocation, but the design may also take advantage of a naturally occurring experiment. There is often some matching but no randomisation.*
    - Retrospective QED  
*A post-hoc natural experiment where matching and/ or equivalence is achieved through the design and/or analysis. There is no attempt to manage control the intervention or phenomenon under investigation.*
    - Interrupted time series QED  
*A design where the same group is treated as control and comparison e.g. ABAB and the counterfactual is created over time.*
    - Regression Discontinuity with randomisation  
*Prospective regression discontinuity design where participants around the cut off are randomised to treatment or control.*
    - Regression Discontinuity - not randomised  
*RD with non-random allocation (prospective matching to create equivalence)*
    - Regression Discontinuity - naturally occurring  
*Regression discontinuity design naturally occurring - retrospective matching. Exploits or manipulates a naturally occurring discontinuity to explore the causal effect of an educational intervention or approach. Regression discontinuity designs elicits the causal effects of interventions by assigning a cut off or threshold above or below which an intervention is assigned*
  - What is the number of schools involved in the study?
    - What is the number of schools involved in the intervention group(s)?  
*Please provide the number of schools involved in the intervention or versions of the intervention. Please only enter numeric data in the info box.*
    - What is the number of schools involved in the control or comparison group?  
*Please provide the number of schools involved in the control group. Please only enter numeric data in the info box.*
    - What is the total number of schools involved?  
*Please record the total number of schools involved in the study. This will be the sum of intervention and control schools in a cluster randomised trial, but in a multisite trial, where there are control and intervention pupils in each school, it may be the same as for intervention/ control. Please only enter numeric data in the info box.*
    - Not provided/ unclear / not applicable  
*Please indicate if the number of schools involved is not provided, is unclear, or not applicable (such as in an Outdoor Education study).*
  - What is the number of classes involved?
    - What is the total number of classes involved in the intervention group?  
*Please provide the number of classes involved in the intervention or versions of the intervention. Please only enter numeric data in the info box.*
    - What is the total number of classes involved in the control or comparison group?  
*Please provide the number of classes involved in the control group. Please only enter numeric data in the info box.*

- What is the total number of classes involved?  
*Please record the total number of classes involved in the study. Please only enter numeric data in the info box.*
    - Not provided/ unclear / not applicable  
*Please indicate if the number of classes involved is not provided, is unclear, or not applicable (such as in an Outdoor Education study).*
  - Are details of randomisation provided?
    - Yes  
*Please select if details are provided about how any randomisation was undertaken. Please highlight the relevant section of the study where possible.*
    - Not applicable  
*Please select if the study is not described as a randomised design (e.g. Quasi-experimental or naturally occurring experiment).*
    - No / Unclear  
*Please select if the study is described as randomised but no details are provided or these details are unclear. If the details are unclear, please highlight the relevant section of the report.*
- Section 2 How is the sample described?  
*Information about the sample size, groups and comparability.*
  - What is the sample size for the intervention group?  
*Record the initial or assigned sample size for the treatment group in the notes. Please enter numeric data only in the info box. This should be either the main counterfactual comparison of the intervention or approach for the Toolkit from this study, or the first reported.*
  - What is the sample size for the control group?  
*Record the initial or assigned sample size for the control group in the notes. Please enter numeric data only in the info box.*
  - \*What is the sample size for the second intervention group?  
*Record the initial or assigned sample size for a second or alternative treatment group in the notes (\*if there is one). This should be an equally valid comparison of the intervention or approach for the Toolkit as the first intervention group reported above. Please enter numeric data only in the info box.*
  - \*What is the sample size for the third intervention group?  
*Record the initial or assigned sample size for a third or different treatment group in the notes (\*if there is one). This should be an equally valid comparison of the intervention or approach for the Toolkit as the other intervention groups reported above. Please enter numeric data only in the info box.*
  - Does the study report any group differences at baseline?  
*Is there quantitative information about the similarity of treatment and control groups at the beginning of the intervention?*
    - Yes  
*Please select if there is information provided about how comparable the intervention and control groups are at the beginning of the study in terms of the analysis. Please also highlight the relevant section of the text where this is possible.*
    - No/Unclear  
*Please select this option if there is no information about the baseline comparability of the groups or if this is unclear. If there is information, but it is unclear, please highlight the relevant section of the study, where this is possible.*
  - Is comparability taken into account in the analysis?  
*Are covariates in treatment and control groups assessed, and, if unbalanced, controlled in adjusted analysis?*
    - Yes
    - No
    - Unclear or details not provided
  - Is attrition or drop out reported?  
*If the sample recruited differs from the sample analysed, are the reasons for this reported? Please include details of attrition or drop-out or any pupils excluded from the analysis.*
    - Yes
    - No
    - Unclear (please add notes)  
*Please check this option if the amount of attrition is unclear. Please also add notes about attrition if there is information about different groups or outcomes.*
  - What is the percentage attrition in the treatment group?  
*Please report the percentage of drop-outs in the intervention group. This is the number of drop-outs in the intervention group divided by the number of participants in the intervention group X 100. Please enter only numeric data in the info box*
  - Are the variables used for comparability reported?  
*Does the study state which variables are used to assess the comparability of the treatment and*

**control groups?**

- Yes
- No
- N/A
- If yes, which variables are used for comparability?  
*Select the variables considered in assessment of similarity e.g. prior attainment, age, gender, SES, special educational needs, ethnicity.*
  - Educational attainment  
*A measure of either direct (e.g. reading comprehension) or indirect (reasoning) educational performance or capability.*
  - Gender
  - Socio-economic status
  - Special educational needs
  - Other (please specify)
- What is the total or overall percentage attrition?  
*Please report the percentage of drop-outs or overall attrition in the whole sample. This is the number of drop-outs divided by the initial sample x 100. Or you can calculate as the (initial sample minus the analysed sample) divided by the initial sample X 100. ((N-n)/N) x 100. For more information see: [https://ies.ed.gov/ncee/wwc/Docs/OnlineTraining/wwc\\_training\\_m2.pdf](https://ies.ed.gov/ncee/wwc/Docs/OnlineTraining/wwc_training_m2.pdf)*
- Is clustering accounted for in the analysis?  
*Does analysis take account of clustering? e.g. regression with school or cluster or MLM (multi-level modelling) or HLM (hierarchical linear modelling)?*
  - Yes
  - No
  - Unclear

## • Section 3 Outcome details

## ○ Outcomes (CODE AT STUDY LEVEL)

*This section describes the primary Toolkit outcome and asks whether there is follow up data for the study. It should be coded at study level (i.e. not from the Outcome button).*

- Primary outcome  
*Please indicate the primary outcome and enter additional data using the 'Outcomes' box. The primary outcome should be the outcome most relevant to the Toolkit strand(s) in terms of educational impact, such as standardised tests of reading or mathematics (for literacy or mathematics interventions) or national test or examination results. See handbook and supporting resources for further information.*
- Secondary outcome(s)  
*Please add secondary outcomes in this section where they represent a fair test of the impact of the evaluation at post test. This should not include delayed or follow up tests, or outcomes used to check the specificity of impact (e.g. a maths test used to control for intervention effect in a literacy intervention) or checking for transfer outcomes.*
- SES/FSM outcome  
*If a separate effect is reported for low socio-economic status or free or reduced price school meals pupils please add here.*
- Are descriptive statistics reported for the primary outcome?
  - Yes
    - If yes, please add for the intervention\* group  
*Descriptive statistics for the intervention group. \*If there is more than one intervention group please add this below.*
      - Number (n)  
*What is the number for the intervention group in the data analysed for this outcome? Add numeric data only to the info box.*
      - Pre-test mean  
*Please record the pre-test mean (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
      - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
      - Post-test mean  
*Please report the post-test mean for this outcome for the intervention group (if provided) for this outcome. Add numeric data only to the info box.*
      - Post test standard deviation  
*Please record the post-test standard deviation for the intervention group for this outcome (if provided). Add numeric data only to the info box.*
      - Gain score mean (if reported)  
*Please add the gain score (pre-test to post test) mean for the intervention*

- group. Add numeric data only to the info box.*
- Gain score standard deviation (if reported)  
*Please add the gain score (pre-test to post test) standard deviation for the intervention group. Add numeric data only to the info box.*
  - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)), or use to add notes about the numeric data in the categories above.*
  - If yes please add for the control group  
*Descriptive statistics for the intervention group*
    - Number (n)  
*What is the number for the control group in the data analysed for this outcome? Add numeric data only to the info box.*
    - Pre-test mean  
*Please record the pre-test mean (if provided) for the control group for this outcome. Add numeric data only to the info box.*
    - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the control group for this outcome. Add numeric data only to the info box.*
    - Post-test mean  
*Please report the post-test mean for this outcome for the control group (if provided) for this outcome.*
    - Post test standard deviation  
*Please record the post-test standard deviation for the control group for this outcome (if provided).*
    - Gain score mean (if reported)  
*Add numeric data only to the info box.*
    - Gain score standard deviation (if reported)  
*Add numeric data only to the info box.*
    - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)).*
  - If yes, please add for a second intervention\* group (if needed)  
*Descriptive statistics for a second intervention group, if needed.*
    - Number (n)  
*What is the number for the intervention group in the data analysed for this outcome? Add numeric data only to the info box.*
    - Pre-test mean  
*Please record the pre-test mean (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
    - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
    - Post-test mean  
*Please report the post-test mean for this outcome for the intervention group (if provided) for this outcome. Add numeric data only to the info box.*
    - Post test standard deviation  
*Please record the post-test standard deviation for the intervention group for this outcome (if provided). Add numeric data only to the info box.*
    - Gain score mean (if reported)  
*Please add the gain score (pre-test to post test) mean for a second intervention group (if needed). Add numeric data only to the info box.*
    - Gain score standard deviation (if reported)  
*Please add the gain score (pre-test to post test) standard deviation for a second intervention group (if need). Add numeric data only to the info box.*
    - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)), or use to add notes about the numeric data in the categories above.*
    - If needed, please add for the control group  
*Descriptive statistics for the second control group (if needed and if different from the primary outcome control)*
      - Number (n)  
*What is the number for the control group in the data analysed for this outcome? Add numeric data only to the info box.*

- Pre-test mean  
*Please record the pre-test mean (if provided) for the control group for this outcome. Add numeric data only to the info box.*
  - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the control group for this outcome. Add numeric data only to the info box.*
  - Post-test mean  
*Please report the post-test mean for this outcome for the control group (if provided) for this outcome.*
  - Post test standard deviation  
*Please record the post-test standard deviation for the control group for this outcome (if provided).*
  - Gain score mean (if reported)  
*Please add the gain score (pre-test to post test) mean for this group (if need). Add numeric data only to the info box.*
  - Gain score standard deviation (if reported)  
*Please add the gain score (pre-test to post test) standard deviation for this group (if need). Add numeric data only to the info box.*
  - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)).*
- If yes, please add for a third intervention\* group (if needed)  
*Descriptive statistics for a third intervention group, if needed.*
  - Number (n)  
*What is the number for the intervention group in the data analysed for this outcome? Add numeric data only to the info box.*
  - Pre-test mean  
*Please record the pre-test mean (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
  - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the intervention group for this outcome. Add numeric data only to the info box.*
  - Post-test mean  
*Please report the post-test mean for this outcome for the intervention group (if provided) for this outcome. Add numeric data only to the info box.*
  - Post test standard deviation  
*Please record the post-test standard deviation for the intervention group for this outcome (if provided). Add numeric data only to the info box.*
  - Gain score mean (if reported)  
*Please report the gain score (pre-test to post-test) mean for this outcome for a third intervention group (if needed) for this outcome. Add numeric data only to the info box.*
  - Gain score standard deviation (if reported)  
*Add numeric data only to the info box.*
  - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)), or use to add notes about the numeric data in the categories above.*
- If needed please add for a control group  
*Descriptive statistics for a third control group (if needed and if different from the primary outcome control)*
  - Number (n)  
*What is the number for the control group in the data analysed for this outcome? Add numeric data only to the info box.*
  - Pre-test mean  
*Please record the pre-test mean (if provided) for the control group for this outcome. Add numeric data only to the info box.*
  - Pre-test standard deviation  
*Please record the pre-test standard deviation (if provided) for the control group for this outcome. Add numeric data only to the info box.*
  - Post-test mean  
*Please report the post-test mean for this outcome for the control group (if provided) for this outcome.*

- Post test standard deviation  
*Please record the post-test standard deviation for the control group for this outcome (if provided).*
    - Gain score mean (if reported)  
*Add numeric data only to the info box.*
    - Gain score standard deviation (if reported)  
*Add numeric data only to the info box.*
    - Any other information?  
*Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)).*
  - No
- Is there follow up data?  
*Please provide details of any assessment to measure long lasting effects (e.g. delayed post-test or long term follow up)*
  - Yes
  - No
- Outcome classification (CODE FROM OUTCOME BUTTON)  
*Outcome classifications for meta-analysis and meta-regressions. These need to be added from the Outcome button and within the outcome window NOT from this section.*
  - Sample (select one from this group)  
*Outcome classification relating to the sample.*
    - Sample: All  
*Analysis applied to normal or typical sample of pupils. The whole range of attainment or 'ability' for the educational setting was included in the intervention.*
    - Sample: Exceptional  
*Students described as gifted and talented or of exceptional 'ability'. Usually those in the top 10 per cent of the distribution.*
    - Sample: High achievers  
*Classification of the students in the sample in relation to their level of academic attainment. Those described as high attainers or high 'ability'; usually those in the top half or the top third of the distribution (depending on classifications).*
    - Sample: Average  
*Classification of the students in the sample in relation to their level of academic attainment. Those described as performing at or around average attainment or of average 'ability'; usually those in the middle quartiles (depending on classifications).*
    - Sample: Low achievers  
*Classification of the students in the sample in relation to their level of academic attainment. Those described as low attainers or low 'ability'; usually those in the bottom half or the bottom third of the distribution (depending on classifications).*
  - Test type (select one from this group)
    - Test type: Standardised test  
*A standardised test is administered and scored in a consistent way. The properties of the test are established through piloting on a group to determine the mean and spread of the scores for a particular target group. Standardised tests are usually named and the properties published.*
    - Test type: Researcher developed test  
*A test developed or designed for a specific research project*
    - Test type: National test  
*A test or examination used in regional or national evaluations of students and school performance. These may be optional or compulsory, but are organised and/or administered by the regional or national administration in a particular jurisdiction.*
    - Test type: School-developed test  
*A test or examination developed and used by a school or schools involved in the research as part of their usual assessment approach.*
    - Test type: International tests  
*Tests used for international comparisons of student performance (e.g. PISA, TIMMS, PIRLS, etc.)*
  - Effect size calculation (select one from this group)  
*What kind of effect size is being reported for this outcome?*
    - Post-test unadjusted (select one from this group)  
*A simple comparison of the differences between control and intervention groups using only the post-test data, usually from an older randomised controlled trial (RCT) or where baseline equivalence has been established.*
    - Post-test adjusted for baseline attainment  
*A post-test comparison where a measure of educational attainment at pre-test is*

*controlled for in the analysis of the impact of the intervention or approach e.g. ANCOVA, OLS regression.*

- Post-test adjusted for baseline attainment AND clustering  
*A post-test comparison where a measure of educational attainment at pre-test is controlled for in the analysis of the impact of the intervention or approach and where the estimate is adjusted for clustering at class or school level (e.g. ANCOVA, MLM, OLS regression).*
- Pre-post gain  
*Outcome assessment based on the difference between an individual's pre-test and post test scores and the range of these difference (gain score or pre-post analysis).*
- Outcome type (select all that apply)  
*This section identifies different kinds of primary outcomes for meta-analysis for the Toolkit overall (main effect), for Reading, for Writing and Spelling, for Mathematics, for Science and other outcomes. Please check the coding guide for more details. Some outcomes will have more than one code checked (often 'Toolkit primary outcome' and 'Reading primary outcome'). 'Other outcome' should only be used when no other codes are selected.*
  - Toolkit primary outcome  
*Select this code for the primary outcome for the Toolkit. This will usually be a measure of reading comprehension or another standardised test with good predictive validity as an indicator of learning.*
  - Reading primary outcome  
*Select this option if this outcome is the best overall indicator of improvement in reading. This will usually be a standardised measure of reading comprehension, where this is available.*
  - Writing and spelling primary outcome.  
*Select this code where the outcome is the best overall measure of writing or spelling. Preference should be given to an overall measure of writing where this is available. Standardised tests or national and state tests should be selected in preference to researcher or teacher designed measures.*
  - Mathematics primary outcome  
*Select this code where this outcome is the best overall measure of mathematics learning. This will usually be a standardised test of mathematics involving number and/or arithmetic.*
  - Science primary outcome  
*Select this code for the best overall measure of science learning. This will usually be a standardised test or a national or state test or examination.*
  - Other outcome  
*Select this code where none the five categories above apply. This will include all other secondary outcomes.*
- Toolkit strand(s) (select at least one Toolkit strand)  
*Please select the Toolkit strand or strands which this outcome is evaluating. Each study has usually been classified as appropriate for the Toolkit. There will not usually be more than one, but occasionally some outcomes are appropriate measures of more than one approach (such as when a teaching assistant delivers a phonics intervention). If unsure please check with the Toolkit team.*
  - Toolkit: Arts participation  
*Arts participation is defined as involvement in artistic and creative activities, such as dance, drama, music, painting, or sculpture. It can occur either as part of the curriculum or as extra-curricular activity. Participation may be organised as regular weekly or monthly activities, or more intensive programmes such as summer schools or residential courses. Whilst these activities have educational value in themselves, this Toolkit entry focuses on the benefits of arts participation for core academic attainment.*
  - Toolkit: Aspiration interventions  
*By aspirations we mean the things children and young people hope to achieve for themselves in the future. To meet their aspirations about careers, university, and further education, pupils often require good educational outcomes. Raising aspirations is therefore often believed to incentivise improved attainment.*
  - Toolkit: Behaviour interventions  
*Behaviour interventions seek to improve attainment by reducing challenging behaviour. This entry covers interventions aimed at reducing a variety of behaviours, from low-level disruption to general anti-social activities, aggression, violence, bullying, and substance abuse. The interventions themselves can be split into three broad categories:  
1. Approaches to developing a positive school ethos or improving discipline across the whole school which also aim to support greater engagement in learning. 2. Universal programmes which seek to improve behaviour and generally take place in the*

*classroom. 3. More specialised programmes which are targeted at students with specific behavioural issues.*

- Toolkit: Block scheduling  
*Block scheduling is an approach to school timetabling in secondary schools. It typically means that pupils have fewer classes (4-5) per day, for a longer period of time (70-90 minutes). The three main types of block schedules found in the research are: 4x4 block scheduling: 4 blocks of extended (80–90 minute) classes each day, covering the same 4 subjects each day. Students take 4 subjects over 1 term, and 4 different subjects in the following term. A/B block scheduling: 3 or 4 blocks of extended (70–90 minute) classes each day, covering the same 3 or 4 subjects on alternating days. Students take 6 or 8 subjects each term. Hybrid: a hybrid of traditional models and 3/4-class-per-day approaches. Students have 5 classes per day, of between 60 and 90 minutes.*
- Toolkit: Built environment  
*Changing the physical conditions or built environment of the learning setting, either by moving to a new school building or seeking to improve the structure, air quality, noise, light, or temperature of an existing building or classroom.*
- Toolkit: Collaborative learning  
*A collaborative (or cooperative) learning approach involve pupils working together on activities or learning tasks in a group small enough for everyone to participate on a collective task that has been clearly assigned. Pupils in the group may work on separate tasks contributing to a common overall outcome, or work together on a shared task. Some collaborative learning approaches put mixed ability teams or groups to work in competition with each other in order to drive more effective collaboration. There is a very wide range of approaches to collaborative and cooperative learning involving different kinds of organisation and tasks. Peer tutoring can also be considered as a type of collaborative learning, but in the Toolkit it is reviewed it as a separate topic.*
- Toolkit: Digital technology  
*The use of digital technologies to support learning. Approaches in this area are very varied, but a simple split can be made between: Programmes for students, where learners use technology in problem solving or more open-ended learning, and Technology for teachers such as interactive whiteboards or learning platforms which may be used by the teachers, or where the technology may provide instruction more directly.*
- Toolkit: Extending school time  
*This summary focuses on extending core teaching and learning time in schools and the use of targeted before and after school programmes. Other approaches to increasing learning time are included in other sections of the Toolkit, such as Homework, Early years intervention and Summer schools. The research focuses on three main approaches to extending teaching and learning time in schools: extending the length of the school year; extending the length of the school day; and providing additional time for targeted groups of pupils, particularly disadvantaged or low-attaining pupils, either before or after school.*
- Toolkit: Feedback  
*Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers.*
- Toolkit: Homework  
*Homework refers to tasks given to pupils by their teachers to be completed outside of usual lessons. Common homework activities in primary schools tend to be reading or practising spelling and number facts, but may also include more extended activities to develop inquiry skills or more directed and focused work such as revision for tests which is more similar to homework set in secondary schools. Other homework activities may include reading or preparing for work to be done in class, or practising and completing tasks or activities already taught or started in lessons, as well as revision for exams.*
- Toolkit: Individualised instruction  
*Individualised instruction involves different tasks for each learner and support at the*

*individual level. It is based on the idea that all learners have different needs, and that therefore an approach that is personally tailored — particularly in terms of the activities that pupils undertake and the pace at which they progress through the curriculum — will be more effective. Various models of individualised instruction have been tried over the years in education, particularly in subjects like mathematics where pupils can have individual sets of activities which they complete, often largely independently. More recently, digital technologies have been employed to facilitate individual activities and feedback.*

- **Toolkit: Learning styles**  
*The idea underpinning learning styles is that individuals all have a particular approach to or style of learning. The theory is that learning will therefore be more effective or more efficient if pupils are taught using the specific style or approach that has been identified as their learning 'style'. For example, pupils categorised as having a 'listening' learning style, could be taught more through storytelling and discussion and less through traditional written exercises.*
- **Toolkit: Mastery learning**  
*Mastery learning breaks subject matter and learning content into units with clearly specified objectives which are pursued until they are achieved. Learners work through each block of content in a series of sequential steps. Students must demonstrate a high level of success on tests, typically at about the 80% level, before progressing to new content. Mastery learning can be contrasted with other approaches which require pupils to move through the curriculum at a pre-determined pace. Teachers seek to avoid unnecessary repetition by regularly assessing knowledge and skills. Those who do not reach the required level are provided with additional tuition, peer support, small group discussions, or homework so that they can reach the expected level.*
- **Toolkit: Mentoring**  
*Mentoring in education involves pairing young people with an older peer or volunteer, who acts as a positive role model. In general, mentoring aims to build confidence, develop resilience and character, or raise aspirations, rather than to deliver specific academic skills or knowledge. Mentors typically build relationships with young people by meeting with them one to one for about an hour a week over a sustained period, either during school, at the end of the school day, or at weekends. Activities vary between different mentoring programmes, sometimes including direct academic support with homework or other school tasks. For programmes focused primarily on direct academic support see One to one tuition and Peer tutoring. Mentoring has increasingly been offered to young people who are deemed to be hard to reach or at risk of educational failure or exclusion.*
- **Toolkit: Metacognition and self-regulation**  
*Metacognition and self-regulation approaches aim to help pupils think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning. Interventions are usually designed to give pupils a repertoire of strategies to choose from and the skills to select the most suitable strategy for a given learning task. Self-regulated learning can be broken into three essential components: cognition - the mental process involved in knowing, understanding, and learning; metacognition - often defined as 'learning to learn'; and motivation - willingness to engage our metacognitive and cognitive skills.*
- **Toolkit: One to one tuition**  
*One to one tuition involves a teacher, teaching assistant or other adult giving a pupil intensive individual support. It may happen outside of normal lessons as additional teaching – for example as part of Extending school time or a Summer school – or as a replacement for other lessons.*
- **Toolkit: Oral language interventions**  
*Oral language interventions emphasise the importance of spoken language and verbal interaction in the classroom. They are based on the idea that comprehension and reading skills benefit from explicit discussion of either the content or processes of learning, or both. Oral language approaches include: Targeted reading aloud and discussing books with young children Explicitly extending pupils' spoken vocabulary The use of structured questioning to develop reading comprehension. All of the approaches reviewed in this section support learners' articulation of ideas and spoken expression, such as Thinking Together or Philosophy for Children. Oral language interventions therefore have some similarity to approaches based on metacognition, which make talk about learning explicit in*

classrooms, and to Collaborative Learning approaches, which promote pupils' talk and interaction in groups.

- Toolkit: Outdoor adventure learning  
*Outdoor adventure learning typically involves outdoor experiences, such as climbing or mountaineering; survival, ropes or assault courses; or outdoor sports, such as orienteering, sailing and canoeing. These can be organised as intensive residential courses or shorter courses run in schools or local outdoor centers. Adventure education usually involves collaborative learning experiences with a high level of physical (and often emotional) challenge. Practical problem-solving, explicit reflection and discussion of thinking and emotion (see also Metacognition and self-regulation) may also be involved. Adventure learning interventions typically do not include a formal academic component, so this summary does not include forest schools or field trips.*
- Toolkit: Parental engagement  
*We define parental engagement as the involvement of parents in supporting their children's academic learning. It includes:*  
*1. approaches and programmes which aim to develop parental skills such as literacy or IT skills; 2. general approaches which encourage parents to support their children with, for example reading or homework; 3. the involvement of parents in their children's learning activities; and 4. more intensive programmes for families in crisis.*
- Toolkit: Peer Tutoring  
*Peer tutoring includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support. In cross-age tutoring, an older learner takes the tutoring role and is paired with a younger tutee or tutees. Peer-assisted learning is a structured approach for mathematics and reading with sessions of 25-35 minutes two or three times a week. In reciprocal peer tutoring, learners alternate between the role of tutor and tutee. The common characteristic is that learners take on responsibility for aspects of teaching and for evaluating their success. Peer assessment involves the peer tutor providing feedback to children relating to their performance and can have different forms such as reinforcing or correcting aspects of learning. Peers are defined as other students or pupils at the same school or educational setting as the intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socio-economic or cultural background. University students tutoring primary school pupils would not usually be classified as 'peers'.*
- Toolkit: Performance pay  
*Performance pay schemes aim to create a direct link between teacher pay or bonuses, and the performance of their class in order to incentivise better teaching and so improve outcomes. A distinction can be drawn between awards, where improved performance leads to a higher permanent salary, and payment by results, where teachers get a bonus for higher test scores. Approaches differ in how performance is measured and how closely those measures are linked to outcomes for learners. In some schemes, students' test outcomes are the sole factor used to determine performance pay awards. In others, performance judgements can also include information from lesson observations or feedback from pupils, or be left to the discretion of the headteacher.*
- Toolkit: Phonics  
*Phonics is an approach to teaching reading, and some aspects of writing, by developing learners' phonemic awareness. This involves the skills of hearing, identifying and using phonemes or sound patterns in English. The aim is to systematically teach learners the relationship between these sounds and the written spelling patterns, or graphemes, which represent them. Phonics emphasises the skills of decoding new words by sounding them out and combining or 'blending' the sound-spelling patterns.*
- Toolkit: Physical activity  
*Physical activity refers to approaches that engage pupils in sports, dance, or any kind of physical exercise. This might be through organised after school activities or a programme organised by a local sporting club or association. Sometimes sporting activity is used as a means to encourage young people to engage in additional learning activities, such as football training at a local football club combined with study skills, ICT, literacy, or mathematics lessons.*
- Toolkit: Reading comprehension strategies  
*Reading comprehension strategies focus on the learners' understanding of written text. Pupils are taught a range of techniques which enable them to comprehend the meaning of what they read. These can include: inferring meaning from context; summarising or identifying key points; using graphic or semantic organisers; developing questioning*

*strategies; and monitoring their own comprehension and identifying difficulties themselves (see also 'Metacognition and self-regulation').*

- Toolkit: Reducing class size  
*As the size of a class or teaching group gets smaller it is suggested that the range of approaches a teacher can employ and the amount of attention each student will receive will increase, thereby improving outcomes for pupils.*
- Toolkit: Repeating a year  
*Pupils who do not reach a given standard of learning at the end of a year are required to repeat the year by joining a class of younger students the following academic year. This is also known as "grade retention", "non-promotion" or "failing a grade". For students at secondary school level, repeating a year is usually limited to the particular subject or classes that a student has not passed.  
Repeating a year is very rare in the UK but is relatively common in the USA where the No Child Left Behind Act (2002) recommended that students be required to demonstrate a set standard of achievement before progressing to the next grade level. Students can also be required to repeat a year in some European countries including Spain, France and Germany. In some countries, such as Finland, pupils can repeat a year in exceptional circumstances, but this decision is made collectively by teachers, parents and the student rather than on the basis of end of year testing.*
- Toolkit: School uniform  
*Schools identify clothing considered appropriate for pupils to wear in school, and usually specify the style and colour. Schools vary as to how strictly a uniform policy is enforced.*
- Toolkit: Setting or streaming  
*Pupils with similar levels of current attainment are grouped together either for specific lessons on a regular basis (setting or regrouping), or as a whole class (streaming or tracking). The assumption is that it will be possible to teach more effectively or more efficiently with a narrower range of attainment in a class.*
- Toolkit: Small Group Tuition  
*Small group tuition is defined as one teacher or professional educator working with two, three, four, or five pupils. This arrangement enables the teacher to focus exclusively on a small number of learners, usually on their own in a separate classroom or working area. Intensive tuition in small groups is often provided to support lower attaining learners or those who are falling behind, but it can also be used as a more general strategy to ensure effective progress, or to teach challenging topics or skills.*
- Toolkit: Social and emotional learning  
*Interventions which target social and emotional learning (SEL) seek to improve attainment by improving the social and emotional dimensions of learning, as opposed to focusing directly on the academic or cognitive elements of learning. SEL interventions might focus on the ways in which students work with (and alongside) their peers, teachers, family or community. Three broad categories of SEL interventions can be identified:  
1. Universal programmes which generally take place in the classroom; 2. More specialised programmes which are targeted at students with particular social or emotional problems; 3. School-level approaches to developing a positive school ethos which also aim to support greater engagement in learning.*
- Toolkit: Summer schools  
*Summer schools are lessons or classes during the summer holidays, and are often designed as catch-up programmes. Some summer schools do not have an academic focus and concentrate on sports or other non-academic activities. Others may have a specific focus, such as pupils at the transition from primary to secondary school, or advanced classes to prepare high-attaining pupils for university.*
- Toolkit: Teaching assistants  
*Teaching assistants (also known as TAs or classroom support assistants) are adults who support teachers in the classroom. Teaching assistants' duties can vary widely from school to school, ranging from providing administrative and classroom support to providing targeted academic support to individual pupils or small groups.  
Cognate terms: support staff; adult support staff; teaching assistants; associate staff; classroom assistants; classroom support assistant; auxiliary teachers; teacher's aide; education paraprofessional; nursery nurse (in early years' settings)*
- Toolkit: Within-class attainment grouping  
*Within-class attainment grouping involves organising pupils within their usual class for specific activities or topics, such as literacy. Pupils with similar levels of current attainment are grouped together, for example, on specific tables, but all pupils are*

*taught by their usual teacher and support staff, and they usually all follow the same curriculum.*

- EY\_Toolkit: Communication and language approaches
- EY\_Toolkit: Earlier starting age
- EY\_Toolkit: Early literacy approaches
- EY\_Toolkit: Early numeracy approaches
- EY\_Toolkit: Extra hours
- EY\_Toolkit: Parental engagement
- EY\_Toolkit: Physical development approaches
- EY\_Toolkit: Play-based learning
- EY\_Toolkit: Self-regulation strategies
- EY\_Toolkit: Social and emotional learning strategies
- Outcome labels (CODE FROM OUTCOME BUTTON)
 

*Please do not mark this section at study level. This section is completed in the 'Outcome specific code' screen accessed from the outcome button.*

  - Comparison
 

*Please do not mark this section. This section is completed in the 'Outcomes specific code' screen.*

    - With active control  
*i.e. there is control for novelty/ an introduced new treatment*
    - With business as usual  
*i.e. comparison group having usual learning experience*
    - With no equivalent teaching  
*i.e. additional learning time / no treatment, such as in a Summer School intervention or a Before or After school club*
  - Intervention outcome measure
 

*Type or focus of educational test used to measure the outcome of the impact of the intervention or approach.*

    - Literacy: reading comprehension  
*e.g. passage comprehension*
    - Literacy: decoding/phonics
    - Literacy: spelling
    - Literacy: reading other  
*Other reading outcomes (e.g. reading fluency, vocabulary comprehension (receptive vocabulary))*
    - Literacy: speaking and listening/oral language
    - Literacy: writing
    - Mathematics
    - Science
    - Social Studies  
*e.g. history, geography, economics*
    - Arts  
*e.g. music, art*
    - Languages  
*Second or foreign languages, based on the dominant language of instruction in the educational setting.*
    - Curriculum: other  
*Other curriculum outcomes not included in the above options (please specify)*
    - Combined subjects  
*Where the study combines two or more test outcomes from different subjects to provide an overall measure of educational progress (e.g. KS2 English and mathematics or multiple GCSE subjects).*
    - Cognitive: reasoning  
*Tests of verbal, analogical or visual reasoning, including IQ or other 'intelligence' tests.*
    - Cognitive: other  
*Other tests of cognitive performance such as working memory or perception.*

### **Appendix 3: EEF Toolkit strand specific data extraction**

## EEF Toolkit strand specific data extraction (Shared)

- Peer Tutoring v.04 Aug 2018

*Peer tutoring includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support. In cross-age tutoring, an older learner takes the tutoring role and is paired with a younger tutee or tutees. Peer-assisted learning is a structured approach for mathematics and reading with sessions of 25-35 minutes two or three times a week. In reciprocal peer tutoring, learners alternate between the role of tutor and tutee. The common characteristic is that learners take on responsibility for aspects of teaching and for evaluating their success. Peer assessment involves the peer tutor providing feedback to children relating to their performance and can have different forms such as reinforcing or correcting aspects of learning.*

*Peers are defined as other students or pupils at the same school or educational setting as the intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socio-economic or cultural background. University students tutoring primary school pupils would not usually be classified as 'peers'.*

- Who were the tutors?

*Describe the type of tutors involved.*

- Same-age as tutees (if yes, select one from drop down)
  - matched to same level of attainment  
*e.g. high attainers with high attainers*
  - matched to different level of attainment  
*e.g. high attainers with lower attainers*
  - not matched on attainment
- Cross-age (i.e. different school year from tutees)
  - Matched to same relative level of attainment  
*e.g. older high attainers with younger high attainers*
  - Not matched on attainment
- Were the tutors...
  - From the same school  
*Tutors and tutees are from a different school or institution.*
  - From a different school  
*Tutors and tutees are from the different schools or institutions.*

- Was the teaching role alternating/reciprocal?

- Yes
- No

- Tutee attainment level

*What is the level of academic attainment of the tutees?*

- Low attaining
- Average
- High attaining
- Mixed
- Not mentioned

- Was digital technology involved?

*Please select if the peer tutoring involve digital technology, either shared (such as using an iPad together) or for communication (such as video conference or chat program)?*

- Yes
- No

- Was an incentive provided for the tutors and/or tutees?

*Was there a reward or an incentive given as part of the intervention?*

- Yes
- No

- Feedback v.02 Oct 2018

*Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from*

- What was the source of the feedback?

- Teacher
- Teaching assistant
- Volunteer

- Parent(s) or other relatives  
*Parent(s), carer(s) or guardian(s). Also use for other family members (such as grandparents or siblings).*
- Researcher
- Peer (same age/ class)
- Peer (group)  
*Feedback from more than one same age pupil (e.g. when feedback is formalised in collaborative learning)*
- Peer (older)
- Digital or automated  
*Feedback from a computer or other digital device (e.g. mobile phone, website or program) where there is some automation involved.*
- Other non-human  
*Such as from a worked example or where answers are checked after the task has been completed.*
- Self  
*Only use this code when checking or self-assessment is strategic and self-regulated (such as applying a checking algorithm or mnemonic).*
- Other (please specify)  
*Please add notes about the source for this category, as described in the study.*
- Who was the feedback directed to?  
*This will almost always be to pupils, but may be to the teacher. If to the teacher, then there should be some explicit model of further feedback to change subsequent pupil behaviours or performance.*
  - Individual pupil
  - General (group or class)  
*Where the feedback is not specific to an individual learner, please indicate.*
  - Teacher  
*Only select this code when this is explicitly part of the model of feedback in the research study.*
- What form did the feedback take? (Select one)  
*This focuses on how the feedback was communicated. Choose the main feedback approach if there is more than one.*
  - Spoken verbal  
*Feedback provided in spoken form, this includes audio recorded comments.*
  - Non-verbal  
*Where feedback was communicated physically other than with words, such as through body language, gesture or other non-verbal means, such as extended wait time.*
  - Written verbal  
*Where written comments are provided, either handwritten or digitally.*
  - Written, non-verbal  
*Such as tick or check marks, or with symbols or icons (this includes marked tests or test results).*
- When did the feedback happen? (Select one)  
*Choose the option which best describes the feedback timing.*
  - Prior to the task  
*Sometimes described as 'feedforward', this is where pupils are primed with information before undertaking a task (e.g. students complete test and get positive, negative results regardless of actual score and then their performance on a following test is measured).*
  - During the task  
*Where the feedback is contemporaneous with the task or part of the task.*
  - Immediate  
*Where the feedback was provided immediately or shortly after the activity was completed (such as at the end of the task, or later the same day.*
  - Delayed (short)  
*Where the feedback occurred more than one day and up to a week after the task or activity.*
  - Delayed (long)  
*Where the feedback occurred more than a week after the task of activity.*
- What kind of feedback was provided?
  - About the outcome  
*Where the feedback was about the outcome or completed task (e.g. correct or incorrect).*
    - Correct  
*Where feedback was about the correct answers or responses*
    - Incorrect  
*Where feedback focussed on the incorrect answers or responses.*

- About the process of the task  
*Where the feedback is about how the task or activity is currently being, or should be, undertaken (process rather than outcome).*
  - About the learner's strategies or approach  
*Where the feedback was to support the learner's own regulation or control of what they were doing (i.e. metacognition and/or self-regulation) often in the form of prompts or cues.*
  - About the person  
*Feedback directed at the individual or self, such as good boy or clever girl.*
- What was the emotional tone of the feedback?  
*Select the most appropriate description for the emotional tone of the feedback. Select more than one only where this is explicitly part of the design, otherwise select the best overall description, based on how it is described in the study.*
  - Positive
  - Neutral  
*Where the feedback was designed or perceived to be neutral in tone.*
  - Negative  
*This is where the feedback is deliberately designed to be discouraging. It should not be used for feedback about incorrect responses or results.*
- Teaching assistants v.01 Aug 2018  
*Teaching assistants (also known as TAs or classroom support assistants) are adults who support teachers in the classroom. Teaching assistants' duties can vary widely from school to school, ranging from providing administrative and classroom support to providing targeted academic support to individual pupils or small groups.*  
*Cognate terms: support staff; adult support staff; teaching assistants; associate staff; classroom assistants; classroom support assistant; auxiliary teachers; teachers' aide; education paraprofessional; nursery nurse (in early years' settings)*
  - How are the teaching assistants described?
    - Teaching or classroom assistant  
*Teaching assistant is commonly used in England, whereas classroom assistant is more usual in Scotland.*
    - Higher level teaching assistant  
*A higher level teaching assistant (HLTA) can take additional responsibilities such as teaching classes on their own, covering planned absences and allowing teachers time to plan and mark.*
    - Teacher's aide  
*This description is commonly used in the USA.*
    - Paraprofessional or paraeducator  
*This is a more generic term covering a number of paraprofessional educator roles, sometimes known as a para, para-pro, paraeducator.*
    - Educational or instructional assistant
    - Pupil support worker or student support worker
    - Other (please specify)  
*Please add details of how the teaching assistants are described.*
  - What is the teaching assistants' role?
    - Curriculum instruction (please specify)  
*This is where the teaching assistant has a teaching or instructional role when working with an individual pupil or group of pupils. Please add details in the notes or highlight the curriculum focus (e.g. maths, reading, writing).*
    - Behaviour support  
*Support rather than instruction. This is where the teaching assistant role is primarily behavioural or motivational to keep pupils engaged or on task or to provide support to access the tasks or activities.*
    - Assessment  
*This is where the teaching assistant's role is primarily to undertake assessment of the pupil(s) such as through testing or observation.*
    - General classroom support  
*This is where the teaching assistant role is to provide help with classroom activities such as managing groups of pupils or involvement in non-teaching activities (preparation, marking etc.).*
    - Not specified/ unclear  
*This is where, although teaching assistants were involved there is little or no information about their role.*
  - How many pupils is the teaching assistant working with?  
*This is to indicate the number of pupils the teaching assistant has responsibility for at any particular time.*

- One to one  
*This is where the teaching assistant works with pupils individually, either providing instruction or support.*
  - Small group (2-4 pupils)  
*This is where the teaching assistant is working with a small group of between two and four pupils, together, at the same time.*
  - Large group (5 - 12 pupils)  
*This is where the teaching assistant is working with a larger group of pupils altogether, but not the whole class.*
  - Whole class  
*This is where the teaching assistant is working with the whole class, all together at the same time.*
- Oral language v.01 November 2018
  - What is the oral language focus in teaching? (Choose one)  
*This looks at the main aspect or aspects of oral language which are developed through the teaching and learning activities.*
    - Listening (language reception)  
*Please select if the teaching and learning activities mainly involve pupils in listening (e.g. being read to, or listening to others).*
    - Speaking (language production)  
*Please select if the main focus of the teaching and learning activities involves the pupils in speaking out loud, such as reading aloud, or reciting or debating and public speaking.*
    - Both speaking and listening (interaction)  
*Please select if both speaking and listening are involved, such as*
  - What is the explicit target of the oral language development? (Choose best overall)  
*This section looks at the process and outcomes of the oral language development.*
    - General talk and articulation  
*This includes outcome such as improving verbal expression and interaction*
    - Vocabulary development  
*Where the focus is on increasing either the listening (receptive) or speaking (productive) vocabulary or repertoire of words used or understood*
    - Subject knowledge or information acquisition  
*Where the goal is to improve learner's language in particular subjects or topics related to the curriculum. This is sometimes referred to as efferent language (as opposed to expressive language).*
    - Improved comprehension or understanding (Select one)  
*Where the goal is improved understanding (receptive), rather than basic vocabulary recall.*
      - Listening comprehension  
*Where the focus is primarily on aural comprehension and the understanding of spoken language*
      - Reading comprehension  
*Where the focus is on making sense of written information*
    - Improved writing outcomes  
*Where the focus of the oral language intervention or approach is on improved written language and communication*
    - Improved thinking and reasoning (dialogic)  
*Approaches which focus on developing oral language to as to improved analytic or reasoning outcomes such as in argumentation or dialogic interaction*
    - Other/ Unclear (please add details to info box)  
*If the process, aims and outcomes are difficult to classify, please indicate and add details to the info box to describe the issue or other outcome.*
  - Who is involved in the oral language activities? (Check all that apply)  
*This considers who is actively involved in the teaching and learning activities. Do not include teacher unless they play an active role in the tasks and activities (ie not general organisational involvement).*
    - Individual learner (e.g. self talk)  
*Where the oral language development has a focus on the individual, working on their own (e.g. self-talk) or without human interaction (computer-based learning involving speaking and/or listening).*
    - Pupils (same age)  
*Where all of the students or pupils are of the same age (e.g. same class or school year) and the oral language activities involve only pupils.*
    - Pupils (mixed ages)  
*Where the students or pupils are from different age groups (e.g. different age-based class or school years) but where the oral language activities involve only pupils.*

- Teacher or other education professional  
*Where the teacher or other professional educator (e.g. teaching assistant) is actively involved in the oral language activities as a participant (rather than as organiser or orchestrator).*
    - Volunteer  
*Where an adult volunteer is actively involved in the oral language activities as a participant (rather than as tutor or instructor).*
    - Parent, carer or other relative  
*Where the person involved as an active participant in the oral language activities is a relative or care (such as in book sharing schemes).*
    - Other/ not clear  
*Please use this code if the active partner(s) in an interaction or dialogue is non-human (such as reading to dogs, or a digital simulation) or where the above codes do not apply. (Please add details to the info box if the partner in the interaction is not clear about the source of any confusion.)*
- Small group tuition v.01 January 2019
  - Group size  
*This is the number of pupils in the group(s) being taught. Small group tuition is defined as one teacher or professional educator working with two to five pupils together in a group. This includes instruction involving digital technology, but where the pupils are working together.*
    - 2  
*Where two pupils are being taught by a teacher or other educator (including instruction in pairs at a computer or other digital technology).*
    - 3  
*Where three pupils are being taught by a teacher or other educator (including instruction at a computer or other digital technology).*
    - 4  
*Where four pupils are being taught by a teacher or other educator (including instruction at a computer or other digital technology).*
    - 5  
*Where five pupils are being taught by a teacher or other educator (including instruction at a computer or other digital technology).*
    - Mixed groups  
*Where pupils in small groups of different sizes (with the majority of groups between 2 and 5 pupils) are being taught by a teacher or other educator (including instruction at a computer or other digital technology).*
  - Group composition  
*The level of attainment of the pupils in each group.*
    - Same level - low attainers  
*Homogeneous groups of pupils of low relative attainment or described as low 'ability'.*
    - Same level - average attainers  
*Homogeneous groups of pupils of average relative attainment or described as average 'ability'.*
    - Same level - high attainers  
*Homogeneous groups of pupils of high relative attainment or described as high 'ability'.*
    - Mixed attainment - all pupils  
*Heterogeneous groups of all or any pupils from the class.*
    - Mixed attainment - high and low  
*Heterogeneous groups of pupils designed to include high and low attainers in the same group.*
    - Mixed attainment - low and average  
*Heterogeneous groups of pupils designed to include low and average attainers in the same group.*
    - Mixed attainment - high and average  
*Heterogeneous groups of pupils designed to include high and average attainers in the same group.*
  - Teaching  
*Describes who is leading the teaching or instruction of the group.*
    - Teacher  
*A teacher or trained professional educator equivalent to a teacher teaching or leading the instruction.*
    - Teaching assistant  
*A teaching assistant or para-educator teaching or leading the small group instruction.*
    - Researcher  
*Where a researcher takes on a teaching role with the group.*
    - Digital technology  
*Where the teaching role is using digital technology (such as a tutoring program) and the pupils*

*are using the technology in groups.*

- Metacognition and self-regulation v.01 January 2019
  - Type of metacognitive knowledge (select all that apply)
 

*This looks at the focus of the metacognitive knowledge, whether it is about tasks and learning activities, about the learner themselves, or about strategic knowledge of when to use particular strategies.*

    - Knowledge of learning strategies/ techniques
 

*The focus is on procedural knowledge of learning strategies and techniques and how to use them.*
    - Knowledge of when to use particular approaches
 

*The focus here is on more strategic or conditional knowledge of when and why to apply particular metacognitive strategies and techniques*
    - Knowledge of self
 

*The focus here is on the learner's knowledge of themselves and their own cognitive strengths and weaknesses or metacognitive capabilities.*
  - Metacognitive task stage (select all that apply)
 

*This is about whether the focus for metacognition is before the task or activity (planning), during the task or activity (monitoring or managing thinking) or after the task or activity (evaluation, review or reflection).*

    - Planning
 

*Where the metacognitive focus is on planning and/or preparing for a task or learning activity.*
    - Monitoring
 

*Where the metacognitive focus is on monitoring and/or managing thinking during a task or learning activity.*
    - Evaluating
 

*Where the metacognitive focus is on evaluating, reviewing or reflecting AFTER a task or learning activity.*
  - Type of metacognitive strategy (select all that apply)
 

*This codes for the kinds of metacognitive strategies involved.*

    - General learning strategies
 

*Where there is not a specific curriculum focus or skill, but rather on general learning skills or 'learning to learn' approaches.*
    - Reading and/or comprehension strategies
 

*Where the focus of the activity is on developing understanding of texts.*
    - Problem-solving strategies
 

*Where the focus of metacognitive activity is on problem-solving, often in mathematics.*
    - Recall or metamemory strategies
 

*Where the focus is on strategies to help with recall of information.*
    - Critical thinking, reasoning and argumentation strategies
 

*Where the focus is on aspects of critical thinking, reasoning, inductive reasoning, logical thinking, argumentation and debating (including dialogic approaches.*
  - Self-regulation and motivational aspects (select all that apply)
    - Personal capability/ self efficacy
 

*Where the focus is on the learner's personal capability or self efficacy*
    - Task value/ success
 

*Where the motivational focus is on the task, its value and importance.*
    - Managing motivation and effort
 

*Approaches which focus on managing motivation, persistence.*
    - Mastery approaches/ goal orientation
 

*Where the aim is to achieve particular goals, such as fluency or capability.*
  - Teaching approach (select ONE of the first 2)
 

*The approach taken to develop metacognition and self-regulation. NB Select either individual or collaborative and Digital Technology (if it applies)*

    - Individual
 

*Where approaches focus on individual students*
    - Collaborative
 

*Where learners work collaboratively or cooperatively in pairs or groups.*
    - With digital technology
 

*Where the approach involves the learners in using computers or other digital technologies.*

      - Yes
 

*Where the approach involves the learners in using computers or other digital technologies.*
      - No
- Summer school v.01 February 2019
 

*First draft of the 'Summer school' strand specific coding.*

- Purpose or aims (select all that apply)  
*What was the purpose or what were the broad aims of the summer school programme? Select all that apply, but only where this aim is or these aims are explicitly mentioned in the report of the study.*
  - Catch-up or remediation  
*Where the broad goals were to help pupils catch up or keep up with their peers in terms of academic attainment.*
  - Enrichment or compensation for disadvantage  
*Where the goal is to help pupils achievement by providing experiences that they might not otherwise get (including, but not limited to visits and trips, wider skills and opportunities in culture, arts or sports).*
  - School transition  
*Where the aim of the summer programme is to support children and young people move between schools or types of schools during the summer holiday.*
  - Acceleration and/of gifted and talented  
*Where the aim is to provide additional support for learners who are considered unusually or exceptionally talented or capable, usually by providing more advanced courses or lessons than the pupils would receive in school.*
  - Not specified or unclear  
*Please add notes to the info box and/or highlight the text in the document if there is unclear or confusing information about the aims or purpose of the summer school.*
- Participation by pupils (select one)  
*Whether the participants were volunteers or were required to attend the summer school.*
  - Voluntary or optional  
*Where the pupils (or their parents and/or carers) could choose whether they enrolled for the summer school.*
  - Compulsory or required  
*Where the pupils were required to attend by their school or were assigned to the summer school without choosing to do so. This does not include where parents make their children attend.*
  - Not mentioned  
*Where there is no information about whether the participants chose whether to sign up for the summer school or not.*
- Residential (select one)  
*Did the summer school involve overnight stays or had a residential component?*
  - Yes  
*Where the summer school involved residential or overnight stays.*
  - No  
*Where there was not a residential component to the summer school or where it is reasonable to assume there was not.*
  - Unsure  
*Please only use this code if you are genuinely unsure about whether the summer school involved a residential stay. In most cases it is reasonable to infer if there is no mention of a residential component that there was not. Please add notes to the info box and highlight the text in the report which makes you unsure.*
- Class or group size (select all that apply)  
*For information about the size of the teaching groups in the summer school.*
  - One-to-one or individual teaching  
*Where all of some of the teaching at the summer school involved one-to-one or individual teaching.*
  - Small group (2 - 5 pupils)
  - Large group (6-15 pupils)
  - Class size (16+)  
*Where the summer school pupils are taught in groups of 16 or larger.*
- Activity focus (select best option)  
*What is the focus of activity in the summer school? How academic is it?*
  - Academic only  
*Where the activities in the summer school are solely academic or subject based. Use this option if there is no information about additional activities.*
  - Academic and sports  
*Where the summer school includes sporting and/or physical activities (e.g. outdoor games, climbing etc.).*
  - Academic and cultural or artistic  
*Where the summer school involved cultural or artistic activities (e.g. arts, music, drama, visits to galleries and museums).*

- Academic and vocational skills  
*Where there is an employment related component to the summer school, such as training, employment or vocational activities.*
    - Academic and social  
*Where the summer school includes social activities such as games and entertainment.*
  - Teachers and/or staff (select all that apply)  
*Indicate what kind of staff were involved in the teaching of any academic content (e.g. reading, mathematics).*
    - Qualified teachers  
*Where some or all of the staff have teaching qualifications or certification.*
    - Teaching assistants/ paraprofessionals  
*Where some or all of the staff are not fully qualified or certified teachers, but do have experience of teaching in their work.*
    - Young people/adults (paid)  
*Where young people, typically university students, are paid to teach at the summer school. Please also use this code for older but unqualified adults with no teaching or paid educational experience and add a note to this effect.*
    - Volunteers (unpaid)  
*Where some or all of the staff are unpaid volunteers.*
    - Other (please specify)  
*Please add notes if other staff were involved who do not fit into any of the above categories.*
  - Parental involvement (select one)  
*Were parents involved, either directly in the activities of the summer school, in homework or through other engagement activities?*
    - Yes  
*Where parents' role is mentioned or described in the report.*
    - No / not mentioned  
*Where parents' role is not mentioned or where they were explicitly not involved.*
  - Digital technology (select one)  
*Where computers or digital technologies were involved in the activities of the summer school, such as pupils using computers or digital tools in their learning or other summer school activities.*
    - Yes  
*Where digital technology, ICT or computers are mentioned as being involved in the summer school activities.*
    - No / not mentioned  
*Where there is no mention of computers, ICT or digital technologies in the activities of the summer school.*
  - Attendance (select one)  
*Was attendance monitored as part of the summer school?*
    - Yes  
*Where attendance at the summer schools is recorded or monitored in some way.*
    - No / not mentioned  
*Where attendance at the summer schools was not recorded or monitored in some way or is not mentioned in the report.*
- One to one v.01 February 2019
  - Which comparisons are available in this study? (Select all that apply)  
*This is to identify which comparisons can be made with the data available in the study to evaluate the impact of one to one tuition. One to one programmes and approaches are often used to support pupils who are falling behind to 'catch up' with their peers. Sometimes comparisons are made with similar pupils not getting one to one support, sometimes with other forms of catch up support. This makes identifying a fair and consistent comparison challenging.*
    - With business as usual comparison (no additional support, but still being taught)  
*Usually this will be other pupils receiving normal tuition in class (as opposed to another catch up approach).*
    - With no equivalent teaching (e.g. summer school)  
*Where the intervention is additional to usual teaching such as in a summer school or before or after school intervention where the comparison group are not being taught.*
    - With alternative tutor (e.g. teaching assistant vs volunteer)  
*Where a comparison is made between a different teacher or tutor, such as teaching assistant compared with volunteers, or teacher compared with computer and where pupils are taught one-to-one in both groups.*
    - With alternative approach: Small group (2-5 pupils)  
*Where the one to one approach is contrasted with small group tuition.*
    - With alternative approach: Large group (6-15 pupils)  
*Where the one-to-one approach is compared with large group (but not whole class) teaching.*

- With alternative approach: computer/ digital technology  
*Where the one-to-one tutoring or teaching by a human tutor is compared with individual or collaborative use of digital technology.*
  - With alternative approach: other (please specify)  
*Where the one to one is contrasted with another active control. Please add details in the info box.*
  - With pupils at a different level of attainment  
*Where the one to one group of pupils is compared with another group of learners who are explicitly described as attaining at a different level (usually 'average' or 'normally' attaining, but sometimes those of high or low attainment (but where this is not matched)).*
- Learning styles v.01 February 2019  
*First draft of the strand specific data extraction tool for learning styles studies*
  - Type of learning styles model (select all that apply)  
*The name or type of learning styles model(s) evaluated in the study. Please only select more than one if each model was evaluated in the study (multiple group designs).*
    - Dunn & Dunn Learning Style model  
*Dunn & Dunn's model has five main elements, 1) environmental, 2) emotional support, 3) sociological composition, 4) physiological, and 5) psychological elements. Each of these has further sub-divisions.*
    - Gardner's Theory of Multiple Intelligences  
*Teaching approaches based on Howard Gardner's Frames of Mind' theory of multiple intelligences which include musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal, (and latterly) naturalistic.*
    - Gregorc's Mind Styles Model  
*Anthony F. Gregorc's Mind Styles Model and its associated Style Delineator.*
    - Kolb learning cycle (also 4MAT, Honey & Mumford)  
*Learning styles approaches developed using Kolb's learning cycle. This includes approaches such as 4MAT (developed by Bernice McCarthy - thinking, feeling, acting, reflecting) and Honey & Mumford's Activist, Theorist, Pragmatist and Reflector styles.*
    - Myers Briggs Type Indicator  
*The Myers-Briggs Type Indicator is an self-report questionnaire which aims to identify differing psychological preferences in how people perceive the world around them and make their decisions. It is based on Carl Jung's ideas and identifies four main dichotomies Extraversion (E) or Introversion (I), Sensing (S) or Intuition (N), Thinking (T) or Feeling (F) and Judging (J) or Perceiving (P).*
    - Perceptual learning style (Visual, Auditory, Kinaesthetic/ VAK/ VAKT)  
*Learning styles approaches based on perception or sensory modalities.*
    - Riding's Cognitive Styles Analysis  
*A computer-based assessment of cognitive or learning style based on the Wholist-Analytic and the Verbal-Imagery dichotomies developed by Richard Riding.*
    - Witkin's field dependent/independent cognitive style  
*The Educational Testing Service (ETS) produced the Group Embedded Figures Test, suited for testing a classroom of students based on Witkin's ideas about field dependence and field independence. Other tests include Tilting Rod and Frame Test and the Tilting Room, Tilting Chair Test.*
    - Other (please specify)  
*If none of the above categories of learning styles apply please use this code and add the name of the approach or key author to the info box, as well as highlighting the relevant text in the study.*
  - Design approach (select all that apply)  
*How were the students allocated to the groups?*
    - Learning style activities matched to learner preference  
*Group allocation is not random, but based on matching student learning style to appropriate learning styles activities.*
    - Random allocation of task to learner (no match)  
*Where students and learning styles tasks or activities are randomly allocated and outcomes are correlated with students' learning styles.*
    - Mismatch of learner and style (deliberate mismatch)  
*Where, after a learning styles test or questionnaire, some students are deliberately assigned to groups which do not match their identified learning style. This is sometimes used as a control or comparison condition.*
    - Learner style matched to teacher style  
*Where teacher and student learning styles are matched, either at the design stage, or in the analysis.*
- Behaviour interventions v.01 Mar 2019

- Target group (select one)

*How is the intervention or approach targeted? Who receives the intervention?*

- Universal/ whole class  
*Where the target group for the programme or approach is the whole group whether a school or class.*
- Selected or pull out (individual or small group)  
*Where the intervention is targeted at individuals or specific pupils as either a preventative or responsive approach.*
- Family group  
*Where the target or focus of the intervention or approach is the family group (parents, siblings or other relatives).*
- Other (please specify)  
*Please use the info button to record the target group or focus of the behavioural intervention.*
- Unclear/ not specified (please add notes)  
*Please add notes where possible to indicate why identifying the target or focus of the intervention is difficult to identify.*

- Approach (select one)

*What is the approach used in the intervention? What kinds of behaviours are included?*

- Social skills / social problem solving  
*Where the approach focuses on social interaction and engagement, such as identifying other people's responses or feelings.*
- Anger management/ behavioural treatment  
*Where the focus is on responding to or managing specific, usually undesirable, behaviours such as through cognitive behavioural approaches or strategies to improve behavioural self-regulation.*
- Other (please specify)  
*Please add details about the approach taken in the study.*

- Components (select all that apply)

*What are the components of the intervention? What is included in the approach?*

- Counselling, discussion or therapy  
*Where the focus is on talk based approaches to managing behaviour*
- Monitoring and/ or feedback  
*Where specific behaviours are tracked and feedback is provided, such as specific consequences (e.g. rewards and sanctions)*
- Self-management techniques  
*These might include visualisation, relaxation or reflection techniques to support the pupil in increasing their behavioural self-regulation.*
- Role play and/or rehearsal  
*Where particular behaviours are practiced or acted out.*
- Parental/ family involvement  
*Where parents, carers or other family members are involved*
- Academic focus (coaching, mentoring or tutoring)  
*Where the behavioural programme includes a focus on school work.*
- Digital technology  
*Where the approach includes digital technologies such as digital communication or monitoring or the use of computers or tablets in game-based or scenario exploration.*

- Reading comprehension strategies v01 Mar 2019

- Reading components (select all that apply)

*What techniques or approaches are included in the intervention or reading programme?*

- Strategy instruction/ metacognitive approach (see also next section)  
*Where the emphasis is on teaching strategies or explicit techniques, often involving metacognitive approaches.*
- Vocabulary and/or word study  
*Where the focus for development includes explicit mention of vocabulary development or word level study.*
- Reading fluency (e.g. practice or re-reading)  
*Where the emphasis includes a focus on developing fluency so as to improve understanding.*
- Phonics or explicit decoding strategies  
*Where the approach includes explicit teaching of phonics or has an emphasis on decoding skills or strategies.*
- Writing or writing to read approaches  
*Where writing activities are included as a means to develop reading capability.*
- Other (please specify)  
*Please add details of any other reading components of the intervention.*

- Unclear/ not specified  
*Where the reading approach is not specified or is unclear - please add notes where possible to explain.*
- IF strategy instruction is included, what type? (Select all that apply)  
*If strategy instruction is selected, please specify which type(s) are involved.*
  - Reciprocal reading/ reciprocal teaching  
*Where the teaching approach includes pupils taking turns in reading and asking questions designed to improve comprehension.*
  - Self-questioning  
*Where pupils are taught to ask questions about the text as they a reading to help them monitor their comprehension.*
  - Graphic organisers and/or diagrams  
*Where the use of graphic organisers, diagrams, mind maps or planning tools are involved in the approach to help identify the text structure, key ideas or events, or prediction and inference.*
  - Note taking  
*Where the reading comprehension involved pupils making notes as they read.*
  - Verbalisation and discussion techniques  
*Where the approach involved pupils explaining and/or discussing aspects of the text to develop understanding.*
  - Visualisation techniques  
*Where pupils are encouraged to picture or visualise aspects of a text to improve understanding.*
  - Self-regulation and/or attribution training  
*Where self-management of feelings or motivation are included in the programme or approach. This will usually be have a non-cognitive focus (to distinguish them from metacognitive approaches).*
  - Other (please specify)  
*If other strategies or metacognitive technqies are specified or described please add details.*
  - Unclear/ not specified  
*Where an approach has been described as including strategy instruction but there are no further details or the approach is unclear. Please add notes where possible to explain.*
- Instructional components (select all that apply)
  - Direct instruction  
*Where the teacher has a clear role in explaining and telling pupils in activities to develop reading comprehension.*
  - Demonstration and modelling  
*Where the teacher or instructor has a role in showing demonstrating or modelling reading skills and techniques to develop comprehension.*
  - Pupil practice - collaborative  
*Where pupils read texts together (e.g. group reading) and discuss the meaning of what the text. This may involve other technques or components such as reciprocal questioning or collaborative activities.*
  - Pupil practice - individual  
*Where pupils have time ro practise reading, either out loud or silently. This may involve other techniques such as self-questioning or note taking.*
  - Other (please specify)  
*Please add other details of the teaching and learning activities as described in the study.*
- Text type/ reading materials (select all that apply)
  - Narrative text  
*Where the text has a story or narrative structure and the purpose is to entertain.*
  - Expository text  
*Texts which focus on information and explanation.*
  - Argumentation texts  
*Where the focus is on debate and the evaluation of evidence*
  - Mixed text types  
*Where a range of texts are included in the programme or approach.*
  - Not specified/ unclear  
*Where there are no details of the text type or where this is unclear. Please add notes where possible.*
- Extending school time v.01 April 2019  
*First draft of the 'Extending school time' strand specific coding.*
  - How was school time extended? (Select all that apply)  
*In what way was school time increased?*

- Before school  
*Where school starts earlier than usual or additional activities or classes are organised before the start of the usual school day.*
- After school  
*Where school finished later than usual or additional activities or classes are organised after the end of the usual school day.*
- At weekends  
*Where additional activities take place at weekends such as Saturday lessons or clubs.*
- During holidays  
*Where additional lessons or educational activities take place in what would usually be holiday or vacation time.*
- Extended school calendar  
*Where the regular pattern of schooling is altered, such as longer school days, longer terms or shorter holidays. NB there needs to be a overall increase in school time, not just changes to the pattern of terms and breaks.*
- How much time was added? (Select best)  
*What is the overall increase in school time in either hours per week or days per year.*
  - Hours per week (add numeric value to info box)  
*Estimate the number of hours per week involved in the programme or approach where possible.*
  - Days per year (add numeric value to info box)  
*Add the number of additional days per year involved in the programme or approach.*
  - Not mentioned/ unclear  
*Please select this only if there is no information about the amount of additional time involved.*
- Purpose or aims (select all that apply)  
*What was the purpose or what were the broad aims of extending school time? Select all that apply, but only where this aim is or these aims are explicitly mentioned in the report of the study.*
  - Catch-up or remediation  
*Where the broad goals were to help pupils catch up or keep up with their peers in terms of academic attainment.*
  - Enrichment or compensation for disadvantage  
*Where the goal is to help pupils achievement by providing experiences that they might not otherwise get (including, but not limited to visits and trips, wider skills and opportunities in culture, arts or sports).*
  - Improving attainment  
*Where the aim of extending school time is improve educational outcomes.*
  - Acceleration and/of gifted and talented  
*Where the aim is to provide additional support for learners who are considered unusually or exceptionally talented or capable, usually by providing more advanced courses or lessons than the pupils would receive in school.*
  - Other (please add details)  
*Please add further information as provide in the report.*
  - Not specified or unclear  
*Please add notes to the info box and/or highlight the text in the document if there is unclear or confusing information about the aims or purpose of extending school time*
- Target group (select best)  
*Which group of pupils was specified as benefiting from the extended school time?*
  - All pupils  
*Where the aim was to improve outcomes for all pupils, with no specific beneficiaries mentioned. Please also select this option if there is no specific group mentioned*
  - Disadvantaged pupils  
*Where the aim was to improve outcome or opportunities for children and young people experiencing socio-economic or other disadvantage.*
  - At risk pupils - academic  
*Where a group of pupils is selected or targeted on the basis on their academic attainment.*
  - At risk pupils - behaviour  
*Where a group of pupils is identified on the basis of behavioural issues (e.g. problem behaviour, drug and alcohol abuse, non-attendance etc).*
  - High achieving/ gifted and talented  
*Where the aim of extending school time is to provide additional opportunities for high achieving pupils or those identified as gifted and talented.*
- Participation by pupils (select one)  
*Whether the participants were either volunteers or were required to attend the additional sessions.*
  - Voluntary or optional  
*Where the pupils (or their parents and/or carers) could choose whether they were involved in*

- the additional time.*
- Compulsory or required  
*Where the pupils were required to attend by their school or were assigned to the extended time activities without choosing to do so. This does not include where parents made their children attend.*
  - Not mentioned/ unclear  
*Where there is no information about whether the participants chose whether to participate in the extended school time activities or not.*
- Class or group size (select all that apply)  
*For information about the size of the teaching groups in the extended school time.*
- One-to-one or individual teaching  
*Where all of some of the teaching in the additional school time involved one-to-one or individual teaching.*
  - Small group (2 - 5 pupils)  
*Where the activities were mainly organised in small groups.*
  - Large group (6-15 pupils)  
*Where the activities were mainly organised in large groups.*
  - Class size (16+)  
*Where the extended school time activities are taught in groups of 16 or larger.*
- Activity focus (select best option)  
*What is the focus of activity in the extended school time? How much is it like usual school?*
- Academic only  
*Where the activities in the extended time are solely academic or subject based as would usually take place in school or for homework. Use this option if there is no information about additional activities.*
  - Academic and sports or physical activities  
*Where the extended school time includes sporting and/or physical activities (e.g. outdoor games, climbing etc.).*
  - Academic and cultural or artistic  
*Where the extended school time involved cultural or artistic activities (e.g. arts, music, drama, visits to galleries and museums).*
  - Academic and vocational skills  
*Where there is an employment related component to extending school time such as training, employment, technical or vocational activities.*
  - Academic and social  
*Where the extended school time includes social activities such as games and entertainment.*
- Teachers and/or staff (select all that apply)  
*Indicate what kind of staff were involved in the teaching of any academic content (e.g. reading, mathematics).*
- Qualified teachers  
*Where some or all of the staff have teaching qualifications or certification.*
  - Teaching assistants/ paraprofessionals  
*Where some or all of the staff are not fully qualified or certified teachers, but do have experience of teaching in their work.*
  - Young people/adults (paid)  
*Where young people, typically university students, are paid for their involvement in extended school time. Please also use this code for older but unqualified adults with no teaching or paid educational experience and add a note to this effect.*
  - Volunteers (unpaid)  
*Where some or all of the staff are unpaid volunteers.*
  - Other (please specify)  
*Please add notes if other staff were involved who do not fit into any of the above categories.*
- Parental involvement (select one)  
*Were parents involved, either directly in the activities, in homework or through other engagement activities?*
- Yes  
*Where parents' role is mentioned or described in the report.*
  - No / not mentioned  
*Where parents' role is not mentioned or where they were explicitly not involved.*
- Digital technology (select one)  
*Where computers or digital technologies were involved in the extended school time activities, such as pupils using computers or digital tools in their learning or other activities.*
- Yes  
*Where digital technology, ICT or computers are mentioned as being involved in the extended school time activities.*

- No / not mentioned  
*Where there is no mention of computers, ICT or digital technologies in the extended school time activities.*
  - Attendance (select one)  
*Was attendance monitored as part of the extended school time approach?*
    - Yes  
*Where attendance or involvement in the extended school time is recorded or monitored in some way.*
    - No / not mentioned  
*Where attendance or involvement in extended school time was not recorded or monitored in some way or is not mentioned in the report.*
- Mentoring v.02 Oct 2019  
*Updated 12th October 2020 SH.*
  - Who were the mentors?  
*Describes who was involved in the programme or intervention as mentors working with pupils in schools.*
    - Older school students  
*Older school students from the same or similar school educational setting. This is distinguished from peer tutoring as there is no direct teaching or tutoring of school subjects.*
    - College or University students  
*Where the mentors are College or University students (including teacher trainees) from a higher or further education institution.*
    - Adults (see description)  
*Adults such as from the local community, volunteers or as school liaison from a place of work. NB Parents mentoring their own children would not be considered mentoring, though the study should be reviewed for parental involvement. Please add additional information where possible (such as about the ages and kinds of volunteers and how the mentors were recruited/ selected).*
    - Other (please specify)  
*Where the mentors do not fit into one of the above categories. Please add further details and highlight the relevant descriptions of the mentors involved.*
  - Were the mentors paid or compensated in any way?  
*Where mentors received payment for working with students or were provided with expenses to cover costs.*
    - Yes
    - No
    - Unclear/ No information  
*Where there is no information about whether the mentors received any recompense.*
  - Who organised the mentoring?  
*A description of who organised or planned and managed the mentoring programme or intervention*
    - The school(s)  
*Where the school or schools that the students attend (or are due to attend) organised the mentoring.*
    - A local community group  
*This would be an organisation independent of the school, but specific to the area or location of the school, including a church or local voluntary organisation).*
    - A charity or other voluntary organisation  
*A charity or other voluntary organisation working regionally or nationally (but not a local community group - see above).*
    - The local authority, government or state  
*A programme funded by local or national government including a local or regional council, state, national or federal programme.*
    - Other (please specify)  
*Please highlight details about the nature of the providing organisation.*
  - Was training provided for mentors?  
*Please add details of any training provided for mentors.*
    - Yes
    - No
    - Unclear/ No information  
*Where there is no information about whether the mentors received any recompense.*
  - How frequently did meetings take place? (Select one)  
*Details about the frequency of mentoring meetings.*
    - Daily  
*Where mentoring took place daily or several times a week.*

- Weekly  
*Where mentoring meetings took place about once a week or so.*
- Every two to three weeks  
*Where mentoring took place more than once a month but less than once a week.*
- Monthly  
*Where mentoring took place about once a month.*
- Every term  
*Where mentoring took place at least every term (but less than once a month)*
- Other (please specify)  
*Where the above categories do not adequately describe the pattern of mentoring meetings (e.g. extended but infrequent meetings). Please highlight and add additional details.*
- How many students (mentees) did each mentor meet with in a typical session?  
*Please select the best option for the number of mentees each mentor usually or typically met with in a mentoring meeting or session and highlight the relevant text in the attached document.*
  - Always or almost always one-to-one. (Please highlight the relevant text in the study report.)  
*Where mentoring is usually conducted between one mentor and one mentee in a meeting. Where no information is provided this can reasonably be inferred.*
  - Sometimes one to one, but not consistently.  
*Where meetings are usually one-to-one but occasionally or regularly involve more than one mentee. (Please highlight the relevant text in the study report.)*
  - Always or almost always one mentor to a small group of mentees (two to five students).  
*Where mentoring sessions are usually or typically organised as a small group of two to five mentees. (Please highlight the relevant text in the study report.)*
  - Almost or almost always one mentor meeting with more than five students.  
*Where the mentoring sessions were typically or almost always organised as a large group meeting of six or more mentees. (Please highlight the relevant text in the study report.)*
  - Unclear  
*Please only use this code if it cannot be reasonably inferred that mentoring was one-to-one. Please highlight the text that causes confusion or ambiguity.*
- Are details provided of what happened in mentoring meetings?
  - Yes
  - No
  - Unclear / Not specified
- Where did meetings take place? (Select main setting)  
*Please select the setting where meetings usually took place.*
  - In school  
*Where meetings typically took place on school premises.*
  - In the home  
*Where meetings usually took place in the mentee's home.*
  - In the community  
*Where meetings usually took place locally such as a community centre, church hall or other local amenity (but not home or school).*
  - By phone or online  
*Where meetings primarily took place remotely using communications technology such as by phone or online.*
  - Other (please specify)  
*Please use this code if the other categories are not applicable and use the info box to add further details as well as highlighting the relevant text in the study report.*
  - Not specified  
*Use this code when there is no information about where meetings took place and where it is not possible to make a reasonable inference about the location.*
- Was there academic content included in the mentoring programme?  
*Mentoring programmes can be hard to distinguish from tutoring approaches. This question aims to identify how much academic content and tutoring or teaching of the curriculum was included.*
  - No academic content or tutoring.  
*Please select this option and highlight the relevant text in the study report which best describes the level of academic content in mentoring activities. Academic content' concerns activities that seek to teach particular curriculum objectives (most likely subject content) as opposed to non-academic content, such as helping mentees develop general organisational, social-emotional and/or self-regulatory skills.*
  - Some academic content (but less than half of the sessions).  
*Please select this option and highlight the relevant text in the study report where there was some academic content or tutoring. Academic content' concerns activities that seek to teach particular curriculum objectives (most likely subject content) as opposed to non-academic*

content, such as helping mentees develop general organisational, social-emotional and/or self-regulatory skills.

- Mostly academic content.  
*Please select this option and highlight the relevant text in the study report which indicates the extent of the academic content or tutoring. Academic content' concerns activities that seek to teach particular curriculum objectives (most likely subject content) as opposed to non-academic content, such as helping mentees develop general organisational, social-emotional and/or self-regulatory skills.*

- Unclear/ not specified.  
*Please select this code if the extent of academic content or tutoring is unclear. Please highlight any relevant information in the study report.*

- Did the mentoring involve additional experiences?  
*Where the mentoring involved additional experiences for the mentee (such as trips or outings (such as to sports venues or museum trips) or work placements).*

- Yes
- No
- Unclear/ not specified

- What was the focus or goals of the mentoring programme? (Select all explicitly mentioned)  
*Select the code or codes which best describe the aims or goals of the mentoring programme.*

- Improving academic attainment or performance  
*Where there is a clear focus on improving academic attainment or performance such as school grades or school achievement.*
- Improving attendance  
*Where there is an explicit focus on improving attendance at school such as by reducing truancy or drop-out, including improving punctuality.*
- Preventing or reducing problem behaviours in school  
*Where an explicit aim is preventing or reducing problem behaviours in school such as aggression, violence or other behavioural challenges.*
- Improving social interaction or social competence  
*Where an explicit aim is improving social interaction or social competence such as communication skills or personal expression.*
- Preventing or addressing medical or psychological issues  
*Where the aim is to prevent or address particular individual pupils' medical or psychological issues (such as addiction, stress, anxiety, self-harm).*
- Improving career or employment aspirations and opportunities  
*Where the aim is employment related such as improving job or employment aspirations and opportunities (such as through goal setting, knowledge of work etc.)*
- Increasing motivation or raising aspirations  
*Where the focus of the mentoring is on increasing or improving motivation or raising aspirations about achievement in school.*

- Setting or streaming v.02 May 2021

*Strand specific code set for the Toolkit strand 'Setting or streaming'*

- What is the direction of the grouping change investigated? (Select one)  
*This records what kind of change is undertaken in the research. This could be moving \*from\* a system which is heterogeneously grouped (mixed attainment) with a wider spread of capability \*to\* a system in which teaching groups are based on the performance of the pupils (homogeneous groups, attainment groups or 'ability' groups) where there is a narrower spread of attainment in each teaching group. Or it might be moving \*from\* more homogeneous groups to more heterogeneous ('de-tracking' or \*from\* ability \*to\* mixed ability. Please highlight the relevant sections of the text and associate these with the coding.*

- Heterogeneous to homogeneous  
*From mixed attainment or mixed 'ability' classes to grouping to setting or streaming – also known as de-tracking.*
- Homogeneous groups to heterogeneous  
*From setting or streaming to mixed attainment.*
- Not specified/ unclear  
*Where it is unclear what the direction of the move is in the research or there is no information about what typically happens in schools where and when the research was done.*

- What kind of type of attainment grouping is involved? (Mark all that apply)  
*Select to codes which describe what kinds of grouping are involved in the study. Please highlight the relevant sections of the text and associate these with the coding.*

- Re-grouping or partial setting between classes  
*Heterogeneous or mixed attainment classes for some teaching but with pupils moving to different classrooms for more homogeneous classes for all or some areas of the curriculum (usually reading or mathematics in primary or elementary schools).*

- Which areas of the curriculum are taught in the re-grouped classes?
      - Literacy  
*Reading, writing or general literacy (the main language of instruction in the context of the research).*
      - Mathematics
      - Other (please specify)
      - Not specified/ Unclear  
*Where there are no details of what subjects of the curriculum taught in the homogeneous groups or these details are unclear. Please highlight or add notes about what details are included.*
    - Streaming or tracking  
*Where more homogeneous classes in separate classrooms are usually or permanently organized on the basis of the pupils attainment.*
    - Gifted and talented  
*Where very high attaining, exceptional or gifted and talented students are grouped together.*
  - What are the school or academic year groupings of pupils involved?  
*This code records whether there are pupils from a single school year groups or more than one school year group in the classes involved.*
    - Same age only  
*Only pupils born in the same school year are involved in the grouping.*
    - Cross age grouping  
*Where pupils born in different academic or school years are taught together, such as mixed age reading groups in primary/elementary schools. This is sometimes described as vertical grouping or non-graded classes in the US literature (where 'grade' refers to a year group).*
    - Promotion (younger with older)  
*This is where very high attaining pupils are taught with older pupils for some or all of their time in school. This is sometimes called acceleration, enrichment, promotion or grade skipping.*
  - How many grouping levels are there for attainment?  
*How many bands or levels are used in assigning pupils to groups by their performance or attainment?*
    - 4 groups  
*Four levels of attainment (e.g. (e.g. SEN, Low, Average High or Low Average High Exceptional)*
    - 3 groups  
*Three groups or bands of attainment (e.g. High, Average, Low or XYX classes in some US studies)*
    - 2 groups  
*Two bands or levels (High and Low or Average and Exceptional (for gifted and talented studies).*
    - Other (please specify)  
*Where a different number of bands or levels is used.*
    - Not specified/ Unclear  
*Please only use this code if there is confusing or contradictory information in the study report. Please highlight the text which gives rise to the confusion.*
  - Do all pupils follow the same curriculum in the different attainment groups?  
*In some approaches the different groups follow or are taught a different curriculum or curricular track. This is often the case for acceleration approaches, but is also sometimes a specific feature of other approaches, such as in classes for low attainers.*
    - No - different curriculum  
*Use this code to indicate that the different groups or tracks follow a different curriculum with different materials and different curriculum content. One example is acceleration where pupils study a more challenging curriculum. Another example is cross age or non-graded classes where each group or class is taught different content.*
    - Yes - same curriculum  
*Use this code where all groups study the same curriculum. This is usually the case in within class attainment grouping, and often still the case in set or streamed classes. All groups study the same curriculum content, but at different levels.*
    - Unclear/ Not specified  
*Please use this code if there is no information about the curriculum content and a reasonable inference cannot be made. In most situations the same curriculum content is followed. Please highlight any details in the text of the study report.*
  - Does the approach have a specific name or description?  
*Please indicate whether the grouping or setting approach has a name*
    - Yes (please specify)  
*Please highlight and add the name in the info box.*

- No
- How are pupils assigned to groups?  
*Please indicate on what basis the pupils are assigned to the different attainment groups.*
  - Using test results (please add details)  
*Please indicate if selection is undertaken on the basis of testing and add details about what kind of test was used.*
  - By the teacher(s)  
*Where the assignment is based on teachers' judgement.*
  - Other (please specify)  
*Please provide information about how pupils are assigned to attainment groups.*
  - Not specified/ Unclear  
*Where there are no details or confusing information about the selection method. Please highlight the relevant sections of text which lead to any confusion.*
- Repeating a Year v.01 July 2019  
*Strand specific codeset for the Toolkit strand "Repeating a Year"*
  - How are retained students identified for the research?  
*This code considers the sample identified by the researchers and whether this the pupils' year groups or grades are specified or if we can't tell which grades were retained.*
    - A specific year group/groups or grade/grades for retention are identified in the research
    - Mixed year groups or grades  
( i.e. there no specific year or grade of retention identified)
  - How old were the pupils when they were retained? (Mark all that apply)  
*Please specify the age or age ranges of the pupils at the point at which the retention decision was made. For example if pupils repeat Grade 1 they were retained in Grade 1 when 5-6 years old.*
    - 3 – 7 years  
(Pre-Kindergarten to Grade 2) (pre-primary, primary or elementary schools)
    - 8- 11 years  
(Grade 3 to Grade 6) (primary, elementary or middle schools)
    - 12 years or older  
(Grade 7+) (Middle, secondary or high school)
    - Not clear/ unspecified (please add any details)
  - On what basis were students selected for retention by the schools?  
*What means was used to identify pupils who had to repeat a year?*
    - A formal test or assessment
    - Teacher assessment, teacher judgement or grades
    - Other (please specify)
  - How long after retention is the impact measured?  
*Please check the coding instructions in the comments box for the time point(s) for this data extraction. Many studies for this strand will have data extracted several times.*
    - 1 year
    - 2 years
    - 3 years
    - 4 years
    - 5 years
    - 6 years
    - 7 years
    - 8 years
    - Other (Please specify)
    - Multiple (mixed sample)
  - How many times were students retained?  
*Did students have to repeat more than one year?*
    - Once
    - Twice
    - At least once, but unspecified
    - Other (please specify)
  - Who are retained students being compared with? (Please select all that apply for this data extraction)  
*This can be challenging to identify in some studies. Please check with the team if unsure. Please check the coding instructions in the comments box for the time point(s) for this data extraction. Many studies for this strand will have data extracted several times.*
    - Promoted 'regular' students
    - Promoted similar students (low attaining or 'underachieving' students)
    - Promoted matched students (where specific characteristics are used to identify a specific match)
    - Grade equivalent scores

- Other (Please specify)
- If retained students were matched with a promoted counterpart which characteristics are used for the matching ? (Please select all that apply)
  - Achievement test score
  - Age
  - Attendance
  - Ethnicity
  - Free school meals (FSM) Reduced price/ free lunch
  - Gender
  - IQ/ Cognitive tests
  - Language status (e.g. ESL, E2L)
  - Socio economic status (SES) including parental income
- Comparison
  - Same age  
*(Where retained and promoted students are compared on an outcome measure during the same academic year – at the same point in time).*
  - Same grade  
*(Where retained and promoted students are compared with the same grade measurement, but not at the same time. For example if the retention decision was made in 1st grade, then the performance of promoted students the following year (at the end of their 2nd grade) is compared with the performance of the retained students another year later, when they are at the end of their 2nd grade).*
- Are the comparison group from the same school as the retained students or a different school (or somewhere else)?
  - Same school
  - Different school
  - Grade equivalent scores (population comparison)
  - Other (please specify)
  - Unclear/ not provided
- Mastery learning v .01 October 2019  
*Version 1.0 of the strand specific data extraction criteria for mastery learning criteria, from October, 2019.*
  - Which educational theorists or approaches to mastery are mentioned as underpinning the approach in the research (mark all that apply)?  
*This question aims to identify any theoretical influences on the mastery learning approach reported in the study. Please indicate all that are mentioned as influencing the design or approach. Please do not just list all authors mentioned in the study, unless they are acknowledged as influencing the mastery learning approach being researched.*
    - Ark's Mathematics Mastery and/or Helen Drury's Mastering Mathematics  
*Ark's Mathematics Mastery was developed in collaboration with mathematics leaders in ARK primaries and secondaries in the UK. It arose from Helen Drury's 'Mastering Mathematics' approach (2015), which in turn was inspired by approaches to teaching mathematics in Singapore and Shanghai.*
    - Benjamin Bloom and/ or Bloom's Learning for Mastery  
*Approaches to mastery learning based on the ideas of Benjamin Bloom dating back to his work in this area, such as 'Learning for Mastery' (1968).*
    - James H. Block and/or L.W. Anderson and/or Group-Based Learning for Mastery  
*Approaches to mastery based on the work of Block (1971) or Anderson which emphasise group-based or collaborative approaches.*
    - John B. Carroll and/ or Carroll's Model of School Learning  
*Carroll (1963) proposed a model of learning which was defined as function of efforts spent in relation to efforts needed. His model differs from Bloom's by seeking equality of opportunity to learn in terms of aptitude and support provided, but not necessarily equality of attainment.*
    - Siegfried Engelmann and/or Wesley C. Becker and/or Direct Instruction and/or DISTAR  
*Approaches to mastery learning which mention Engelmann and/or Becker and/or Direct Instruction and/or DISTAR (Direct Instruction System for Teaching Arithmetic and Reading) DISTAR, this gained prominence during 'Project Follow Through', one of the largest educational studies ever conducted in the US.*
    - Fred S. Keller and or the Keller Plan and/or Keller's Personalized System of Instruction (PSI)  
*The Keller Plan was first described by Fred Keller in 'Good Bye Teacher' (1968). It is made up of of small self-paced modularized units of instructions where study guides direct learners through the modules. Unit tests are given on each module where the learners must show mastery by scoring at least 90%. Mastery learning requires that the desired student performance be stated precisely using performance or learning objectives.*
    - Shanghai maths and/or Bianshi theory  
*Approaches to mastery based on or inspired by mathematics teaching in Shanghai. Bianshi*

*theory is an approach to teaching mathematics based on teachers using systematic variation to ensure pupils all make progress. The Shanghai Maths Project 'One Lesson, One Exercise' is a mathematics programme covering the maths curriculum for England, published by Collins and inspired by this approach.*

- Singapore maths  
*Singapore developed a new approach to teaching maths in the early 1980's. The Ministry of Education aimed to take the best practice research findings from the West (including ideas from Bruner, Skemp, Piaget, Vygotsky and Dienes), the approach is an amalgamation of a range of teaching methods and resources.*
- B. F. Skinner and/or Programmed Instruction  
*Programmed Instruction was developed by B. F. Skinner in the 1950s when he and J. G. Holland began applying programmed instruction at Harvard. It involves self-paced, self-administered instruction, which is presented in a logical sequence and with multiple content repetitions. Skinner argues that learning can be accomplished if the content is divided into small, incremental steps, and if learners get immediate feedback, reinforcement and reward. It was initially applied through "teaching machines", and then developed with computer-assisted-instruction.*
- Carleton Washburne and/or the Winnetka plan  
*Although this approach pre-dates the formal use of the term 'mastery', the Winnetka Plan was an educational experiment in Illinois in the early 1900s. It was developed by Carleton Washburne and inspired by John Dewey's work in the University of Chicago Laboratory School. The plan aimed to expand educational learning to creative activities and emotional and social development, using a program of a type that later became known as "programmed instruction." The curriculum was divided subjects into "common essentials" and "creative group activities." Common essentials required students to demonstrate mastery to advance, whereas creative activities allowed students to progress at different rates with no strict goals or standards of achievement.*
- Other (please add notes)  
*Please add more details if other theories or approaches are mentioned in the development of the mastery learning approach adopted in the study.*
- None mentioned  
*Please use this code if there is no mention of any theoretical underpinning or approach.*
- How are the learners grouped for mastery learning in terms of age? (Please mark all that apply.)  
*Here we are interested the age-related grouping of the learners.*
  - Same age (i.e. pupils from the same school year)  
*Pupils of the same age (i.e. only pupils from the same school year) are taught together.*
  - Mixed age (i.e. pupils from different school years)  
*Pupils from different school years are taught together.*
  - Unclear/ confusing  
*Please only use this code if the grouping by age is not clear. Please assume that, if there is no age grouping specified in the study, pupils are taught in their usual age or year groups. Please add notes if you select this code to identify where or how the confusion arises.*
- How are the learners grouped for mastery learning in terms of ability? (Please mark all that apply.)  
*Please indicate how homogeneously or heterogeneously learners are grouped for the mastery learning activities, in terms of how they are assessed or evaluated by their school or for the research in terms of their ability or attainment.*
  - Mixed attainment / heterogeneous grouping  
*This is where pupils are grouped without regard to their prior attainment or academic ability (and without selective admission to the school on the basis of attainment or academic ability).*
  - Grouping by attainment or ability / homogeneous grouping  
*This is where pupils are selected on the basis of their educational attainment or ability into classes, sets or groups so that the range of attainment is more homogeneous. This could be for low, middle or high attaining pupils (see below).*
  - If grouped by attainment or ability, what was the type of grouping? (Select all that apply.)
    - High attainers/ ability  
*Where pupils are selected for mastery learning on the basis of high performance.*
    - Average attainment/ ability  
*Where the group is limited to those in the middle range of attainment.*
    - Low attainment/ ability  
*Where one or more of the mastery learning groups is restricted to those performing below average.*
    - Special educational needs (SEN/ SEND) (please add details).  
*Where one or more groups for the mastery learning intervention are identified on the basis of a particular need or needs (please highlight details in the text where relevant).*

- Unclear/ confusing  
*Select this option only if it is clear that there is some kind of grouping to limit the range of attainment or ability in the groups adopting mastery learning (ie you have selected 'Grouping by attainment' above but that there is insufficient information or there is confusing information about the nature of the basis on which pupils were selected.*
  - At what level are the mastery goals set? (Select all that apply)  
*The learning objectives or mastery learning goals should be clearly specified and set for either individuals or groups (or both) in the classes involved.*
    - For individuals  
*Please select this option if this is specified or is implicit. Most approaches to mastery learning adopt individual level goals or targets. These may be assigned to groups or batches of pupils, but this is for convenience only and the pupils work on their own to achieve their own goals.*
    - Collaborative groups  
*Please select this option if the objectives (or targets or goals) are set for groups of of pupils working together. It should not be used where pupils sit in groups, but work on individual tasks and goals.*
    - Unclear/ confusing (Please add details.)  
*Please only use this code if there is some confusion about at what level the mastery learning goals are set and highlight the text to indicate where or why there is confusion.*
  - Are there details about the testing procedures to assess mastery?  
*In a mastery learning approach the goals are usually assessed frequently, often through testing or self-assessment. Summative tests to assess mastery are usually required before students are allowed to progress to the next set of objectives.*
    - Yes (please add details)  
*Please highlight in the text where information is provided about how mastery is assessed in the study or the approach adopted in school.*
    - No/ unclear  
*Please use this code both where no information is provided and where there is confusing or unclear information. If the information is unclear, please highlight or add a note about what causes the confusion.*
  - Are details of the feedback and corrective procedures provided?  
*Mastery learning usually includes feedback and/ or procedures to support the development of mastery either through corrective procedures (such as marking) or by assigning further practice or other activities. Please highlight information in the text where possible.*
    - Yes (please add details or highlight in the text)  
*Please select this option if there is information about the feedback process involved in the mastery learning approach and the steps that the teacher or learners take to improve the learning.*
    - No/ unclear  
*Please use this code if there is no mention of either the feedback or the corrective procedures (that the teacher or learners take) and highlight the text or add notes to indicate what causes any confusion.*
  - What level of mastery is set or specified?  
*In a mastery learning approach a high level of success in achieving the learning outcomes is usually specified.*
    - 90% or above  
*Where the threshold for mastery is set at 90% success or above.*
    - 80% (between 80% and 89%)  
*Where the mastery threshold is set at 80% mastery (but less than 90%).*
    - Other (please specify)  
*Please use this option when there is a set or specified threshold for mastery but this is less than 80% or is specified in a different way (e.g. criterion or standards-based mastery). Please highlight the details in the text.*
    - None / Not specified / Unclear  
*Where there is no threshold for mastery set or the criteria for mastery are not specified, or are unclear (please highlight text relating or any lack of clarity in relation to the mastery criteria).*
- Parental engagement v.01 November 2019  
*First draft of the strand specific data extraction tool for studies involving parental engagement.*
  - Who was involved? (Select one)  
*This section aims to identify who was involved from the family. Please highlight the details in the text where possible.*
    - Parents (unspecified)  
*Where parents and/or carers are involved but there is no further information about who they are.*

- All or both parents  
*Where the study explicitly tried to reach all or both parents and/or carers of the children involved.*
  - Mothers only  
*Where mothers only and/or female carers were specified.*
  - Fathers only  
*Where fathers only and/or male carers were specified.*
  - Wider family involvement  
*Where parents (and/or carers) and other family members are included, such as siblings, grandparents or other relatives.*
  - Other (Please specify)  
*For other kinds of parental engagement.*
- Where did the activities mainly take place (Please select only one if possible)  
*This section aims to identify the setting where the activities mainly took place. Please highlight the details in the text where possible.*
  - Home  
*In the home or usual family setting.*
  - School  
*Where activities mainly took place in the school the children usually attend.*
  - Community centre or other local setting  
*Where the activities took place mainly outside of the home and school.*
  - Other (Please specify)
- Did the programme of approach involve training for the intervention or approach?  
*Please highlight relevant text in the study report where possible.*
  - Yes
  - No
  - Unclear/ not specified  
*If it is unclear whether training took place please highlight in the text what causes the confusion.*
- Did the programme or approach involve ongoing support?  
*Please highlight relevant text in the study report where possible.*
  - Yes
  - No
  - Unclear/ not specified  
*If it is unclear whether there was ongoing support, please highlight in the text what causes the confusion.*
- Whose children did the parents work with?  
*In this section we are looking for information about which children the parents were involved in supporting.*
  - Their own children only
  - Their own children and other children
  - Other children only (not their own)
  - Unclear / not specified  
*Please highlight the text which causes any confusion where the answer is unclear.*
- What was the focus of the engagement? (Mark all that apply and highlight the relevant text where possible)  
*In this section we are looking for information about what the intended outcomes of the programme or approach were.*
  - Reading/ early literacy
  - Homework  
*Where the approach is described as supporting children's completion of, or engagement with homework.*
  - Improving children's social skills or behaviour  
*Where the focus of the parental engagement is on non-academic outcomes.*
  - Parenting skills (being a better parent)  
*Where the focus is on improving or developing parents skills in looking after their children.*
  - Parents' personal skills (e.g. literacy, digital technology, employability)  
*Where the focus is on developing parents' own skills.*
  - General volunteering  
*Where the focus is on the parents being more generally involved in supporting the school.*
  - Other  
*Please highlight the relevant text in the report of the study, where possible, and add brief keywords to the info box.*
- Outdoor adventure learning v.01 November 2019
  - What type of programme is being evaluated? (Please mark one only)

- Expedition based  
*(camping/ sailing) such as wilderness experience/ Outward Bound*
- Basecamp  
*outdoors in the wild*
- Residential  
*Outdoor centre buildings*
- Day visits/ trips
- Other (Please specify)
- Unclear/ not specified
- What kind of activities are involved? (Mark all that apply)
  - Survival skills
  - Rope skills/ climbing
  - Camping
  - Hiking
  - Sailing
  - Canoeing
  - Skiing/ Winter climbing
  - Other (Please add details)
  - Unclear/ not specified
- What are the broad aims of the programme? (Please mark one only)
  - Therapeutic  
*e.g. addressing behavior issues of those who have suffered abuse*
  - Educational/ developmental  
*including personal and social development, leadership etc.*
  - Recreational  
*holiday programmes*
  - Other (Please add details)
  - Unclear/ not specified
- How is the population described? (Please mark one only)
  - Normal
  - Suffered abuse  
*Physical, sexual, substance*
  - Problematic behaviours  
*social/ emotional, behavioural, criminal youth justice, 'delinquent', inpatient*
  - Other (Please add details)
  - Unclear/ not specified
- Individualised instruction v .01 November 2019
  - Which of the following were involved in the individualized approach? (Mark all that apply and highlight the relevant text where possible)
    - Individual work  
*i.e. work assigned to the individual*
    - Individual pace  
*e.g. self-paced, or working alone*
    - Individual feedback  
*marking, comments or other feedback given individually*
  - Are any of the following included in the approach? (Mark all that apply and highlight the relevant text where possible)
    - Collaboration  
*e.g. group goals*
    - Peer feedback
    - Digital technology
    - Pre-testing of content  
*to assign correct level*
    - Testing for mastery
    - Self-checking/ self-marking  
*e.g. looking up answers*
  - Are any of the following mentioned as being involved in the approach? (Mark all that apply and highlight the relevant text where possible)
    - Mastery learning
    - Personalized System of Instruction (Keller)
    - Programmed instruction
    - Individually Prescribed Instruction (IPI)
    - Program for Learning in Accordance with Needs (PLAN)
    - Computer-assisted instruction
    - Audio-tutorial instruction

- Intelligent tutoring
- Social and emotional learning v .01 January 2020
  - Who was involved? Select all that apply  
*This section aims to identify who was involved from the school. Please highlight the details in the text where possible.*
    - All pupils  
*Where all of the pupils in a class or cohort were involved in the intervention or approach*
    - Targeted groups of pupils or identified individuals  
*Where specific children or young people were selected on the basis of particular need*
    - Specific classes in a school  
*Where the intervention or approach involved only some classes in a school*
    - Whole school  
*Where the intervention or approach involved all classes in a school (even if not all were involved in the collection of data)*
    - Classroom teachers  
*Where the pupils' usual teachers were involved in the programme*
    - Other staff in the school(s)  
*Where other staff usually working in the school were involved in the intervention or approach*
    - Outside experts or specialists  
*Where professionals other than those usually working in the school were involved in the intervention (such as researchers or programme developers).*
    - Other (Please specify)
  - What was the main focus of the programme? (Please select only one if possible)  
*This section aims to identify the key driver for the intervention or approach. Please highlight the details in the text where possible.*
    - Improving social interaction  
*Such as improving, collaboration, teamwork, or relationships in school*
    - Reducing antisocial or problematic behaviour  
*Such as violence, aggression, behavioural issues, substance abuse, sexual health etc.*
    - Developing individual social and emotional capability  
*Such as a positive self-image, resilience, character or emotional intelligence or addressing mental health*
    - Academic achievement  
*Where the primary goal is to improve learning outcomes*
    - Other (Please specify)
  - Where did the activities mainly take place (Please select only one if possible)  
*This section aims to identify the main setting driver for the intervention or approach. Please highlight the details in the text where possible.*
    - School  
*Where activities mainly took place in the school the children usually attend*
    - Home  
*In the home or usual family setting*
    - Community centre or other local setting  
*Where the activities took place mainly outside of the home and school*
    - Other (Please specify)
- Arts Participation v .01 January 2020
  - What was the focus of the Arts participation programme or approach? (Please select all that apply)  
*This question aims to identify what aspects of the arts were involved in the programme or approach. Please highlight the details in the text where possible.*
    - Multi-component or integrated programme (if selected please also select from the areas below)  
*This is where a number of arts components are involved or integrated into the programme or approach. (Please highlight text or add details to the info box.)*
    - Music  
*Such as singing (individual or choral), rhythm work (tapping, following a beat), playing an instrument (including , composing, improvising, performing or actively listening to music (not just background music). This includes specific music education approaches such as Orff, Kodaly, Suzuki or Dalcroze. (Approaches like Dalcroze Eurythmics or Kodaly's use of solfege should be classified as music as this is the focus of the programme, though they include rhythmic movement.)*
    - Dance  
*From ballet to ballroom, classical to contemporary, jazz, tap, folk and hip hop – all forms of rhythmic movement, usually to music. (Approaches like Dalcroze Eurythmics or Kodaly's use of solfege should be classified as music as this is the focus of the programme, though they include rhythmic movement.)*

- Drama  
*Such as watching (theatre trips), performing, writing for performance, improvisation, role-play, drama workshops.*
- Visual or other Fine arts  
*Painting, drawing, sculpture, pottery, film, digital arts.*
- Other (Please specify)  
*Please highlight text or add details to the info box.*
- Who was involved in the delivery or teaching of the intervention or approach? (Please select all that apply.)  
*This question aims to identify who was involved in the teaching or delivery of intervention or approach. (Please highlight the details in the text where possible.)*
  - Classroom teachers  
*Where the pupils' usual teachers were involved in the programme.*
  - Other staff in the school(s)  
*Where other staff usually working in the school were involved in the intervention or approach. Please highlight or add details to the info box.*
  - Outside experts or specialists  
*Where music or arts specialists, other than those usually working in the school, were involved in the intervention (such artists in residence, composers, including researchers).*
  - Other (please specify)  
*Please highlight text or add details to the info box.*
- Where did the activities mainly take place? (Please select only one if possible.)  
*This section aims to identify the main setting driver for the intervention or approach. (Please highlight the details in the text where possible.)*
  - School  
*Where activities mainly took place in the school the children usually attend.*
  - Specialist arts venue  
*Such as a theatre, concert hall, gallery, studio or museum. (Please highlight text or add details to the info box.)*
  - Other (Please specify)  
*Please highlight text or add details to the info box.*
- Phonics v .01 January 2020
  - What is the target population for the phonics approach? (Please select one)  
*The aim is to distinguish the target population for the study in terms of the goals of the phonics approach. Please highlight the relevant sections of text where possible and/or add notes to the info box where the description is unclear.*
    - Universal  
*All children in the class or are taught with the approach involving and the class represents the full range of pupils typical for that setting. Please highlight the relevant sections of text where possible and/or add notes to the info box where the description is unclear.*
    - Low attaining  
*Where children are at risk of falling behind, but have no special designation or diagnosis. Please highlight the relevant sections of text where possible and/or add notes to the info box where the description is unclear.*
    - Children identified as having special or particular needs  
*Where the pupils involved or targeted are identified as having particular needs, such as special educational needs, or in older studies what we recognize now as pejorative terms such learning disabled, or even 'retarded' or 'deficient'. Please highlight the relevant sections of text where possible and/or add notes to the info box where the description is unclear.*
  - Which of the following are mentioned as constituent parts of the phonics approach? (Please select all that apply).  
*The aim is to identify what kind of phonics forms the basis for the intervention or approach. This should be taken from the description of the intervention (rather than the rationale for the approach) and should relate directly to the teaching approach and task or activities involved). Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
    - Synthetic phonics  
*Separate sounds from written letters in words are put together (synthesized) or 'blended' to read words out loud. The written letter (grapheme) sound correspondence. The overall approach can be characterized as part to whole (word). Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
    - Systematic phonics  
*Where there is a planned progression in letter sounds that is taught exhaustively ('systematically'), starting with simpler combinations and moving on to more complex patterns.*

*Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*

- **Analytic phonics**  
*The starting point is a whole word, which is broken down (analysed) into its constituent sounds. This often starts with the initial letter or sound ('onset') and final sound or ending of the word ('rime'). Sometimes this approach can be referred to as implicit phonics. The overall approach can be characterized as whole (word) to part. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Analogy phonics or analogy-based phonics**  
*In this approach, children are taught to use parts of words they have already learned to read and decode words they don't know. They apply this strategy when the words share similar parts in their spellings, for example, reading "train" by analogy to "rain". This approach is usually seen as a sub-set of analytic phonics (whole (word) to part – with part recognized by analogy). Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Embedded phonics**  
*This involves instruction in the sound-symbol correspondences which are identified during 'authentic' reading experiences. These tend to be incidental and used mainly to inform or explain, rather than as a systematic teaching strategy. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Phonemic awareness**  
*Developing phonemic awareness involves recognising and manipulating phonemes (sounds) in words. This implies tasks for recognizing sounds or phonemes in words, blending phonemes together to form words, segmenting a word into its phonemes, eliminating a phoneme from a word, or adding a phoneme to a word. Tasks are presented and practiced through speaking and listening activities (orally). Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Phonological awareness**  
*Phonological awareness usually taken to mean a broad skill of discriminating sounds in spoken language that includes the ability to identify and manipulate these sounds orally. It usually therefore involves parts of words, such as syllables, and onsets and rimes. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Onset - rime**  
*These terms are used to describe the phonological parts of a spoken syllable. In a word such as cat or chat, the onset, consists of the initial consonant or consonant digraph or blend, (such as 'c' or 'ch') and the rime which usually consists of the vowel and any final consonants (such as '-at'). Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Syllable instruction**  
*Involves identifying the different spoken or written parts of words so that pupils have strategies for chunking words into manageable parts for reading or spelling. There are generally thought to be six types of syllables, though phonological (spoken word) and orthographic (written word) approaches differ in their terminology and emphasis. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Sight vocabulary**  
*A child's sight vocabulary is words that a child can immediately recognise without any use of decoding strategies. A learner is able to identify these words without prompting, they are sometimes referred to as high-frequency words. Approaches like flash cards are often used to teach words in this approach. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **Whole word**  
*The whole word approach to literacy instruction teaches learners to recognise and read complete words without breaking them down into sounds or letter groupings. Approaches like flash cards are often used to teach words in this approach. Please highlight the relevant sections of text where possible and/or add notes to the info box where aspects of the approach are unclear.*
- **How central is phonics to the overall approach to teaching literacy?**  
*The aim here is to identify how the phonics instruction relates to wider aspects of literacy in the context of the research. Please highlight the relevant sections of text where possible and/or add notes to the info box where the role of phonics in relation to literacy teaching is unclear.*

- Phonics instruction only  
*Where the only teaching and activities used are phonics activities (focusing on written letters and spoken sounds with no other kinds of literacy activities).*
- Phonics as the central or main approach  
*Where the phonics activities (focusing on letters and sounds) form the main approach to teaching literacy (such as phonics-based reading books) with only occasional additional activities (e.g. book sharing)*
- Phonics as supplemental or additional to the usual approach to teaching literacy.  
*Where additional activities are introduced to provide extra support for reading, but other approaches to teaching literacy are the main*
- Does the approach involve parents?
  - Yes
  - No
- Does the approach involve digital technology?
  - Yes
  - No
- Collaborative learning v .01 February 2020
  - Are any of these researchers or approaches specified in the definition or explanation of the collaborative learning approach?  
*(Please select the best overall match. NB this is the approach that the intervention described in the report is based on, NOT all of the approaches mentioned or described in the literature review.)*  
*(Please highlight the relevant text.)*
    - Aronson: JIGSAW groups or Home/Expert groups
    - Slavin: Student Team Learning (STL) or Student-Teams-Achievement Divisions (STAD) or Team Games Tournament (TGT) or Team Assisted Individualisation (TAI)
    - Slavin & Madden: Cooperative Integrated Reading and Composition (CIRC)
    - Sharan and Sharan: Group investigation model
    - Mercer and Wegerif: Thinking together
    - Other (please specify)
    - No research basis mentioned
  - What was the size of the groups that the pupils worked in?  
*(Please mark all that apply where a range is provided.)*
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7
    - 8
    - More than 8
  - What kind of collaboration occurred during the tasks or activities?  
*(Please mark all that apply and highlight the relevant text.)*
    - Peer collaboration on the task or during the activities, AND with a joint collaborative outcome AND with the same groups throughout  
*(e.g. working together to produce a joint class presentation)*
    - Peer collaboration during the task or process of the activity AND with a joint collaborative outcome BUT with different collaborative groups at different stages of the activity  
*(e.g. JIGSAW groups or Home/Expert groups)*
    - Peer collaboration during the tasks or activities, BUT with an individual outcome  
*(e.g. having talk partners discussions about each individual pupil's separate writing which is assessed individually or approaches like STL (Student Team Learning) or STAD (Student-Teams-Achievement Divisions) or TAI (Team Assisted Learning)*
    - No peer collaboration on during the process of the task or activity AND with a co-operative outcome  
*(e.g. each pupil contributes an individual chapter to a book or a section of a wiki).*
  - Was there any student or peer collaboration in the assessment or evaluation of the task after it was completed?
    - Yes (Please highlight the relevant text.)
    - No
  - Were there Extrinsic rewards for the outcome?  
*(e.g. points, prizes, scores)*
    - Yes (Please highlight the relevant text.)
    - No
  - If yes, were these rewards:

- Individual rewards for group performance? (Please highlight the relevant text.)  
(e.g. *individual marks or grades assigned on the basis of overall group performance*)
  - Individual rewards for individual performance? (Please highlight the relevant text.)  
(e.g. *individual marks or grades on each individual's performance - regardless of any collaboration or co-operation*)
  - Group rewards for group performance? (Please highlight the relevant text.)  
(e.g. *team prize for team's collaborative outcome*)
  - Group rewards for individual performance? (Please highlight the relevant text.)  
(e.g. *team prize for combined improvement scores of team members*)
  - Other (Please highlight the relevant text.)
- Was there a competitive element?  
(e.g. *groups work together, but teams are in competition*)
  - Yes (Please highlight the relevant text.)
  - No
- Is there information about the teacher's role during the collaborative activities?
  - Yes (Please highlight the relevant text.)
  - No
- Were pupils given feedback about their collaborative skills?
  - Yes (Please highlight the relevant text.)
  - No
- If yes, who provided the feedback?
  - Teacher
  - Students
  - Other (Please highlight the relevant text.)
- Reducing class size v .01 March 2020
  - What is the typical or average size of the small classes?  
(Please highlight the relevant text and specify the number in the info box.)
  - What is the typical or average class size of the larger classes?  
(Please highlight the relevant text and specify the number in the info box.)
  - How many teachers were assigned to the smaller classes?  
*If this is not specified please assume one teacher per class.*
    - 1
    - 2
    - More than 2
  - How many teachers were assigned to the larger classes?  
(Please highlight the relevant text.) *If this is not specified please assume one teacher per class.*
    - 1
    - 2
    - More than 2
  - Were there any adaptations made to support the larger classes (such as additional teaching assistants or other support)?  
(Please highlight the relevant text.)
    - Yes
    - No
  - Was the class size reduction implemented for a limited number of subjects (e.g. reading and maths)?  
(Please highlight the relevant text.)
    - Yes
    - No
  - Was the class size reduction implemented for all or most lessons across the curriculum?  
(Please highlight the relevant text.)
    - Yes
    - No
- Homework v .01 Sept 2020
  - Is there information about how long students spent on homework?
    - Yes (Please highlight the relevant text in the study report)
    - No
  - If yes, what was the total time in hours per week?  
*Please add this information to the info box. NB please only use numerals in this box, convert to number of hours per week as a decimal (i.e. 2 and a half hours would be 2.5 hours).*
  - Who was involved in the homework programme? (Select all that apply.)
    - Individual students working on their own
    - Students working together (collaborative homework)
    - Parents or other family members.
  - If parents or other family members were involved, please describe their role. (Select all that apply and highlight the relevant text in the study report.)

- Direct help or involvement with the homework  
*e.g. reading together or help with spellings/ times tables or the completion of the tasks or assignments*
  - Encouragement and general support  
*e.g. discussing the homework, providing a space to work*
  - Monitoring/ checking completion  
*e.g. homework diaries or reports*
- Where was the homework completed? (Select all that apply and highlight the relevant text in the study report.)
  - At home
  - At school  
*e.g. a homework club*
  - In another setting  
*e.g. library or community setting*
  - Not specified / Unclear
- Is there information about how the homework was marked or responded to?
  - Yes (Please highlight the relevant text in the study report)
  - No
  - Unclear
- School uniform v .01 Sept 2020
  - Are there any details of the uniform or dress code policy in terms of what clothes are required or expected?
    - Yes (please highlight the relevant sections of text in the study report).
    - No
  - Was the school uniform policy mandatory or voluntary?
    - Mandatory  
*Please highlight the relevant sections of text in the study report*
    - Voluntary  
*Please highlight the relevant sections of text in the study report*
    - Unclear/ No information
  - Is there any information about the cost of the uniform to parents?
    - Yes  
*Please highlight the relevant sections of text in the study report*
    - No  
*Please highlight the relevant sections of text in the study report*
  - Is there any information about how the school uniform policy was enforced?
    - Yes  
*Please highlight the relevant sections of text in the study report*
    - No
  - Did the school uniform policy have an impact on attendance?
    - Yes  
*Please highlight the relevant sections of text in the study report*
    - No  
*Please highlight the relevant sections of text in the study report*
    - Not mentioned
  - Did the school uniform policy have an impact on student behavior (e.g. suspensions, exclusions)?
    - Yes  
*Please highlight the relevant sections of text in the study report*
    - No  
*Please highlight the relevant sections of text in the study report*
    - Not mentioned
- Performance pay v.01 Nov20  
*Strand specific codeset for Performance pay studies.*
  - What were the criteria for the reward or incentive? (Please select all that apply)  
*These are whose outcomes or performance is used to evaluate success.*
    - Teacher performance (e.g. observation or portfolio based - please highlight the relevant text)  
*Where the performance criteria focus on the teacher.*
    - Pupil performance (e.g. test or examination results) - please highlight the relevant text)  
*Where the criteria for evaluation of successful performance focus on pupils' or students' achievement.*
    - Not specified/unclear (Please highlight the relevant text if unclear)
    - Other (please specify and please highlight the relevant text)
  - Who received the reward or incentive?  
*This focuses on the recipient or recipients of the performance pay award.*

- Individual reward to the teacher (please highlight the relevant text)  
*Where an individual teacher is rewarded for performance.*
  - Group or team reward to teachers (please highlight the relevant text)  
*Where the performance of groups or teams of teachers are rewarded.*
  - Headteacher or senior management (please highlight the relevant text)
  - Other (please specify and please highlight the relevant text)
- What was the timing of the incentive?
  - Payment by results (i.e. a retrospective reward or payment contingent on test scores)
  - Payment up front  
*A advance payment (i.e. a prospective incentive or payment which has to be returned if targets are not met (sometimes called loss aversion)).*
  - Other (please specify and please highlight the relevant text)
- What type of incentive or reward was offered?
  - A one off payment (please highlight the relevant text)
  - An increase in salary (please highlight the relevant text)  
*Such as threshold salary payments.*
  - Other (please specify and please highlight the relevant text)
- What was the amount of the incentive or increase in salary? (Please highlight the relevant text and add the incentive amount and currency into the info box)
- Over what time period was teacher performance evaluated?
  - Less than one school year  
*Such as one or two terms, or one semester.*
  - One school year  
*Where typically teachers are evaluated on the progress of their class.*
  - More than one school year  
*Where performance is monitored over a period longer than one academic year.*
- Physical activity v.01 December 2020  
*Strand specific data extraction tool for Toolkit studies identified as relevant for the Physical activity strand.*
  - When did the physical activity take place? (Mark all that apply and highlight the relevant text in the document if possible)
    - During the school day
    - Before or after school
    - During the holidays
    - Other (please specify)
  - Which lessons included the physical activity? (Mark all that apply and highlight the relevant text in the document if possible)
    - Timetabled physical education (PE) lessons
    - Additional lessons
    - Cross-curricular (i.e. included in other lessons)
    - Break time or lunchtime (during the school day)
    - Other (please specify)
  - What type of physical activity was involved? (Mark all that apply and highlight the relevant text in the document if possible)
    - Increased activity (e.g. movement during the day tracked with an accelerometer)
    - Exercises (e.g. aerobics, calisthenics)
    - Dance and/or rhythmic movement
    - Weights or resistance training
    - Sports/games (e.g. football, playground games)
    - Other (please specify)
  - What was the level of exercise? (Select one and highlight the relevant text in the document if possible)
    - Very light or Light (e.g. walking/ little effect on breathing)
    - Moderate (e.g. jogging/ breathing harder)
    - Hard or Very hard (sprinting/ getting out of breath)
    - Not specified/ unclear
- Within-class grouping v.01 May 2021  
*Strand specific codeset for 'Within class attainment grouping'*
  - What is the direction of the grouping change investigated in the research?  
*This records what kind of change is undertaken in the research. This could be moving \*from\* a system which is heterogeneously grouped (mixed attainment) with a wider spread of capability \*to\* a system in which within class groups are based on the performance of the pupils (homogeneous groups, attainment groups or 'ability' groups) where there is a narrower spread of attainment in each teaching group within the class. Or it might be moving \*from\* homogeneous within class groups to more heterogeneous (\*from\* ability groups \*to\* mixed ability groups. Please highlight the relevant sections of the text and associate these with the coding.*

- Heterogeneous to homogeneous  
*From mixed attainment or mixed 'ability' groups to more homogeneous or 'ability' groups within the class.*
- Homogeneous groups to heterogeneous  
*From setting or streaming to mixed attainment.*
- Not specified/ unclear  
*Where it is unclear what the direction of the move is in the research or there is no information about what typically happens in schools where and when the research was done.*
- Which areas of the curriculum are taught in attainment groups within the class?
  - Literacy  
*Reading, writing or general literacy (the main language of instruction in the context of the research).*
  - Mathematics
  - Other (please specify)
  - Not specified/ Unclear  
*Where there are no details of what subjects of the curriculum taught in the homogeneous groups or these details are unclear. Please highlight or add notes about what details are included*
- Which pupils in the classes are affected by the within class grouping
  - All pupils  
*Where the grouping involves all of the pupils in each class*
  - Low attainers only  
*Where the grouping involves only the low attaining pupils in each class*
  - Gifted and talented only  
*Where only the very high attaining, exceptional or gifted and talented students are grouped together.*
  - Other (please specify)  
*Please highlight the relevant sections of the text and add any additional information in the info box*
- How many grouping levels are there for attainment?  
*How many bands or levels are used in assigning pupils to groups by their performance or attainment?*
  - 4 groups  
*Four levels of attainment (e.g. (e.g. SEN, Low, Average High or Low Average High Exceptional)*
  - 3 groups  
*Three groups or bands of attainment (e.g. High, Average, Low or XYZ classes in some US studies)*
  - 2 groups  
*Two bands or levels (High and Low or Average and Exceptional (for gifted and talented studies).*
  - Other (please specify)  
*Where a different number of bands or levels is used.*
  - Not specified/ Unclear  
*Please only use this code if there is confusing or contradictory information in the study report. Please highlight the text which gives rise to the confusion.*
- Do all pupils follow the same curriculum in the different attainment groups?  
*In some approaches the different groups follow or are taught a different curriculum or curricular track. This is often the case for acceleration approaches, but is also sometimes a specific feature of other approaches, such as in classes for low attainers.*
  - No - different curriculum  
*Use this code to indicate that the different groups or tracks follow a different curriculum with different materials and different curriculum content. One example is acceleration where pupils study a more challenging curriculum. Another example is cross age or non-graded classes where each group or class is taught different content.*
  - Yes - same curriculum  
*Use this code where all groups study the same curriculum. This is usually the case in within class attainment grouping, and often still the case in set or streamed classes. All groups study the same curriculum content, but at different levels.*
  - Unclear/ Not specified  
*Please use this code if there is no information about the curriculum content and a reasonable inference cannot be made. In most situations the same curriculum content is followed. Please highlight any details in the text of the study report.*
- Does the approach have a specific name or description?  
*Please indicate whether the grouping or setting approach has a name*

- Yes (please specify)  
*Please highlight and add the name in the info box.*
  - No
- How are pupils assigned to groups?  
*Please indicate on what basis the pupils are assigned to the different attainment groups.*
  - Using test results (please add details)  
*Please indicate if selection is undertaken on the basis of testing and add details about what kind of test was used.*
  - By the teacher(s)  
*Where the assignment is based on teachers' judgement.*
  - Other (please specify)  
*Please provide information about how pupils are assigned to attainment groups.*
  - Not specified/ Unclear  
*Where there are no details or confusing information about the selection method. Please highlight the relevant sections of text which lead to any confusion.*
- Aspiration interventions v 0.1 Aug 2021
  - Please indicate which activities or mechanisms were part of the aspiration intervention.  
*Please also highlight the relevant text in the attached document. (Check box)*
    - Role models  
*providing models and examples of career success to emulate, such as through mentoring*
    - Encouragement  
*through emotional and motivational support*
    - Practical experience  
*such as through summer programmes, work experience, apprenticeships or networking*
    - Supplementary learning  
*improving academic readiness through provision of additional learning activities*
    - Provision of information  
*on employment, higher/further education or academic qualifications and requirements*
    - Other  
*please specify in the info box and by highlighting the relevant text*
  - Was the aspiration intervention programme targeted or universal? If not specified, please assume it was universal.  
*Please also highlight any details in the text.*
    - Targeted
    - Universal
  - If it was targeted at particular pupils or groups or pupils, please indicate the basis for selection.  
Please indicate all that apply.  
*Please also highlight any details in the text.*
    - Low socio-economic status
    - Low attaining or under achievement
    - Gender (e.g., girls and STEM)
    - Other (please specify)
- Early numeracy approaches v.01 Jan 2022  
*Early numeracy approaches aim to develop number skills and improve young children's knowledge and understanding of early mathematical concepts. Activities in this area might be structured, for example through programmes designed to develop children's 'number sense' (their developing understanding of quantity and number), or more informal, such as using mathematical games including computer games (see also Digital technology), or pretend activities involving counting or using other mathematical language.*
  - What mathematics was included in the programme or approach? (Please select one option and highlight the relevant text in the study report.)
    - Number and operations/ numeracy only
    - Broad mathematics curriculum  
*(e.g. may include mathematical language, pattern, shape, space and measures etc.)*
    - Unclear/ not specified
  - How comprehensive was the programme or approach?  
*Please select one option and highlight the relevant text in the study report.*
    - A complete mathematics curriculum
    - Supplementary mathematics activities only
    - Unclear/ not specified
  - Which of the following activities are mentioned in the description of the programme or approach?  
*Please select ALL that apply and highlight the relevant text in the study report.*
    - Guided interaction
    - Direct teaching and/or instruction
    - Feedback

- Mastery/ fluency
- Practice/ reinforcement
- Investigations/ exploration/ inquiry/discovery
- Concrete materials/ manipulatives
- Digital technology/ computers
- Games
- Parents/home activities
- None of the above mentioned
- Not specified / no details
- Early literacy approaches v. 01 Feb 2022
  - What literacy activities were included in the programme or approach?  
*Please select all that apply and highlight the relevant text in the study report.*
    - Oral or spoken language
    - Reading
    - Writing
    - Unclear/ not specified
  - How comprehensive was the programme or approach?  
*Please select one option and highlight the relevant text in the study report.*
    - A complete literacy and language curriculum
    - Supplementary literacy activities only
    - Unclear/ not specified
  - Which of the following activities are mentioned in the description of the programme or approach?  
*Please select all that apply and highlight the relevant text in the study report.*
    - Phonics, phonemic/phonological awareness or other sound to symbol/ symbol to sound correspondence
    - Letter recognition, letter name knowledge or alphabet skills
    - Rhyme (or rime) activities
    - Whole language instruction
    - Play or play-based learning, dramatic play
    - Small group activities or instruction
    - One to one interaction or instruction
    - Parental involvement, family literacy
- EY\_Extra hours v .01 May 2022
  - How was the additional time organised?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - From no time to half-day attendance at nursery/ kindergarten (5 days per week)
    - From half-day to full day nursery/ kindergarten (5 days per week)
    - Additional hours each day (but less than half a day extra each day)
    - Additional days each week (e.g. from 3 days to 5 days)
    - Additional weeks in the year (e.g. from 40 weeks to 45 weeks)
    - Other (please specify)
  - Was additional time structured the in the same way as or different from the usual activities?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - Same activities
    - Different activities
    - Not specified/ unclear
- EY\_Play-based learning v .01 May 2022
  - What kind of play is involved in the study?  
*Please highlight the relevant text in the study report and select all that apply.*
    - Free play  
*where the children choose their own activities and are self-directed*
    - Guided or facilitated play  
*where an adult interacts with an individual child or group such as 'learning through play'*
    - Socio-dramatic or pretend play
    - Outdoor play  
*including Forest schools*
    - Games or other structured or directed play activities
    - Other (please specify)
  - Who was involved in the play activities?  
*Please highlight the relevant text in the study report and selected the most appropriate option(s).*
    - Early years children only
    - Children and adult staff
    - Children and parents
    - Other (please specify)

- What was the main focus for the play activities?  
*Please highlight the relevant text in the study report and select all that apply.*
  - Language/ literacy
  - Mathematics
  - Science/ exploring the natural world
  - Physical development (gross or fine motor skills)
  - Social/ emotional development
- EY\_Earlier starting age v .01 June 2022
  - What was the previous starting age?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - 3
    - 4
    - 5
    - 6
    - Not specified / unclear
  - What is the new starting age?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - 2
    - 3
    - 4
    - 5
    - Not specified / unclear
  - Was the additional time in Nursery or Kindergarten full or part time?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - Full time
    - Part time
    - Other (please specify)
    - Not specified/ Unclear
  - Was additional time in Nursery or Kindergarten structured the in the same way as previously or different from the usual activities?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - Same activities
    - Different activities
    - Not specified/ Unclear
  - What was the duration of the additional time experienced by children who started earlier (in months)?  
*Please highlight the relevant text in the study report and select the most appropriate category.*
    - Six months or half an academic year
    - One full academic year (12 months)
    - Two full academic years (24 months)
    - Other (Please add a numeric value only, in whole number of months)
  - What type of early years setting did the children attend?  
*Please select only one option if possible.*
    - Nursery school or class (state funded)
    - Private nursery class or school
    - Reception class (state funded)
    - Private Reception class or school
    - Other (please specify)
    - Unclear/ not specified

## Appendix 4: Main Coding Guide



Durham  
University



Education  
Endowment  
Foundation

EEF EVIDENCE DATABASE  
CODING GUIDE

# MAIN DATA EXTRACTION

VERSION 2.0

MARCH 2022

**About this guide:** This guide was created by a team at Durham University for the Education Endowment Foundation's (EEF) Education Database Project to update their Teaching & Learning Toolkit.

Those involved in developing the guide were: Dr Emma Dobson, Dr Berenice Villanueva-Aguilera, and Professor Steve Higgins, with thanks to other members of the team for providing feedback during its development.



**Attribution-NonCommercial-ShareAlike  
4.0 International (CC BY-NC-SA 4.0)**



# Main Data Extraction

## Coding Guide

### Contents

#### Introduction to Data Extraction

- How to code in EPPI Reviewer 5
- Example coding in EPPI Reviewer 6
- How to use the MDE Coding Guide 7
- Pre-coding Checks 8

#### Main Data Extraction Coding Guide

- Section 1: What is the publication type? 10
- Section 2: What is the research design and which methods were used? 12
- Section 3: Where did the study take place? 19
- Section 4: What is the sample of the study? 22
- Section 5: What was involved in the intervention? 25
- Section 6: What kind of primary outcomes are provided? 33

#### Further Information

- School Grade and Pupil Age Conversion Table 37
- Double Coding 38
- Resources for Help & Support 41

# Main Data Extraction

## Coding Guide

This guide provides information about how to use EPPI Reviewer to code studies contained within the EEF Education Evidence Database. Whilst a description of each code can be found within its code-set in EPPI Reviewer, it is sometimes necessary to expand upon these definitions to help support data extraction of a particularly tricky source.

The guide gives examples and notes to assist with the Main Data Extraction (MDE) coding process, which is outlined step-by-step. This guide should be used in conjunction with the coding process in EPPI Reviewer to ensure that you have completed each stage correctly. It should be your first source of help/advice if you are unsure about how to extract and/or record data from a study. If you are still unsure after reading the coding guide, please refer to the troubleshooting flow diagram provided at the end of this document or the relevant channel on the EEF Education Database Slack forum.

### **01. Introduction to Data Extraction**

The Introduction section (pp. 5-9) provides information on how to enter codes into EPPI Reviewer, how to use the coding guide and pre-coding checks that should be conducted before starting the coding process.

### **02. Main Data Extraction Coding Guide**

The Main Data Extraction Coding Guide (pp. 10-36) outlines each stage of the MDE coding process. Each code within this code-set is listed alongside a descriptor. In addition, icons to indicate how this data should be captured are provided, as well as examples of what this data could/should look like.

### **03. Further Information**

The Further Information section (pp. 37-41) provides additional guidance that may be needed to support the coding process. This includes a chart to convert reported school grade/year of participants into age in years and codes that have been identified as frequently causing disagreement between coders during the double-coding 'check' process. There is also a page that signposts resources and contact information for troubleshooting purposes.

# Introduction

## How to code in EPPI Reviewer

There are three ways to extract data and add codes to records held within EPPI:

1. Selecting or ticking the code checkboxes
2. Highlighting information in the source PDF file and assigning a code
3. Typing in the 'Info' box next to the code

### **Ticking the code checkbox**

You should use the code checkboxes when:

- A short response is required and the provision of additional detail is unnecessary e.g. when coding for country
- The source PDF file cannot be highlighted. In this instance, text that should have been highlighted will need to be typed out into the 'Info' box along with the source page number.

### **Highlighting information in the source PDF file and assigning a code**

You should highlight text in the source PDF file and assign a code when:

- More detail is required than can be captured by a checkbox response e.g. when providing a description of an intervention

### **Typing in the 'Info' Box**

You should type in the 'Info' box when:

- The source PDF file cannot be highlighted (post on the #problematicPDFs Slack channel first to request an accessible/highlightable source PDF file be uploaded to EPPI). If a highlightable source cannot be provided, text that should have been highlighted will need to be typed out into the 'Info' box along with the source page number
- Where numeric data is required

Should you encounter a software-based problem whilst using EPPI Reviewer (e.g. crashing, log-in failure), please contact the EPPI Support Team at: [EPPIsupport@ucl.ac.uk](mailto:EPPIsupport@ucl.ac.uk)

# Introduction

## Example coding in EPPI Reviewer

Example Question: Is there more than one treatment group?

Diagram illustrating the EPPI Reviewer interface and the process of coding a study question.

The interface shows a list of questions on the left, a main text area in the center, and a right-hand pane for additional information.

**Annotations:**

- Checkbox:** Points to the "Is there more than one treatment group?" question in the left pane.
- Info Box:** Points to the "Info" link next to the "Yes (Please specify)" option.
- Highlighted text:** Points to the text "2 treatments, one control we use RCS condition as our control" in the "Additional Text" box.

**EPPI Reviewer Interface Details:**

- Left Pane (Questions):**
  - Section 1 What is the publication type?
  - Section 2 What is the research design and which methods were used?
    - What is the intervention name? [Info](#)
    - How is the intervention described? [Info](#)
    - What are the intervention objectives? [Info](#)
    - Is there more than one treatment group?
      - ☒ Yes (Please specify) [Info](#)
      - ☐ No [Info](#)
      - ☐ Not specified or N/A [Info](#)
    - How were participants assigned?
    - What was the level of assignment?
    - How realistic was the study?
  - Section 3 Where did the study take place?
  - Section 4 What is the sample of the study?
  - Section 5 What was involved in the intervention?
  - Section 6 What kind of primary outcomes are reported?

- Main Text Area:**

ying appropriate strategies for individual of practice in flexible strategy selection uded in previous studies. In conjunction n, students assigned to the additional AR citly taught how to identify faulty attribud failure (e.g., luck) and instead make s for reading comprehension outcomes fo promote the appeal to older students, itially introduced through sport examples ations (e.g., a basketball player's positive g when a crowd jeers during a free throw come). The sport examples were intended oncepts, help students make connections sonal experiences and the AR concepts, t motivation to learn the RCS strategies. teacher feedback was provided that rein-

4 / 15
- Right Hand Pane:**

retraining; KN = Read Naturally.

addition to RCS would persist in strategy use and outperform students in the RN group at delayed posttesting.

**Method**

A pre-post experimental design with a 6-week delayed posttest was used. Students with disabilities within each of seven existing self-contained English or accelerated reading classes were stratified by class and randomly assigned to one of three conditions: RCS+AR, RCS, or RN. This resulted in 21 total instructional groups (7 RCS+AR, 7 RCS, and 7 RN) of not more than seven students. In addition, for each of the 7 classes, an online random numbers generator program was used to determine which instructors would teach each of the three instructional groups for the duration of the intervention (see Table 1).

# Introduction

## How to use the MDE Coding Guide

This guide is to be used in conjunction with coding in EPPI Reviewer to ensure that each stage of the coding process has been completed and accurate information has been recorded. This coding guide provides a step-by-step outline of the Main Data Extraction (MDE) code-set. Each section of the code-set is presented along with potential codes that can be selected, a definition of the meaning of these codes, and an example of the data used to support coders' choice of appropriate code. Below is an excerpt from the coding guide with explanations regarding how to use this when coding.

Coding category

Definition or description of what code means of the data that needs to be recorded

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>2.4. Is there more than one treatment group?</b><br/>Does the research design include more than one arm or contrast so that more than one estimate of the estimate of effect can be made from a different comparison group or version of the intervention?</p> <div> <input checked="" type="checkbox"/>  </div> <div> <input type="checkbox"/> Yes (Please specify)         </div> <div> <input type="checkbox"/> No         </div> <div> <input type="checkbox"/> Not specified or N/A         </div> | <p>Highlight the text (or enter information in the 'Info Box') to describe the design and specify other interventions or comparisons relative to the main intervention group.</p> | <p>EX1: <b>Students were placed in one of four conditions. Computer-based feedback with positive comments from teacher, computer-based feedback with negative comments from teacher, computer-based feedback with no comment from teacher, no computer-based feedback or comment from teacher.</b></p> <p><i>In this instance, the 'Yes' checkbox needs to be selected. Further detail about the design needs to be highlighted or typed in the 'Info' box, as in the example above.</i></p> <p>EX2: <b>Students were placed in one of two conditions: PALS treatment or control.</b></p> <p><i>In this instance, the 'No' checkbox should be selected. The relevant text should be highlighted as evidence of the code.</i></p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Symbols indicating how coders should be recording data using the EPPI Reviewer functions.

Potential codes that can be selected

Examples of data that could be recorded or relevant codes that should be selected



Select a checkbox



Highlight text and assign a code



Type data into the 'Info' Box

# Introduction

## Pre-coding checks

Once you have been allocated a study to be data extracted/coded, you can view its record in EPPI Reviewer. Before you open the attached PDF source file and begin coding, you should undertake the following initial checks:

1. Does the title of the PDF match the record of the study in EPPI Reviewer?
2. Can you read and highlight the text?
3. Does the text make sense?
4. Have more specific instructions for data extraction been provided?

### **Does the PDF title match the study record?**

If the title of the study reported in the attached source PDF file does not match the record in EPPI Reviewer, please contact a member of the project team on Slack ([#problematicPDFs](#)).

### **Can you read and highlight the PDF file?**

Some of the attached PDF source files in EPPI Reviewer have been photocopied from bound journals or theses. As a result, the legibility of these files can be poor. If a file is difficult to read or highlight, please contact a member of the project team on Slack ([#problematicPDFs](#)).

If a file is a particularly large document, it may have been split into multiple files. These will be ordered numerically e.g. Anderson\_1984\_PDF1, Anderson\_1984\_PDF2. Read the files in numerical order and code each PDF separately as you work through the coding process.

### **Does the text make sense?**

To facilitate coding, some sources have been processed using Optical Character Recognition (OCR). This will have been noted in the 'Comments' section of the study record in EPPI. If there are errors in the OCR process that are preventing legibility/understanding, please contact a member of the project team on Slack ([#problematicPDFs](#)).

### **Are there more specific instructions for data extraction?**

Always check the 'Comments' section of the study record in EPPI. This may contain important information about the study which has implications for coding. For example, some sources might report multiple outcomes for multiple studies within a single report. If this is the case, guidance will be provided in the 'Comments' section of the

source record (Citation details window) in EPPI. The guidance will identify which outcomes/studies should be coded and which should be ignored.

Item Details

FirstPreviousNextLast

Item 8 of 100

Item Details

Links Arms TimepointsPDFCoding Record

Ref. Type: Journal, Article

Effects of a four-year Follow Through program on economically disadvantaged children

Abstract:

Longitudinal and cross-sectional comparisons were made of 109 economically disadvantaged children in 1 Follow-Through and several non-Follow-Through primary school programs. A longitudinal comparison was also nondisadvantaged children in the Follow-Through program. Clear-cut program effects were found in the 4th yr (grade 3) when Follow-Through children were superior to non-Follow-Through children on IQ achievement. Through program did not result in the economically disadvantaged children attaining the level of intellectual achievement displayed by the nondisadvantaged children. (30 ref) (PsycINFO Database Record (c) 2016 APA)

Author(s)Abelson Willa D; Zigler Edward ; DeBlasi Cheryl L;

JournalJournal of Educational Psychology

Item isIncluded

ID41683644

Imported ID

Year1974

ISSN

Short TitleAbelson (1974)

Pages756-771

Volume66

Issue5

Url

DOIhttps://doi.org/10.1037/h0037478

Availability

Edition

Publisher

MonthOctober

City

Country

Institution

Comments

MDE: Please compare scores between the follow through (FT) vs. the non-follow through (NFT) groups up to the end of Kindergarten (immediate post-test). ESDE: Please combine boys and girls scores using the spreadsheet on Slack (Combining means and SDs) for end of Kindergarten (FT versus non FT), post-test only comparison, with STAR as primary and PPVT as secondary outcome.

KeywordsFollow-Through primary school program IQ & achievement & social

Created by:Source: ML\_Waxman et al.1986.ris

Created on:05/06/2019

Edited by:Jade Stafford

Duplicate ID's

Upload

Documents:

Id

Ref

File Name

406851

Abelson (1974)

Abelson et al (1974).pdf

Attached PDF file

Instructions to coders

If you are not sure what data to extract from a study, please contact a member of the project team on Slack (#coding\_problems), with the name of the study, internal ID number and Toolkit strand you are data extracting for.

9

# MDE Coding Guide

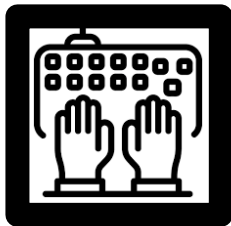
## Section 1

### What is the publication type?

In Section 1 you will need to identify whether a source is a:

- Journal article
- Dissertation or thesis
- Technical report
- Book or book chapter
- Conference paper
- Other

This section largely requires coders to tick the applicable coding checkbox.



| Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Applicable Codes                                | Definition                                                                                                                                                                                                   | Example                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| SECTION 1: What is the publication type?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                 |                                                                                                                                                                                                              |                                                                                                       |
| 1.1. What is the publication type?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                 |                                                                                                                                                                                                              |                                                                                                       |
| <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> | <input type="checkbox"/> Journal Article        | A report published in a peer-reviewed journal with an ISSN.                                                                                                                                                  | Once a checkbox has been selected, no further action/coding is required in response to this question. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Dissertation or thesis | A report of a study in a dissertation or thesis submitted as all or part of the assessment for a higher degree.                                                                                              | Once a checkbox has been selected, no further action/coding is required in response to this question. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Technical report       | An unpublished report, technical report or document providing details of a research study or studies without an ISSN or ISBN. (NB: EEF Evaluations are classified as technical reports).                     | Once a checkbox has been selected, no further action/coding is required in response to this question. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Book or book chapter   | A report of a research study published in a book or book chapter with an ISBN.                                                                                                                               | Once a checkbox has been selected, no further action/coding is required in response to this question. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Conference paper       | A report of a study presented at a research conference and subsequently made more widely available. (NB: Peer-reviewed conference proceedings with an ISBN should still be classified as conference papers). | Once a checkbox has been selected, no further action/coding is required in response to this question. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <input type="checkbox"/> Other (Please specify) | A report not classifiable according to the categories above (e.g. a website). Please add further detail in the 'Info' box.                                                                                   | Once this checkbox has been selected, please add further information to the 'Info' Box'.              |

# MDE Coding Guide

## Section 2

### **What is the research design and which methods were used?**

In Section 2 you will need to provide information about:

- Intervention name
- Intervention description
- Intervention objectives
- Comparison groups
- Participant assignment
- Assignment level
- Ecological validity

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply codes.



| Question                                                                          | Applicable Codes                            | Definition                                                                                                                           | Example                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECTION 2: What is the research design and which methods were used?               |                                             |                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2.1. What is the intervention name?                                               |                                             |                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | Highlight relevant text and code            | Provide the name of the intervention, programme or approach as given in the report.                                                  | <p>'The purpose of this study was to implement and evaluate the effectiveness of the <b>Peer Assisted Learning Strategies (PALS)</b> supplemental reading program to determine if there was an increase in sixth grade students' reading comprehension, oral fluency, and attitude toward reading, specifically when reading nonfiction text.'</p> <p><i>It is enough here to simply highlight the programme or intervention name as above. No further action/coding is needed in response to this question. <b>Do not code the title of the study as the intervention name.</b></i></p>                                                                                                                                                                                                  |
| 2.2. How is the intervention described?                                           |                                             |                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | Highlight relevant text and select the code | Provide a brief summary of the intervention as provided in the report. Please include the rationale for impact on learning if given. | <p>'The research comprised <b>multiple intervention stages. 1). Remedial teachers (participants) were asked to conduct a systematic intentional inquiry into their approach to formative assessment. Using an online bulletin board to reflect on their beliefs and assumptions which inform their practice, they were encouraged to experiment with formative assessment in their respective teaching contexts. 2). Participants met eight times throughout the year to discuss the intervention; sharing their insights, strategies and beliefs. 3). The research director observed participants in their daily classroom work and examine samples of students' work.'</b></p> <p><i>Code text that describes the activities that were carried out as part of the intervention.</i></p> |

| 2.3. What are the intervention objectives?                                                                                                                                                            |                                                                                                                                       |                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                      | Highlight relevant text and code                                                                                                      | Please provide the specific objectives or aims of the intervention, programme or approach as provided in the report.                                                       | <p>'The purpose of this study was to implement and <u>evaluate the effectiveness of the Peer Assisted Learning Strategies (PALS) supplemental reading program to determine if there was an increase in sixth grade students' reading comprehension, oral fluency, and attitude toward reading, specifically when reading nonfiction text.</u>'</p> <p><i>This should be the stated objective of the study, please don't code the research questions as the intervention objectives.</i></p>                                                                                                                                                                                                                                          |
| 2.4. Is there more than one treatment group?                                                                                                                                                          |                                                                                                                                       |                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Does the research design include more than one arm or contrast so that more than one estimate of the estimate of effect can be made from a different comparison group or version of the intervention? |                                                                                                                                       |                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                     | <input type="checkbox"/> Yes (Please specify)<br><br><input type="checkbox"/> No<br><br><input type="checkbox"/> Not specified or N/A | Highlight the text (or enter information in the 'Info Box') to describe the design and specify other interventions or comparisons relative to the main intervention group. | <p>EX1: '<u>Students were placed in one of four conditions. Computer-based feedback with positive comments from teacher, computer-based feedback with negative comments from teacher, computer-based feedback with no comment from teacher, no computer-based feedback or comment from teacher.</u>'</p> <p><i>In this instance, the 'Yes' checkbox needs to be selected. Further detail about the design needs to be highlighted or typed in the 'Info' box, as in the example above.</i></p> <p>EX2: '<u>Students were placed in one of two conditions: PALS treatment or control.</u>'</p> <p><i>In this instance, the 'No' checkbox should be selected. The relevant text should be highlighted as evidence of the code.</i></p> |

## 2.5. How were participants allocated?

How were the participants assigned or allocated to their group (i.e. treatment and control)?



- ☐ Random allocation (please specify)

Select this code where the report describes the participants' allocation to their group as random or pseudo-random (computer generated). Please highlight the text or add information to the 'Info Box' about the randomisation details.

'Sixty-four children were randomly selected from the group of children who met the selection criteria. **These 64 children were then randomly assigned to one of four experimental conditions.** Once in the classroom, children were paired randomly in same-gender dyads to serve as instructional partners for one another.'

"This is a quasi-experimental design... **Two classrooms, A & B, were randomly assigned to treatment and control.**"

This would be random assignment/ allocation at class level.

***Please be as selective as you can in highlighting the most relevant text to the question.***

- ☐ Non-random but matched

No randomisation, but matched at allocation prospectively to balance on attainment (or on attainment and other variables).

- ☐ Non-random, not matched prior to treatment

No random allocation and not matched prior to treatment. The nature and extent of any group differences in attainment at baseline is described and then accounted for in the analysis of impact (retrospective matching).

- ☐ Unclear

Please only select this code if there are no details about control and intervention allocation or if the information is so unclear as to prevent a reasonable inference.

|  |                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>□ Not assigned – naturally occurring sample (prospective QED)</li> <li>o Retrospective Quasi Experimental Design (QED)</li> <li>o Regression discontinuity (e.g. Policy change)</li> </ul> | <p>This is where researchers take advantage of a situation where a comparison can be made between groups from changes that either are planned but have not yet happened (prospective) which will give an estimate of the impact of the intervention or approach of interest.</p> <p>Where an experiment is created from a naturally occurring situation which has already occurred (retrospective) and two groups (or more) are compared to give an estimate of impact</p> <p>This is a type of design that identifies the causal effects of an intervention or approach by using or assigning a cut-off or threshold above or below which an intervention is evaluated (e.g. policy change where smaller classes are introduced in a district or a test is used to allocate students to additional support). By comparing results close to, but either side of the threshold, it is possible to estimate the effect of the intervention.</p> | <p>“We can thus identify the impact of these programs by simply comparing students who scored just below and just above the promotional cutoff. For example, if students who missed the cutoff (and were thus required to attend summer school) learned much more than students who just made the cutoff (and thus avoided summer school), then one might conclude that summer school had a positive impact on student achievement.”</p> <p><b><i>This is a regression discontinuity design. Most regression discontinuity designs will explicitly describe the method.</i></b></p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2.6. What was the level of allocation?

At which level was the assignment to intervention and control group conducted?



|                                              |                                                                                                                                                                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Individual          | The assignment was at the level of the individual student or pupil. All of the individual participants were included as a single group for allocation or randomisation.                                                       |
| <input type="checkbox"/> Class               | The class or usual teaching group of the students was the level at which the intervention or approach was allocated. Intact classes were allocated or assigned to the intervention or approach (taking no account of school). |
| <input type="checkbox"/> School - cluster    | The school was the level of assignment and all pupils in a single school are allocated to the same grouping (i.e. a single school would not include both intervention and control).                                           |
| <input type="checkbox"/> School - multi-site | The school is the level of assignment, but each school contains both intervention and control groups. The design allows a within school comparison to be made.                                                                |
| <input type="checkbox"/> Region or district  | The region or district is the level at which the assignment is made.                                                                                                                                                          |
| <input type="checkbox"/> Not provided        | A description of the level of allocation is not provided or available in the report.                                                                                                                                          |
| <input type="checkbox"/> Not applicable      |                                                                                                                                                                                                                               |

"This is a quasi-experimental design... Two classrooms, A & B, were randomly assigned to treatment and control."

This would be random assignment/ allocation at class level.

## 2.7. How realistic was the study?

Was the intervention implemented under 'real world' conditions? Factors to consider in assessing the 'ecological validity' include where the intervention took place (usual educational setting for educational approaches of this kind) and who taught or led the intervention with the pupils (did it involve teachers or other educational professionals?)

|                                                                                                                                                                     |                                                   |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <input type="checkbox"/> High ecological validity | Select this code where the intervention or approach seems realistic for schools or teachers to adopt. Any adaptations to enable the research to be conducted do not appear to affect the validity of the findings and implications for schools. Studies which take place in schools and are taught by the usual teachers or staff have high ecological validity. | <p><u>'PALS was implemented by classroom teachers for 35-40 minutes, three days a week in addition to students' regular reading program.'</u></p> <p><b><i>In this example, the 'High ecological validity' checkbox should be selected as the study took place in a school setting and was delivered by a teacher. Please highlight the relevant text or add notes to the 'Info' box.</i></b></p> |
|                                                                                                                                                                     | <input type="checkbox"/> Low ecological validity  | Select this code where the intervention or approach does not seem realistic or practical for schools or teachers to adopt. Studies which take place in laboratory settings and are only taught by researchers have low ecological validity.                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                     | <input type="checkbox"/> Unclear                  | Select this code where there are no details about where the intervention took place or who was responsible for its delivery and it is not possible to infer sufficient details to make a judgement about the ecological validity of the study.                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                   |

# MDE Coding Guide

## Section 3

### **Where did the study take place?**

In Section 3, you will need to provide information about:

- The country where the study was conducted
- Specific information about study context
- Specific information about the educational setting

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply codes.



| Question                                                                                                                                                            | Applicable Codes                                                | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Example                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECTION 3: Where did the study take place?                                                                                                                          |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                             |
| 3.1. Please add information about the location                                                                                                                      |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                             |
| Further information on where the study took place (e.g. city, district, urban, suburban, rural etc.) as provided by the study                                       |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                             |
|   | <input type="checkbox"/> Specific to the location or place      | Information about the specific place where the research was undertaken (e.g. name of city, state, or region)                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 'This study was conducted at an intermediate school located in a suburban public school district in <b>Western Pennsylvania</b> '.                                                                                                                                                          |
|                                                                                                                                                                     | <input type="checkbox"/> Information about the type of location | Information about what kind of location (e.g. rural, urban, suburban)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 'This study was conducted at an intermediate school located in a <b>suburban</b> public school district in Western Pennsylvania'.                                                                                                                                                           |
|                                                                                                                                                                     | <input type="checkbox"/> No information provided                | Please use this code if there is no further information about the specific location (place name) or the type of location (urban/rural).                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                             |
| 3.2. In which country/countries was the study carried out? (Select ALL that apply)                                                                                  |                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                             |
|   | Select the country or countries that the study was conducted.   | <p>Countries which are recognised as sovereign states by the United Nations. If you think there is a country missing, please ask!</p> <ul style="list-style-type: none"> <li>- For studies based in the UK, expand this code set and select each of the applicable countries e.g. Scotland, Northern Ireland, Wales, England.</li> <li>- The code 'West Indies' is used for Caribbean colonial dependencies. Expand this code set and select each applicable country.</li> <li>- If study takes place in Hong Kong, use Hong Kong code only, NOT China.</li> </ul> | <p>'This study was conducted at an intermediate school located in a suburban public school district in <b>Western Pennsylvania</b>'.</p> <p><b><i>In this instance, the 'USA' checkbox needs to be selected. Please highlight the relevant text or add notes to the 'Info' box.</i></b></p> |

### 3.3. What is the educational setting? (Select ALL that apply)

What is the type of educational setting that the students attend which is the focus of the intervention or approach?

|                                                                                                                                                                     |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|   | <input type="checkbox"/> Nursery school/preschool                      | A separate nursery or pre-school setting or a nursery or early years class in a primary school. The focus is on the type of setting or educational provision.                                                                                                                                                                                                                                                                                                                 |  |
|                                                                                                                                                                     | <input type="checkbox"/> Primary/elementary school                     | A school for children of normal school age (depending on the jurisdiction). The focus is on the school type or setting. Pupils will typically be between ages of 5 and 11.                                                                                                                                                                                                                                                                                                    |  |
|                                                                                                                                                                     | <input type="checkbox"/> Middle school/(Prep)                          | An intermediate school provided in some jurisdictions for pupils between their primary (or elementary) and secondary educational stages.                                                                                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                     | <input type="checkbox"/> Secondary/high school                         | A school for older pupils, after primary or elementary education (and after middle school where provided). Pupils will usually be between the ages of 11 and 18.                                                                                                                                                                                                                                                                                                              |  |
|                                                                                                                                                                     | <input type="checkbox"/> Residential/boarding school                   | A school where pupils reside as well as study; boarding either by week or over a term.                                                                                                                                                                                                                                                                                                                                                                                        |  |
|                                                                                                                                                                     | <input type="checkbox"/> Independent/private school                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|                                                                                                                                                                     | <input type="checkbox"/> Home                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|                                                                                                                                                                     | <input type="checkbox"/> Further education/junior or community college | A formal educational setting for older secondary pupils. Students will usually be 16 or older, but still studying for school-level, vocational or professional qualifications (i.e. not higher education or leading to a Bachelor's degree)                                                                                                                                                                                                                                   |  |
|                                                                                                                                                                     | <input type="checkbox"/> Other educational setting (please specify)    | An educational setting which cannot be classified under one of the other definitions. Please provide details of the educational setting as given in the study (e.g. field centre, museum classroom, concert or rehearsal hall, public theatre, workplace training etc.)                                                                                                                                                                                                       |  |
|                                                                                                                                                                     | <input type="checkbox"/> Outdoor adventure setting                     | Educational activities taking place outdoors such as Outward Bound courses, sailing and kayaking or canoeing, camping, climbing or courses based at an outdoor education centre. All studies classified under the Toolkit strand 'Outdoor adventure learning' should be included. Field studies centres where the activities focus solely on school subjects like Geography or Biology should not be included (please use 'Other' for these and specify the type of setting). |  |
|                                                                                                                                                                     | <input type="checkbox"/> No information provided                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |

# MDE Coding Guide

## Section 4

### What is the sample of the study?

In Section 4, you will need to provide information about:

- Overall sample analysed
- Student sex
- Student age
- Student SES/FSM status

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply codes AND type numeric information into the 'Info' Box.



| Question                                                                                                                                                                | Applicable Codes                                                    | Definition                                                                                                                                                                                                                                                                                                                            | Example                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECTION 4: What is the sample of the study?                                                                                                                             |                                                                     |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
| 4.1. What is the overall sample analysed?                                                                                                                               |                                                                     |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
|       | <input type="checkbox"/> What is the overall sample analysed?       | What is the total number of participants in the data analysed (both intervention and control/comparison)? <b>Please only write a numeric value in the 'Info Box' and highlight additional details on the study PDF.</b>                                                                                                               | <b>'Of the total enrolment of sixth-grade participants (N = 164), there were 132 assigned to the intervention group and 132 assigned to the control condition.'</b>                                                                                                                                                                                                 |
|                                                                                                                                                                         | <input type="checkbox"/> Other information about the overall sample | If needed (such as where information can't be highlighted), please add notes regarding overall sample size.                                                                                                                                                                                                                           | <i>Here you would write '164' in the Info box, then highlight as above.</i>                                                                                                                                                                                                                                                                                         |
| 4.2. What is the sex of the students?                                                                                                                                   |                                                                     |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
| Please indicate the sex of the total sample                                                                                                                             |                                                                     |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                        | <input type="checkbox"/> Female only                                |                                                                                                                                                                                                                                                                                                                                       | <b>'Of the total enrolment of sixth-grade participants (N = 164), there were 77 (47%) male and 87 (53%) female students.'</b><br><br><i>Here you would select the 'Mixed sex' checkbox, then highlight as above.</i><br><br><b>Data in the info box should be a percentage of female pupils for the overall sample T &amp; C (do not write the percentage sign)</b> |
|                                                                                                                                                                         | <input type="checkbox"/> Male only                                  |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                         | <input type="checkbox"/> Mixed sex                                  | Provide the percentage of female pupils in the study. Please highlight the section or add details of where this can be found in the report.                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                         | <input type="checkbox"/> No information provided                    |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
| 4.3. What is the age of the students? (Select ALL that apply)                                                                                                           |                                                                     |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                     |
|   | Select all ages of study participants                               | Please provide additional information if available (e.g. grade level(s), mean age, or mean and standard deviation) in the 'Info' box. Coders can use the indicative age per grade from p.35 of this guide. In cases where interventions last more than a year, please report the ages of children when they started the intervention. | <b>'This study included 164 sixth-grade students, ages 11-13.'</b><br><br><i>Here you would select checkboxes for '11', '12' and '13'. No further</i>                                                                                                                                                                                                               |

|                                                                                                                                                                                                                                                                                                                                                               |                                                                               |                                                                                                                                                                                                      |                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                               |                                                                               | Select 'No Information Provided' if no information indicating the students' age can be found in the study.                                                                                           | <i>action/coding is required in response to this question.</i>                                                                             |
| <b>4.4. What is the proportion of low SES/FSM students in the sample?</b><br>What proportion of students in the study are receiving free school meals (FSM) or reduced price lunches or are identified as being from a low socio-economic status? If possible, record this as a percentage. Please highlight or add further details as reported in the study. |                                                                               |                                                                                                                                                                                                      |                                                                                                                                            |
| <br><br><br><br>                                                                                           | <input type="checkbox"/> FSM or low SES student percentage                    | Please add the percentage of pupils in the sample who are receiving free school meals (FSM) or reduced price lunches or are identified as being from a low socio-economic status background.         | <i>Information entered into the 'Info Box' must only contain the percentage for the overall sample (only numerical digits, no symbols)</i> |
|                                                                                                                                                                                                                                                                                                                                                               | <input type="checkbox"/> Further information about FSM or SES in study sample | Please highlight any details provided in the study about the socio-economic status of the students involved in the research (such as eligibility for free or reduced price school meals or lunches). |                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                               | <input type="checkbox"/> No FSM/SES information provided                      | Select this option if there is no information about the socio-economic status of the students involved in the research (such as eligibility for free or reduced price school meals or lunches).      |                                                                                                                                            |

# MDE Coding Guide

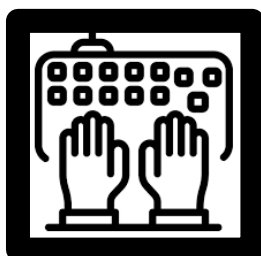
## Section 5

### What was involved in the intervention?

In Section 5, you will need to provide information about:

- Organisation responsible for intervention implementation
- Intervention training
- Intervention focus
- Intervention teaching approach
- Use of digital technology/parents/volunteers
- Intervention scheduling
- Intervention deliverer
- Intervention duration
- Intervention frequency
- Intervention session length
- Intervention detail/fidelity
- Intervention cost
- Intervention outcome evaluator

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply codes AND type numeric information into the 'Info' Box.



| Question                                                                                                                                                            | Applicable Codes                                               | Definition                                                                                                                                                                                                                                                                                                | Example |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>SECTION 5: What was involved in the intervention?</b>                                                                                                            |                                                                |                                                                                                                                                                                                                                                                                                           |         |
| <b>5.1. What type of organisation was responsible for providing the intervention?</b>                                                                               |                                                                |                                                                                                                                                                                                                                                                                                           |         |
| Please indicate what kind of organisation was responsible for the provision or management and organisation of the intervention.                                     |                                                                |                                                                                                                                                                                                                                                                                                           |         |
|   | <input type="checkbox"/> School or group of schools            | <p>Check the appropriate box for the type of organization responsible for the intervention. If there was a separate, independent evaluation, focus on the delivery of the intervention, not the evaluator.</p><br><br><br><br><p>Local education authority or district (government or public funding)</p> |         |
|                                                                                                                                                                     | <input type="checkbox"/> Charity or voluntary organisation     |                                                                                                                                                                                                                                                                                                           |         |
|                                                                                                                                                                     | <input type="checkbox"/> University/researcher                 |                                                                                                                                                                                                                                                                                                           |         |
|                                                                                                                                                                     | <input type="checkbox"/> Local education authority or district |                                                                                                                                                                                                                                                                                                           |         |
|                                                                                                                                                                     | <input type="checkbox"/> Private or commercial company         |                                                                                                                                                                                                                                                                                                           |         |
|                                                                                                                                                                     | <input type="checkbox"/> Other (please provide details)        |                                                                                                                                                                                                                                                                                                           |         |

| 5.2. Was training for the intervention provided?                                                                                                                                                                                                                                         |                                                        |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                        | <input type="checkbox"/> Yes                           | Was training provided to the delivery team as part of the preparation and support for the intervention? If so, who provided it? Please highlight the text or add details to the 'Info Box' as provided in the report.                                                                                                | 'Training was provided to all teaching staff administering the intervention. <u>Teachers were trained on administering certain reading tasks such as partner reading, paragraph shrinking and prediction relay.</u> ' |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> No                            |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> Unclear/Not specified         |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
| 5.3. Who is the focus of the intervention? (Select ALL that apply)                                                                                                                                                                                                                       |                                                        |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
| Who is the main focus of the intervention study? Although the interest of the Toolkit is on student outcomes, the focus of behavioural change may be on others in educational settings, such as teachers or parents. NB: all interventions must report outcomes on students' attainment. |                                                        |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
|                                                                                                                        | <input type="checkbox"/> Students                      | The main focus of the intervention is on the behaviours, interactions or activities of the students or pupils. Others may be involved (such as in training to deliver or implement a new approach), but the main aim is to change students' activities, behaviours and interactions to improve educational outcomes. |                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> Teachers                      | The main focus of the intervention is on the teachers and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims include teachers as a clear or explicit part of the rationale.                                                  |                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> Teaching assistants           | The focus of the intervention includes teaching assistants or teacher's aides (and/or other para-professionals) and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims include teaching assistants as part of the process.   |                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> Other education practitioners |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> Non-teaching staff            | The main focus of the intervention is on the non-teaching staff in schools and their behaviours, interactions and activities. This includes all staff who would not normally have a teaching role (e.g.                                                                                                              |                                                                                                                                                                                                                       |

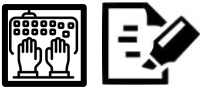
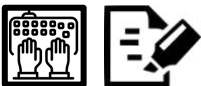
|                                                                                                                                                                     |                                                              |                                                                                                                                                                                                                                                                                                                                                  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                     |                                                              | administrative staff, lunchtime supervisors, facilities management etc.). Although the final outcome may be to improve students' attainment, the focus and study aims include non-teaching staff as part of the rationale.                                                                                                                       |  |
|                                                                                                                                                                     | <input type="checkbox"/> Senior management                   | The main focus of the intervention is on the senior management in schools (e.g. head teachers, deputy head teachers, heads of department) and their behaviours, interactions and activities. Although the final outcome may be to improve students' attainment, the focus and study aims include the senior management as part of the rationale. |  |
|                                                                                                                                                                     | <input type="checkbox"/> Parents                             | Parents or carers of participating students in the educational settings are involved because of their parental or caring responsibilities                                                                                                                                                                                                        |  |
|                                                                                                                                                                     | <input type="checkbox"/> Other                               |                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>5.4. What is the intervention teaching approach?</b>                                                                                                             |                                                              |                                                                                                                                                                                                                                                                                                                                                  |  |
| What was the main teaching or learning approach used for an intervention session?                                                                                   |                                                              |                                                                                                                                                                                                                                                                                                                                                  |  |
|   | <input type="checkbox"/> Large group/class teaching (+6)     | A large group (more than 6 students) with a teacher or supporter of the intervention, typically in a classroom setting.                                                                                                                                                                                                                          |  |
|                                                                                                                                                                     | <input type="checkbox"/> Small group/intensive support (3-5) | Intensive small group provision by a teacher, teaching assistant or other supporter of the intervention in a small group setting (3-5 participants in a group), sometimes in a separate teaching space or classroom.                                                                                                                             |  |
|                                                                                                                                                                     | <input type="checkbox"/> Paired learning                     | Two pupils either working together or peer teaching each other.                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                     | <input type="checkbox"/> One to one                          | One to one instruction where the teacher is not a peer, but a teacher, teaching assistant, volunteer or other educational professional.                                                                                                                                                                                                          |  |
|                                                                                                                                                                     | <input type="checkbox"/> Student alone (self-administered)   | Pupils or students working through study materials independently and/or unsupervised.                                                                                                                                                                                                                                                            |  |
|                                                                                                                                                                     | <input type="checkbox"/> Other (explain in notes)            |                                                                                                                                                                                                                                                                                                                                                  |  |

| 5.5. Were any of the following involved in the intervention or approach?                                                                                            |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|   | <input type="checkbox"/> Digital technology<br>- Yes<br>- No              | The main approach depends on the use of digital technology (e.g. tablets, laptops, software, internet) by pupils or teachers (e.g. interactive whiteboards).                                                                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                     | <input type="checkbox"/> Parents or community volunteers<br>- Yes<br>- No | Parents or community volunteers working with their children (or other pupils).                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| 5.6. When did the intervention take place? (Select ALL that apply)<br>When was the intervention delivered?                                                          |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|   | <input type="checkbox"/> During regular school hours                      | The intervention or approach takes place completely or mainly during regular school hours.                                                                                                                                                                                                                                                                                                                                                                                        |  |
|                                                                                                                                                                     | <input type="checkbox"/> Before/after school                              | The intervention or approach takes place completely or mainly before or immediately after normal school hours. This should mainly apply to activities taking place in school or normal educational settings.                                                                                                                                                                                                                                                                      |  |
|                                                                                                                                                                     | <input type="checkbox"/> Evenings and/or weekends                         | Where the intervention or approach takes place during evenings or weekends. Activities which take place immediately after school and at school (or in the same educational setting) should not be included.                                                                                                                                                                                                                                                                       |  |
|                                                                                                                                                                     | <input type="checkbox"/> Summer/holiday period                            | Where the educational activity takes place as additional time in what would normally be a holiday period (e.g. summer holidays or other vacation times).                                                                                                                                                                                                                                                                                                                          |  |
|                                                                                                                                                                     | <input type="checkbox"/> Other (please specify)                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|                                                                                                                                                                     | <input type="checkbox"/> Unclear/not specified                            | Use this code where there are no details provided of when the intervention was delivered and where the information provided does not allow a reasonable inference to be made about timing. The usual inference for most interventions where the timing is not specified will be 'during regular school hours'. If this inference cannot reasonably be made, please highlight/indicate in the 'Info' box the details in the report which produce the ambiguity or lack of clarity. |  |

**5.7. Who was responsible for the teaching at the point of delivery? (Select ALL that apply)**

Please provide details (e.g. staff involved, training level provided, number/proportions of staff). This should focus on the experience of pupils, rather than any initial training and support.

|                                                                                                                                                                     |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <input type="checkbox"/> Research staff         | Select this code where the intervention or approach was delivered largely or exclusively by researchers or the research team.                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                     | <input type="checkbox"/> Class teachers         | Select this code when the intervention or approach was taught or delivered by professional teachers as part of their usual teaching or wider professional activity.                                                                                                                                                                                                                                                          |
|                                                                                                                                                                     | <input type="checkbox"/> Teaching assistants    | Select this code where the majority of the teaching or delivery of the intervention is undertaken by teaching assistants (or teacher's aides, para-professionals, auxiliary teachers, nursery nurses in early years settings and other cognate terms). These will be staff usually employed by a school, but without a full teaching qualification.                                                                          |
|                                                                                                                                                                     | <input type="checkbox"/> Other school staff     | Staff employed by the school, but neither teachers nor teaching assistants (or those in similar paid roles). It includes administrative staff, lunch-time supervisors, facilities staff.                                                                                                                                                                                                                                     |
|                                                                                                                                                                     | <input type="checkbox"/> External teachers      | Teachers or other professional educational staff hired or employed by the research team or delivery organisation.                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                     | <input type="checkbox"/> Parents/carers         | Parents or carers whose main relationship with the intervention is through their parental or caring responsibilities. This includes where parents are working with their own children, or working with other children in the school or educational setting that their own children attend.                                                                                                                                   |
|                                                                                                                                                                     | <input type="checkbox"/> Lay persons/volunteers | Adults (over 18 years) involved as volunteers or undertaking unpaid work who provide the majority of the support to pupils or lead in the delivery of the intervention to students.                                                                                                                                                                                                                                          |
|                                                                                                                                                                     | <input type="checkbox"/> Peers                  | Other students or pupils at the same school or educational setting as the intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socio-economic or cultural background. University students tutoring primary school pupils would not be classified as 'peers'.                                     |
|                                                                                                                                                                     | <input type="checkbox"/> Digital technology     | Include digital technology where the technology has a role in the educational activity, such as where automated feedback or marking is provided, or where it provides an explicit teaching role (intelligent tutoring or the use of explanatory videos) or where differentiated activities are offered or allocated automatically to learners. Incidental use of technology which is usually involved in the normal teaching |

|                                                                                                                                                                                                                        |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                        |                                                | and learning activities of the intervention group should not be included as this has already been recorded.                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                     |
|                                                                                                                                                                                                                        | <input type="checkbox"/> Unclear/not specified | Use this code where there are no details provided of who or how the intervention was delivered or where the information provided does not allow a reasonable inference to be made.                                                                                                                                                                                                                                                                                              |                                                                                                                                     |
| <b>5.8. What was the duration of the intervention?</b>                                                                                                                                                                 |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
|                                                                                                                                       |                                                | Duration of the intervention or approach (from beginning to end). This may differ from the duration of the research project or evaluation which could involve pre- and post-testing periods. Please standardise to weeks and fractional part of weeks (e.g. 2 weeks, 0.5 weeks). Academic year = 38 weeks. <b>Add only numeric data in the info box.</b> Highlight additional information. If there is no information provided, please write "Not specified" in the 'Info' box. | <p>'The intervention lasted for 12 weeks'.</p> <p>This would be entered as 12 in the 'Info' box.</p>                                |
| <b>5.9. What was the frequency of the intervention?</b>                                                                                                                                                                |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
|                                                                                                                                       |                                                | What is the frequency of the intervention (as delivered)? E.g. daily, twice weekly, weekly, monthly. Please use the week as the standard unit (e.g. once a week = 1, twice a week = 2, every fortnight = 0.5). <b>Add only numeric data in the info box. Highlight additional information.</b>                                                                                                                                                                                  | <p>'The intervention was delivered weekly'.</p> <p>This would be entered as 1 in the 'Info' Box.</p>                                |
| <b>5.10. What is the length of intervention sessions?</b>                                                                                                                                                              |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
|                                                                                                                                       |                                                | What is the length in minutes of a typical session? This should be the number of minutes. <b>Add only numeric data in the info box.</b>                                                                                                                                                                                                                                                                                                                                         | <p>'A typical session in the intervention group lasted for half an hour'.</p> <p>This would be entered as 30 in the 'Info' box.</p> |
| <b>5.11. Are implementation details and/or fidelity details provided?</b>                                                                                                                                              |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
| Are details provided about how successfully the intervention was implemented or taken up? Please indicate what type of information by selecting the appropriate checkbox and highlighting relevant text in the report. |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                     |
|                                                                                                                                     | <input type="checkbox"/> Qualitative           | Please select if qualitative details about the intervention or approach are provided, such as describing issues or challenges about implementation, or comments on the training and/or implementation process.                                                                                                                                                                                                                                                                  |                                                                                                                                     |
|                                                                                                                                                                                                                        | <input type="checkbox"/> Quantitative          | Please select if quantitative details about implementation are provided, such as number of schools or teachers trained, or number of sessions attended.                                                                                                                                                                                                                                                                                                                         |                                                                                                                                     |

|                                                                                                                                                                     |                                                                                 |                                                                                                                                                                                      |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                     | <input type="checkbox"/> No implementation details provided                     | No details about the implementation process are provided.                                                                                                                            |  |
| <b>5.12. Are any costs for the intervention reported?</b><br>Are there any financial costs or details reported?                                                     |                                                                                 |                                                                                                                                                                                      |  |
|   | <input type="checkbox"/> Yes (please add details)                               | If this option is selected, please add details as provided in the report(s).                                                                                                         |  |
|                                                                                                                                                                     | <input type="checkbox"/> No                                                     |                                                                                                                                                                                      |  |
| <b>5.13. Who undertook the outcome evaluation?</b><br>Here we are interested in how independent the evaluation was                                                  |                                                                                 |                                                                                                                                                                                      |  |
|   | <input type="checkbox"/> The developer                                          | This is the usual option and should be selected unless the information is unclear or confusing. This is where the researcher or developer evaluated their own programme or approach. |  |
|                                                                                                                                                                     | <input type="checkbox"/> A different organization paid by the developer         | The development team is different from the evaluation team but it is commissioned directly by the developer or researcher who developed the intervention approaches.                 |  |
|                                                                                                                                                                     | <input type="checkbox"/> An organization commissioned independently to evaluate | The research team is different from the evaluation team and commissioned independently (e.g. EEF reports).                                                                           |  |
|                                                                                                                                                                     | <input type="checkbox"/> Unclear/not stated                                     | There is insufficient information about the status of the evaluation research to indicate or infer how independent the evaluation is.                                                |  |
|                                                                                                                                                                     | <input type="checkbox"/> Is this an EEF evaluation?<br>- Yes<br>- No            | If the evaluation was funded by the Education Endowment Foundation please select yes.                                                                                                |  |

# MDE Coding Guide

## Section 6

### **What kind of primary outcomes are provided?**

In Section 6, you will need to provide information about:

- Tests used to measure intervention outcomes
- Curriculum subjects tested
- Other outcomes
- Description of other tested outcomes (if applicable)

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply to codes.



| Question                                                                                                                                                            | Applicable Codes                                                        | Definition                                                                                                                                                                                                                                                                                                                                                                                              | Example                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECTION 6: What kind of primary outcomes are reported?                                                                                                              |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 6.1. What kinds of tests were used?                                                                                                                                 |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| What types of tests were used to measure the intervention outcomes on learning at pupil/student level?                                                              |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | <input type="checkbox"/> Standardised test<br>(Please specify)          | <p>A standardised test is administered and scored in a consistent way. The properties of the test are established through piloting on a group to determine the mean and spread of the scores for a particular target group. Standardised tests are usually named and the properties published.</p> <p><b>Please add the name of the test(s) used, a brief description and any details reported.</b></p> | <p>The <b>Gates-MacGinitie Reading Tests, 1965</b> were administered to participants. Reliability of the Gates-MacGinitie Tests was based on the testing of 1200 children for Primary C and 700 children for Survey E. Both alternate form and split-half reliability coefficients were established. For Primary C, the reliability coefficient ranged from .87 - .91. For Survey E, the reliability coefficient ranged from .81 - .94. No mention of validity was made in the manual. However, as Powell (9) pointed out in his review of the tests, construct validity is suggested through the correlation between scores of pupils above the third grade on the Gates-MacGinitie and the Lorge-Thorndike Intelligence Tests. By implication, reading achievement as measured on the tests is related to, but different from, Verbal I. Q. as measured by Lorge-Thorndike.'</p> <p><i>In this instance, the only information that needs to be highlighted is the name of the test, <u>not reliability/validity information</u>.</i></p> |
|                                                                                                                                                                     | <input type="checkbox"/> Researcher developed test (Please add details) | <p>A test developed or designed for a specific research report. Please add any details as provided in the report(s).</p>                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                     | <input type="checkbox"/> School-developed test (Please add details)     | <p>A test or examination developed and used by a school or schools involved in the research as part of their usual assessment approach. Please add any details as provided in the report(s).</p>                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                     | <input type="checkbox"/> National test or examination (Please specify)  | <p>A test or examination used in regional or national evaluations of student and school performance. These may be optional or compulsory, but are organised and/or administered by the regional or national education administration in a particular jurisdiction.</p>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                     | <input type="checkbox"/> International tests (Please specify)           | <p>Tests used for international comparisons of student performance (e.g. PISA, TIMMS, PIRLS etc.). Please specify and highlight the name of the test.</p>                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## 6.2. Curriculum subjects tested (Select ALL that apply)

If the outcomes relate to the subjects of the school curriculum, record which subjects are included.

|                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|   | <input type="checkbox"/> Literacy (first language) <ul style="list-style-type: none"> <li>- Reading Comprehension</li> <li>- Decoding/Phonics</li> <li>- Spelling</li> <li>- Reading other</li> <li>- Speaking and listening/oral language</li> <li>- Writing</li> </ul> <input type="checkbox"/> Mathematics | <p>Aspects of literacy including speaking and listening, reading and writing. Include study of literature when this is first language study.</p> <p>This may include aspects such as main idea identification and passage comprehension. When a test provides different outcomes e.g. TOWRE (Test of Word Reading Efficacy) provides word attack, word identification, and passage comprehension as main outcome.</p> <p>These measures have a focus on recognising letters and making the correct sounds associated with the letters or letter combinations. They may be referred to as phonological or phonemic awareness.</p> <p>Where the focus is on the correct spelling of words.</p> <p>e.g. phonics, reading fluency, vocabulary comprehension (receptive vocabulary). When a test provides different outcomes e.g. TOWRE (Test of Word Reading Efficiency) provides word attack, word identification and passage comprehension, choose passage comprehension as main outcomes.</p> <p>Speaking and listening or oral language and communication outcomes, including vocabulary use (productive spoken vocabulary).</p> <p>A test of written language including quality, quantity and written vocabulary (range).</p> <p>All aspects of mathematics including number and numerical operations, shape and space (geometry), algebra, data-handling etc.</p> |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|                                                                                                                                                                       |                                                                                           |                                                                                                                                                                                                                                                         |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                       | <input type="checkbox"/> Science                                                          | All general science subjects including physics, chemistry, biology as well as specific subjects such as ecology or astronomy.                                                                                                                           |  |
|                                                                                                                                                                       | <input type="checkbox"/> Social Studies                                                   | Either integrated social studies courses or programmes or separate curriculum areas of social studies (e.g. history, geography, civics, sociology, economics or anthropology).                                                                          |  |
|                                                                                                                                                                       | <input type="checkbox"/> Arts                                                             | Expressive and performing arts, including music, art, drama, drawing, painting, sculpture and the decorative arts.                                                                                                                                      |  |
|                                                                                                                                                                       | <input type="checkbox"/> Languages                                                        | Where the aim is to develop communicative or literacy capability in a language other than the first language or usual language of instruction in the school.                                                                                            |  |
|                                                                                                                                                                       | <input type="checkbox"/> Other curriculum test                                            | Please provide a description of the outcome as reported where it is a test of a school curriculum subject not included in the categories above (e.g. classics).                                                                                         |  |
| <b>6.3. In addition to the primary educational attainment outcome, are there other outcomes reported?</b>                                                             |                                                                                           |                                                                                                                                                                                                                                                         |  |
|     | <input type="checkbox"/> Yes                                                              | If yes, please provide details in the 'Info' box.                                                                                                                                                                                                       |  |
|                                                                                                                                                                       | <input type="checkbox"/> No                                                               |                                                                                                                                                                                                                                                         |  |
| <b>6.4. If yes, which other outcomes are reported?</b>                                                                                                                |                                                                                           |                                                                                                                                                                                                                                                         |  |
|   | <input type="checkbox"/> Cognitive outcomes measures (Please specify)                     | If non-curricular cognitive outcomes are measured, please indicate and specify the outcomes (e.g. reasoning, memory, intelligence etc.). Include the name of the test where possible (e.g. Raven's Matrices, Stanford-Binet Intelligence Scales, etc.). |  |
|                                                                                                                                                                       | <input type="checkbox"/> Other types of student outcomes (Please specify)                 | For example: attendance, measures of behaviour, health status, non-cognitive attitudes/dispositions etc. as assessed through a test or survey                                                                                                           |  |
|                                                                                                                                                                       | <input type="checkbox"/> Other participants (i.e. not students) outcomes (Please specify) | If outcomes are measured and reported for other participants involved in the research (such as teachers or parents), please note which participants and which outcomes have been measured e.g. parental participation.                                  |  |

# Further Information

## School Grade & Pupil Age

The following table can be used as a conversion chart when studies report participant year group or grade instead of age in years.

| Age   | England    |                              | USA          |                             | Australia    |                  | Germany      |                  | Italy/France |                   |
|-------|------------|------------------------------|--------------|-----------------------------|--------------|------------------|--------------|------------------|--------------|-------------------|
| 3-4   | Pre-School |                              |              |                             |              |                  | Kindergarten |                  |              |                   |
| 4-5   | Reception  | Primary School               | Pre K        |                             | Kindergarten |                  |              |                  |              |                   |
| 5-6   | 1          |                              | Kindergarten | Elementary School           | Pre-Primary  |                  |              |                  |              |                   |
| 6-7   | 2          |                              | 1            |                             | 1            | Primary School   | 1            | Primary School   | 1            | Elementary School |
| 7-8   | 3          |                              | 2            |                             | 2            |                  | 2            |                  | 2            |                   |
| 8-9   | 4          |                              | 3            |                             | 3            |                  | 3            |                  | 3            |                   |
| 9-10  | 5          |                              | 4            |                             | 4            |                  | 4            |                  | 4            |                   |
| 10-11 | 6          |                              | 5            |                             | 5            |                  | 5            | Secondary School | 5            |                   |
| 11-12 | 7          | Secondary School             | 6            | Middle School (Junior High) | 6            | Secondary School | 6            |                  | 1            |                   |
| 12-13 | 8          |                              | 7            |                             | 7            |                  | 7            |                  | 2            |                   |
| 13-14 | 9          |                              | 8            |                             | 8            |                  | 8            |                  | 3            |                   |
| 14-15 | 10         |                              | 9            | High School                 | 9            |                  | 9            |                  | 1            |                   |
| 15-16 | 11         |                              | 10           |                             | 10           |                  | 10           |                  | 2            |                   |
| 16-17 | 12         |                              | 11           |                             | 11           |                  |              |                  | 3            |                   |
| 17-18 | 13         | 6 <sup>th</sup> form college | 12           |                             | 12           |                  |              |                  | 4            |                   |

[www.educationista.com/article/equivalent-uk-school-years](http://www.educationista.com/article/equivalent-uk-school-years)

[www.wikipedia.org/wiki/Educational\\_stage](http://www.wikipedia.org/wiki/Educational_stage)

# Further Information

## Double Coding

The following section outlines codes that have been identified as causing disagreement between coders during the review and reconciliation stages of the double-coding process. To support the coding process, these codes have been listed below in order of most frequent disagreement. For each code the code descriptor as provided in EPPI is given with additional information to support the coding process in italics.

### **How is the intervention described?**

EPPI Descriptor: Brief summary of the intervention as provided in the report(s). Please include the rationale for impact on learning if given.

Additional Info: *Main points that need to be included are main tasks of participants, short description of the procedure followed during delivery of the intervention.*

### **What was the level of assignment?**

EPPI Descriptor: At which level was the assignment to intervention and control group conducted?

Additional Info: *Was allocation at individual, class or school level? This can sometimes be unclear or confusing.*

### **Who was responsible for teaching at the point of delivery?**

EPPI Descriptor: Please provide details (e.g. staff involved, training level provided, number/ratio of staff). This should focus on the experience of pupils, rather than any initial training and support.

Additional Info: *Focus on who delivered the intervention under investigation to the pupils every time.*

### **How realistic was the study?**

EPPI Descriptor: Was the intervention implemented under 'real world' conditions? Factors to consider in assessing the 'ecological validity' include where the intervention took place (usual educational setting for educational approaches of this kind) and who taught or led the intervention with the pupils (e.g. did it involve usual teachers or other educational professionals?)

Additional Info: *Here we are looking for how realistic the intervention or approach would be for others to adopt. Laboratory studies or those taught only by additional researchers are less feasible in schools without the support a research project provides.*

### **Are Implementation/fidelity details provided?**

EPPI Descriptor: Are details provided about how successfully the intervention was implemented or taken up? Please indicate what type of information by selecting the appropriate checkbox.

Additional Info: *Most studies do not provide rich details on either implementation or fidelity to the intervention or approach (e.g. for qualitative; potential issues resulting from any training, lack of training time, differences between different people being trained, or lack of clarity in any material or support). We are not collecting extensive data on this but would like to identify studies we can return to that contain such information in the future.*

### **What was the duration of the intervention?**

EPPI Descriptor: Duration of the intervention or approach (from beginning to end). Please specify units (e.g. months, weeks, days). This may differ from the duration of the research project or evaluation which could involve pre- and post-testing periods.

Additional Info: *Here we are looking to the teaching and learning time of the programme or approach e.g. 12 weeks, 2 days, etc. If the duration of the intervention cannot be clearly derived from the text and duration is unclear, please tick the checkbox to indicate this. When providing further information about the duration of an intervention in the 'Info' Box, please enter the specific unit first and then add text.*

### **What type of organisation was responsible for providing the intervention?**

EPPI Descriptor: Please indicate what kind of organisation was responsible for the provision or management and organisation of the intervention.

Additional Info: *These are usually the people who trained staff for delivery (if applicable) or were responsible for developing the intervention.*

### **Is there more than one treatment group?**

EPPI Descriptor: Does the research design include more than one arm or contrast so that more than one estimate of the estimate of effect can be made from a different comparison group?

Additional Info: *Check the number of interventions or versions of the intervention (if applicable). Even when there are a large number of classes or schools, if they are assigned to two groups (intervention-control) then select 'No'.*

### **Frequency of Intervention?**

EPPI Descriptor: What is the frequency of the intervention (as delivered)? E.g. daily, twice weekly, weekly, monthly.

Additional Info: *This is looking at the regularity of the intervention in terms of how often this happens such as twice per week, or three times per month.*

### **How were participants assigned?**

EPPI Descriptor: How were the participants assigned or allocated to their group (i.e. treatment and control)?

Additional Info: *Please indicate how the participants were allocated to the intervention or approach. Randomisation aims to avoid allocation bias which may result in systematic differences between groups on both known and unknown factors. Matching aims to create equal or similar groups (on known covariates). In some studies there is no allocation, but the difference is a result of changes that were happening anyway.*

### **When did the intervention take place?**

EPPI Descriptor: When was the intervention delivered?

Additional Info: *This is about the timing of the intervention in relation to the school day. It is reasonable to make some inferences here, such as most lessons taking place during the school day, or a breakfast club being before school. If you are unsure, please tick the 'Unclear' checkbox.*

### **What kind of tests were used?**

EPPI Descriptor: What type(s) of test(s) were used to measure the intervention outcomes on learning at pupil/student level?

Additional Info: *Researchers may use a number of different tests, but we focus here on the ones that are related only to the outcomes of the intervention under investigation e.g. reading, mathematics at post-test.*

### **Curriculum subjects tested?**

EPPI Descriptor: If the outcomes relate to the subjects of the school curriculum, record which subjects are included.

Additional Info: *Most studies will include outcomes from the school curriculum. Languages should only be used when these are not the medium of instruction for the school or country where the study is set.*

# Further Information

## Resources for Help & Support

If you encounter a problem that you can't solve using the information in this guide, there are a number of options available to you.

For coding-related queries: Consult the troubleshooting flowchart on Slack (type 'troubleshooting' into the search box).

Please use the specific channels on Slack for particular questions:

|                               |                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------|
| <b>#coding_howto</b>          | for copies of coding guides and general information about the data extraction process           |
| <b>#coding_problems</b>       | when your question relates to a specific study you are coding                                   |
| <b>#coding_reconciliation</b> | when your question is either about the reconciliation process or a query about a specific study |
| <b>#problematic_PDFs</b>      | when you have problems with documents that are difficult to read/highlight                      |

For queries related to using EPPI Reviewer software, please contact: [EPPIsupport@ucl.ac.uk](mailto:EPPIsupport@ucl.ac.uk)

There are also a number of training videos for EPPI Reviewer on YouTube.

If you have trouble with EPPI Reviewer freezing or crashing, please record this in the [#crashlog](#) channel on Slack.

For Slack-related queries: [www.slack.com/intl/en-gb/help](https://www.slack.com/intl/en-gb/help)

For all other queries, post on Slack or contact: [eef.database@durham.ac.uk](mailto:eef.database@durham.ac.uk)



## Appendix 5: Effect Size Coding Guide



Durham  
University



Education  
Endowment  
Foundation

EEF EVIDENCE DATABASE  
CODING GUIDE

# EFFECT SIZE DATA EXTRACTION

VERSION 2.0

MARCH 2022

**About this guide:** This guide was created by a team at Durham University for the Education Endowment Foundation's (EEF) Education Database Project to update their Teaching & Learning Toolkit.

Those involved in developing the guide were: Dr Emma Dobson, Tolu Adebajo, Dr Berenice Villanueva-Aguilera, and Professor Steve Higgins, with thanks to other members of the team for providing feedback during its development.



**Attribution-NonCommercial-ShareAlike  
4.0 International (CC BY-NC-SA 4.0)**



# Effect Size Data Extraction

## Contents Page

### Contents

#### Introduction to Data Extraction

- How to code in EPPI Reviewer 5
- How to use the MDE Coding Guide 6
- Pre-coding Checks 7

#### Effect Size Data Extraction Coding Guide

- Section 1: What are the details of the study design? 9
- Section 2: How is the sample described? 14
- Section 3: Outcome details 19
  - Identifying outcomes 20
  - Primary effect size data extraction process 23
  - Effect size calculators 24
  - Posting effect size calculations on EPPI 25
  - Code-set 26
- Section 3: Outcome classification 29
  - Completing the outcome data extraction window 30
  - Classifying outcomes 33
  - Examples: classifying outcomes 34
  - Recoding outcomes 36
  - Code-set 38

#### Further Information

- Resources for Help & Support 50
- Appendix A: Standardised tests 51
- Appendix B: Toolkit strand descriptors 54

# Effect Size Data Extraction

## Coding Guide

This guide provides information about how to use EPPI Reviewer to extract data from studies contained within the EEF Education Evidence Database. Whilst there are descriptions of each of the data extraction codes within EPPI Reviewer, it is sometimes necessary to expand upon these definitions to help when extracting data from a particularly tricky source.

The following guide provides examples and notes to assist with the Effect Size Data Extraction (ESDE) and 'Outcome Coding' process. Each stage of the data extraction process is listed step-by-step to help you. In this way, the guide can be used in conjunction with the coding process in EPPI Reviewer to ensure that you have completed each stage correctly. It should be your first source of help/advice if you are unsure about how to extract and/or record data from a study. If you are still unsure after reading the coding guide, please refer to the troubleshooting flow diagram provided at the end of this document or the relevant channel on the EEF Education Database Slack forum.

### **01. Introduction to Data Extraction**

The Introduction section (pp. 5-8) provides information on how to enter codes into EPPI Reviewer, how to use the coding guide and pre-coding checks that should be conducted before starting the coding process.

### **02. Effect Size Data Extraction Coding Guide**

The Effect Size Data Extraction Coding Guide (pp. 9-49) outlines each stage of the ESDE and Outcome Classification coding process. Each stage of the process is mapped out alongside guidance to support successful completion of each stage.

### **03. Further Information**

The Further Information section (pp. 50-58) provides additional guidance that may be needed to support the coding process. This includes appendices of common standardised tests and descriptions of each strand. There is also a page that signposts resources and contact information for troubleshooting purposes.

# Introduction

## How to code in EPPI Reviewer

There are four ways to extract data when conducting effect size data extraction within EPPI:

1. Selecting or ticking the code checkboxes
2. Highlighting information in the source PDF file and assigning a code
3. Typing in the 'Info' box next to the code
4. Using the 'Outcome Data Extraction' window

The guidance below outlines when to use these different approaches when conducting data extraction. This is also indicated in the coding guide with the different symbols below:



### ***Ticking the code checkbox***

You should use the code checkboxes when:

- A short response is required and the provision of additional detail is unnecessary e.g. when coding for country
- The source PDF file cannot be highlighted. In this instance, text that should have been highlighted will need to be typed out into the 'Info' box along with the source page number.



### ***Highlighting information in the source PDF file and assigning a code***

You should highlight text in the source PDF file and assign a code when:

- More detail is required than can be captured by a checkbox response e.g. when providing a description of an intervention



### ***Typing in the 'Info' Box***

You should type in the 'Info' box when:

- The source PDF file cannot be highlighted (post on the #problematicPDFs Slack channel first to request an accessible/highlightable source PDF file be uploaded to EPPI). If a highlightable source cannot be provided, text that should have been highlighted will need to be typed out into the 'Info' box along with the source page number
- Where numeric data is required



### ***Using the 'Outcome Data Extraction' Window***

You should use the 'Outcome Data Extraction' window when:

- Entering effect size data that will be used for meta-analysis

# Introduction

## How to use the ESDE Coding Guide

This guide is to be used in conjunction with coding in EPPI Reviewer to ensure that each stage of the coding process has been completed and accurate information has been recorded. This coding guide provides a step-by-step outline of the process coders should follow when undertaking data extraction to complete the Effect Size Data Extraction (ESDE) code-set. This process is broken down into its separate components as follows:

### ESDE Section 1

Section 1 asks 4 key questions about the overall design of the study. Most studies are either Individual RCTs or Prospective QEDs, but it is very important to read the study design carefully to determine the study design.

### ESDE Section 2

Section 2 asks 10 questions about more specific elements within the study design. These include sample size, details of how comparable intervention and control group were before the intervention, reporting of attrition, and clustering measures.

### ESDE Section 3

Section 3 requires coders to complete coding for 3 questions about study outcomes, with sub-questions nested within them. Before describing these codes, this guide clarifies how to identify outcomes and choose the most appropriate ones for data extraction. Outcome data will be entered into 'Info Boxes' in EPPI Reviewer and coders will input this data into a form that is accessed via the 'Outcome Data Extraction' window in EPPI. As part of this process, coders need to classify recorded outcomes using the 'Outcome classification' code set. These need to be completed in order to conduct meta-analysis and meta-regressions. Further guidance on how to complete this process is provided.

# Introduction

## Pre-coding checks

Once you have been allocated studies for data extraction, you can view them in EPPI Reviewer. Before you open a PDF source file and begin coding, you should undertake the following initial checks:

1. Does the title of the PDF match the record of the study in EPPI Reviewer?
2. Can you read and highlight the text of the PDF file?
3. Does the text make sense?
4. Have more specific instructions for data extraction been provided?

### ***Does the PDF title match the study record?***

If the title of the study reported in the attached source PDF file does not match the record in EPPI Reviewer, please contact a member of the project team on Slack ([#problematicPDFs](#)).

### ***Can you read and highlight the PDF file?***

Some of the attached PDF source files in EPPI Reviewer have been photocopied from bound journals or theses. As a result, the legibility of these files can be poor. If a file is difficult to read or highlight, please contact a member of the project team on Slack ([#problematicPDFs](#)).

If a file is a particularly large document, it may have been split into multiple files. These will be ordered numerically e.g. Anderson\_1984\_PDF1, Anderson\_1984\_PDF2. Read the files in numerical order and code each PDF separately as you work through the coding process.

### ***Does the text make sense?***

To facilitate coding, some sources have been processed using Optical Character Recognition (OCR). This will have been noted in the 'Comments' section of the study record in EPPI. If there are errors in the OCR process that are preventing legibility/understanding, please contact a member of the project team on Slack ([#problematicPDFs](#)).

### ***Are there more specific instructions for data extraction?***

Always check the 'Comments' section of the study record in EPPI. This may contain important information about the study which has implications for coding. For example, some sources might report multiple outcomes for multiple studies within a single report. If this is the case, guidance will be provided in the 'Comments' section of the

source record (Citation details window) in EPPI, identifying which outcomes/studies should be coded and which should be ignored.

| Item Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                                                                                 |  |    |     |           |        |                |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------|--|----|-----|-----------|--------|----------------|--------------------------|
| <div> <a href="#">First</a> <a href="#">Previous</a> <a href="#">Next</a> <a href="#">Last</a> <span>Item 8 of 100</span> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                                                                                 |  |    |     |           |        |                |                          |
| <div> <a href="#">Item Details</a> <a href="#">Links</a> <a href="#">Arms</a> <a href="#">Timepoints</a> <a href="#">PDF</a> <a href="#">Coding Record</a> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                                                                                 |  |    |     |           |        |                |                          |
| <div>  Ref. Type: Journal, Article </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>Effects of a four-year Follow Through program on economically disadvantaged children</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>Abstract:</b><br>Longitudinal and cross-sectional comparisons were made of 109 economically disadvantaged children in 1 Follow-Through and several non-Follow-Through primary school programs. A longitudinal comparison was also nondisadvantaged children in the Follow-Through program. Clear-cut program effects were found in the 4th yr (grade 3) when Follow-Through children were superior to non-Follow-Through children on IQ achievement. Through program did not result in the economically disadvantaged children attaining the level of intellectual achievement displayed by the nondisadvantaged children. (30 ref) (PsycINFO Database Record (c) 2016 APA |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>Author(s)</b> Abelson Willa D; Zigler Edward ; DeBlasi Cheryl L;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>Journal</b> Journal of Educational Psychology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>Item is</b> Included                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                | <b>ID</b> 41683644                                                              |  |    |     |           |        |                |                          |
| <b>Year</b> 1974                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | <b>ISSN</b>                                                                     |  |    |     |           |        |                |                          |
| <b>Short Title</b> Abelson (1974)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | <b>Pages</b> 756-771                                                            |  |    |     |           |        |                |                          |
| <b>Volume</b> 66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | <b>Issue</b> 5                                                                  |  |    |     |           |        |                |                          |
| <b>Url</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                                                                                 |  |    |     |           |        |                |                          |
| <b>DOI</b> <a href="https://doi.org/10.1037/h0037478">https://doi.org/10.1037/h0037478</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | <b>Availability</b>                                                             |  |    |     |           |        |                |                          |
| <b>Edition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | <b>Publisher</b>                                                                |  |    |     |           |        |                |                          |
| <b>Month</b> October                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                | <b>City</b>                                                                     |  |    |     |           |        |                |                          |
| <b>Country</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | <b>Institution</b>                                                              |  |    |     |           |        |                |                          |
| <b>Comments</b> MDE: Please compare scores between the follow through (FT) vs. the non-follow through (NFT) groups up to the end of Kindergarten (immediate post-test). ESDE: Please combine boys and girls scores using the spreadsheet on Slack (Combining means and SDs) for end of Kindergarten (FT versus non FT), post-test only comparison, with STAR as primary and PPVT as secondary outcome.                                                                                                                                                                                                                                                                        |                | <b>Keywords</b> Follow-Through primary school program IQ & achievement & social |  |    |     |           |        |                |                          |
| Created by: Source: ML_Waxman et al.1986.ris<br>Created on: 05/06/2019                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                | Edited by: Jade Stafford<br>Duplicate ID(s):                                    |  |    |     |           |        |                |                          |
| <div> <div>Upload</div> <div>Documents:</div> <table border="1"> <thead> <tr> <th>Id</th> <th>Ref</th> <th>File Name</th> </tr> </thead> <tbody> <tr> <td>406851</td> <td>Abelson (1974)</td> <td>Abelson et al (1974).pdf</td> </tr> </tbody> </table> </div>                                                                                                                                                                                                                                                                                                                                                                                                                |                |                                                                                 |  | Id | Ref | File Name | 406851 | Abelson (1974) | Abelson et al (1974).pdf |
| Id                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ref            | File Name                                                                       |  |    |     |           |        |                |                          |
| 406851                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Abelson (1974) | Abelson et al (1974).pdf                                                        |  |    |     |           |        |                |                          |

Attached PDF file

Instructions to coders

If you are not sure what data to extract from a study, please contact a member of the project team on Slack (#coding\_problems), with the name of the study, internal ID number and Toolkit strand you are data extracting for.

# ESDE Coding Guide

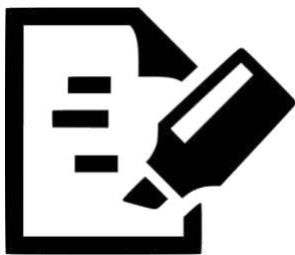
## Section 1

### **What are the details of the study design?**

In Section 1 you will need to identify:

- Study design
- Number of schools in the study
- Number of classes in the study
- If and how randomisation was conducted

This section requires coders to tick applicable coding checkboxes AND highlight relevant text to apply codes.



| Question                                                                          | Applicable Codes                                     | Definition                                                                                                                                                                                                                                                                             | Actions                                                                                  |
|-----------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| SECTION 1: What are the details of the study design?                              |                                                      |                                                                                                                                                                                                                                                                                        |                                                                                          |
| 1.1. What was the study design?                                                   |                                                      |                                                                                                                                                                                                                                                                                        |                                                                                          |
| What type of study design is used for the evaluation of impact? (Choose one)      |                                                      |                                                                                                                                                                                                                                                                                        |                                                                                          |
|  | <input type="checkbox"/> Individual RCT              | An experimental design where individual participants are the unit of randomisation and no provision is made for clustering in the design or analysis.                                                                                                                                  | Highlight the corresponding information in the source and tag with the appropriate code. |
|                                                                                   | <input type="checkbox"/> Cluster RCT                 | An experimental design where school or class is the unit of randomisation (i.e. all pupils in the same school are in the same group and where classes are randomised between schools). The school level variance should be assigned to either intervention or control in the analysis. | Highlight the corresponding information in the source and tag with the appropriate code. |
|                                                                                   | <input type="checkbox"/> Multisite RCT               | An experimental design where both control and intervention pupils may be in the same class or school (within school/class) so that in the analysis the school or class level variance should be shared between intervention and control groups.                                        | Highlight the corresponding information in the source and tag with the appropriate code. |
|                                                                                   | <input type="checkbox"/> Prospective QED             | A quasi-experimental design which is planned in advance. There may be a prospective allocation, but the design may also take advantage of a naturally occurring experiment. There is often some matching but no randomisation.                                                         | Highlight the corresponding information in the source and tag with the appropriate code. |
|                                                                                   | <input type="checkbox"/> Retrospective QED           | A post-hoc natural experiment where matching and/or equivalence is achieved through the design and/or analysis. There is no attempt to manage/control the intervention or phenomenon under investigation.                                                                              | Highlight the corresponding information in the source and tag with the appropriate code. |
|                                                                                   | <input type="checkbox"/> Interrupted time series QED | A design where the same group is treated as control and comparison e.g. ABAB and the counterfactual is created over time.                                                                                                                                                              | Highlight the corresponding information in the source and tag with the appropriate code. |

|                                                                                                                                                                     |                          |                                                                            |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                     | <input type="checkbox"/> | Regression discontinuity with randomisation                                | Prospective regression discontinuity design where participants around the cut off are randomised to treatment or control.                                                                                                                                                                                                                                       | Highlight the corresponding information in the source and tag with the appropriate code.                                           |
|                                                                                                                                                                     | <input type="checkbox"/> | Regression discontinuity - not randomised                                  | RD with non-random allocation design naturally occurring - retrospective matching.                                                                                                                                                                                                                                                                              | Highlight the corresponding information in the source and tag with the appropriate code.                                           |
|                                                                                                                                                                     | <input type="checkbox"/> | Regression discontinuity - naturally occurring                             | Exploits or manipulates a naturally occurring discontinuity to explore the causal effect of an educational intervention or approach. Regression discontinuity design elicits the causal effect of an intervention by assigning a cut-off or threshold above or below which an intervention is assigned.                                                         | Highlight the corresponding information in the source and tag with the appropriate code.                                           |
| 1.2. What is the number of schools involved in the study?                                                                                                           |                          |                                                                            |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                    |
|   |                          | What is the number of schools involved in the intervention group(s)?       | Please provide the number of schools involved in the intervention or versions of the intervention. <b>Please only enter numeric data in the 'Info Box'.</b>                                                                                                                                                                                                     | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |
|                                                                                                                                                                     |                          | What is the number of schools involved in the control or comparison group? | Please provide the number of schools involved in the control group. <b>Please only enter numeric data in the 'Info Box'.</b>                                                                                                                                                                                                                                    | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |
|                                                                                                                                                                     |                          | What is the total number of schools involved?                              | Please record the total number of schools involved in the study. This will be the sum of the intervention and control schools in a cluster randomised trial, but in a multisite trial, where there are control and intervention pupils in each school, it may be the same as for intervention/control. <b>Please only enter numeric data in the 'Info Box'.</b> | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |

|                                                                                                                                                                            |                                                                                                                                                                                                                |                                                                                                                                                             |                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|          | Not provided/ clear/<br>not applicable                                                                                                                                                                         | Please indicate if the number of schools involved is not provided, is unclear, or not applicable (such as in an Outdoor Education study).                   | Select the checkbox and provide an explanation in the 'Info Box'.                                                                  |
| <b>1.3. What is the number of classes involved?</b>                                                                                                                        |                                                                                                                                                                                                                |                                                                                                                                                             |                                                                                                                                    |
|          | What is the total number of classes involved in the intervention group?                                                                                                                                        | Please provide the number of classes involved in the intervention or versions of the intervention. <b>Please only enter numeric data in the 'Info Box'.</b> | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |
|                                                                                                                                                                            | What is the total number of classes involved in the control or comparison group?                                                                                                                               | Please provide the number of classes involved in the control group. <b>Please only enter numeric data in the 'Info Box'.</b>                                | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |
|                                                                                                                                                                            | What is the total number of classes involved?                                                                                                                                                                  | Please record the total number of classes involved in the study. <b>Please only enter numeric data in the 'Info Box'.</b>                                   | Highlight the corresponding information in the source and tag with the appropriate code. Type only numeric data in the 'Info Box'. |
|                                                                                                                                                                            |   Not provided/ unclear/<br>not applicable | Please indicate if the number of classes involved is not provided, is unclear, or not applicable (such as in an Outdoor Education study).                   | Select the checkbox and provide an explanation in the 'Info Box'.                                                                  |
| <b>1.4. Are details of randomisation provided?</b>                                                                                                                         |                                                                                                                                                                                                                |                                                                                                                                                             |                                                                                                                                    |
| <br> | <input type="checkbox"/> Yes (Please specify)                                                                                                                                                                  | Please select if details are provided about how any randomisation was undertaken. Please highlight the relevant section of the study where possible.        | Highlight the corresponding information in the source and tag with the appropriate code.                                           |
|                                                                                                                                                                            | <input type="checkbox"/> Not applicable                                                                                                                                                                        | Please select if the study is not described as a randomised design (e.g. quasi-experimental or naturally occurring experiment).                             | Once a checkbox has been selected, no further action/coding is required in response to this question.                              |

|                                                                                   |                                     |                                                                                                                                                                                                   |                                                                                          |
|-----------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  | <input type="checkbox"/> No/Unclear | Please select is the study is described as randomised but not details are provided or these details are unclear. If the details are unclear, please highlight the relevant section of the report. | Highlight the corresponding information in the source and tag with the appropriate code. |
|-----------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|

# ESDE Coding Guide

## Section 2

### How is the sample described?

In Section 2 you will need to provide information about:

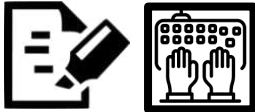
- Sample size for the intervention group
- Sample size for the control group
- Sample sizes for additional intervention groups
- Group differences at baseline
- Variables for comparability
- Comparability analysis
- Attrition
- Clustering

This section requires coders to tick applicable coding checkboxes, highlight relevant text to apply codes and enter numeric data in the 'Info' Box.



| Question                                                                           | Applicable Codes                                    | Definition                                                                                                                                                                                                                                                                               | Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SECTION 2: How is the sample described?                                            |                                                     |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Information about the sample size, groups and comparability                        |                                                     |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.1. What is the sample size for the intervention group?                           |                                                     |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|   | What is the sample size for the intervention group? | Record the initial or assigned sample size for the treatment group in the notes. <b>Please enter numeric data only in the Info box.</b> This should be either the main counterfactual comparison of the intervention or approach for the Toolkit from this study, or the first reported. | <p>Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'.</p> <p>If a study does not provide an exact number of participants per condition, and this is a RCT with 1 treatment and 1 control, please provide your best estimate.</p> <p>Please note that the total sample size for the intervention group may be a single group or a combination depending on the instructions for the study. If the instructions ask you to code two intervention arms (e.g. Feedback 1 and Feedback 2) vs control, please write the total number of participants (T1+T2) here and add in brackets the two treatments separated in question 2.3. For example, if Feedback 1 included 32 participants and Feedback 2 included 33 participants, please write 65 in this question and (32+33) in question 2.3.</p> |
| 2.2. What is the sample size for the control group?                                |                                                     |                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  | What is the sample size for the control group?      | Record the initial or assigned sample size for the control group in the notes. <b>Please enter numeric data only in the Info box.</b>                                                                                                                                                    | <p>Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'.</p> <p>If a study does not provide an exact number of participants per condition, and this is a RCT with 1 treatment and 1 control, please provide your best estimate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|                                                                                                                                                                     |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3. *What is the sample size for the second intervention group?                                                                                                    |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|   | <p>*What is the sample size for the second intervention group?</p>             | <p>Record the initial or assigned sample size for a second or alternative treatment group in the notes (*if there is one). This should be an equally valid comparison of the intervention or approach for the Toolkit as the first intervention group reported above. <b>Please enter numeric data only in the Info box.</b></p>                                                                                                                                                                                   | <p>Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'.</p> <p>If the instructions ask you to code two intervention arms (e.g. Feedback 1 and Feedback 2) vs control, please write in brackets the two treatments separated. For example, if Feedback 1 included 32 participants and Feedback 2 included 33 participants please write (32+33).</p> |
| 2.4. *What is the sample size for the third intervention group?                                                                                                     |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|   | <p>*What is the sample size for the third intervention group?</p>              | <p>Record the initial or assigned sample size for a third or different treatment group in the notes (*if there is one). This should be an equally valid comparison of the intervention or approach for the Toolkit as the first intervention group reported above. <b>Please enter numeric data only in the Info box.</b></p>                                                                                                                                                                                      | <p>Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'.</p>                                                                                                                                                                                                                                                                                        |
| 2.5. Does the study report any group differences at baseline?                                                                                                       |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Is there quantitative information about the similarity of treatment and control groups at the beginning of the intervention?                                        |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                    | <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No/Unclear</p> | <p>Please select if there is information provided about how comparable the intervention and control groups are at the beginning of the study in terms of the analysis. Please also highlight the relevant section of the text where this is possible.</p> <p>Please select this option if there is no information about the baseline comparability of the groups or if this is unclear. If there is information, but it is unclear, please highlight the relevant section of the study where this is possible.</p> | <p>Highlight the corresponding information in the source and tag with the appropriate code.</p>                                                                                                                                                                                                                                                                                                                                 |

|                                                                                                                                                                                                                                          |                                                                                                                                 |                                                                                                                                                                                                                                                              |                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>2.6. Is comparability taken into account in the analysis?</b><br>Are covariates in treatment and control groups assessed, and, if unbalanced, controlled in adjusted analysis?                                                        |                                                                                                                                 |                                                                                                                                                                                                                                                              |                                                                                                                                   |
|                                                                                                                                                         | <input type="checkbox"/> Yes<br><br><input type="checkbox"/> No<br><br><input type="checkbox"/> Unclear or details not provided |                                                                                                                                                                                                                                                              | Highlight the corresponding information in the source and tag with the appropriate code.                                          |
| <b>2.7. Is attrition or drop-out reported?</b><br>If the sample recruited differs from the sample analysed, are the reasons for this reported? Please include details of attrition or drop-out or any pupils excluded from the analysis. |                                                                                                                                 |                                                                                                                                                                                                                                                              |                                                                                                                                   |
|                                                                                                                                                         | <input type="checkbox"/> Yes<br><br><input type="checkbox"/> No<br><br><input type="checkbox"/> Unclear (please add notes)      | Check 'unclear' if the amount of attrition is unclear. Please also add notes about attrition if there is information about different groups or outcomes.                                                                                                     | Highlight the corresponding information in the source and tag with the appropriate code. Add notes in the 'Info' box.             |
| <b>2.8. What is the percentage attrition in the treatment group?</b>                                                                                                                                                                     |                                                                                                                                 |                                                                                                                                                                                                                                                              |                                                                                                                                   |
|                                                                                                                                                        | What is the percentage attrition in the treatment group?                                                                        | Please report the percentage of drop-outs in the intervention group. This is the number of drop-outs in the intervention group divided by the number of participants in the intervention group X 100. <b>Please enter only numeric data in the Info box.</b> | Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'. |
| <b>2.9. Are the variables used for comparability reported?</b><br>Does the study state which variables are used to assess the comparability of the treatment and control groups?                                                         |                                                                                                                                 |                                                                                                                                                                                                                                                              |                                                                                                                                   |
|                                                                                                                                                       | <input type="checkbox"/> Yes<br><br><input type="checkbox"/> No<br><br><input type="checkbox"/> N/A                             | Check 'unclear' if the amount of attrition is unclear. Please also add notes about attrition if there is information about different groups or outcomes.                                                                                                     | Once a checkbox has been selected, no further action/coding is required in response to this question.                             |

|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2.10. If yes, which variables are used for comparability?</b><br>Select the variables considered in assessment of similarity e.g. prior attainment, age, gender, SES, special educational needs, ethnicity.      |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                     |
| <br><br><br><br><br><br><br><br><br><br>          | <input type="checkbox"/> Educational attainment<br><br><input type="checkbox"/> Gender<br><br><input type="checkbox"/> Socio-economic status<br><br><input type="checkbox"/> Special educational needs<br><br><input type="checkbox"/> Other (please specify) | A measure of either direct (e.g. reading comprehension) or indirect (reasoning) educational performance or capability                                                                                                                                                                                                                                                                                                                                                       | Highlight the corresponding information in the source and tag with the appropriate code.<br><br><br><br><br><br><br><br><br><br>Select checkbox and give details in the 'Info' box. |
| <b>2.11. What is the total or overall percentage attrition?</b>                                                                                                                                                     |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                     |
|                                                   | What is the total or overall percentage attrition?                                                                                                                                                                                                            | Please report the percentage of drop-outs or overall attrition in the whole sample. This is the number of drop-outs divided by the initial sample X 100. Or you can calculate as the (initial sample minus the analysed sample) divided by the initial sample X 100 $((N-n)/N) \times 100$ . For more information see: <a href="http://www.ies.ed.gov/ncee/wwc/Docs/OnlineTraining/wwc_training_m2.pdf">www.ies.ed.gov/ncee/wwc/Docs/OnlineTraining/wwc_training_m2.pdf</a> | Highlight the corresponding information in the source and tag with the appropriate code. <b>Type the numeric data in the 'Info Box'.</b>                                            |
| <b>2.12. Is clustering accounted for in the analysis?</b><br>Does analysis take account of clustering? E.g. regression with school or cluster or MLM (multi-level modelling) or HLM (hierarchical linear modelling) |                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                     |
|                                                                                                                                  | <input type="checkbox"/> Yes<br><br><input type="checkbox"/> No<br><br><input type="checkbox"/> Unclear                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Highlight the corresponding information in the source and tag with the appropriate code.                                                                                            |

# ESDE Coding Guide

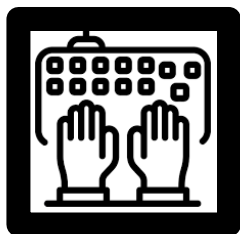
## Section 3

### Outcome Details

In Section 3, you will need to provide information about:

- Descriptive statistics for the intervention group(s)
- Descriptive statistics for the control group(s)
- Follow-up data

This section requires coders to tick applicable coding checkboxes AND enter numeric data in the 'Info' Boxes.



Before outlining the codes for this section, this guide clarifies how to identify outcomes and choose the most appropriate ones for data extraction as well as listing some useful tools to use if study outcomes need to be converted before being uploaded to EPPI Reviewer.

# Outcome Details

## Identifying Outcomes

If you have not been given specific instructions about which outcomes need to be extracted from the study (in the 'Comments' section for the record in EPPI Reviewer), you will need to identify the study's primary outcome for the database.

### Key Principles for Primary Outcomes

- A good test of the impact of the intervention for the appropriate EEF Toolkit strand (e.g. 'Feedback' or 'Peer Tutoring')
- An appropriate measure of educational attainment (such as standardised tests or exams)
- As direct and fair a measure as possible (which is appropriate for the intervention)

### **How do I know whether an outcome is a good test of the impact of the intervention for the EEF Toolkit?**

The main issue to consider is the alignment of the study with the EEF Toolkit in terms of the research design and research questions. We are looking for the best estimate of the difference between pupils experiencing the intervention or approach with the most appropriate counterfactual condition (those not experiencing the intervention or approach).

### **How do I know whether an outcome is an appropriate measure of educational attainment?**

Next, we need to identify which curricular or cognitive outcome is most appropriate. In general, we prefer outcomes which are good indicators of overall educational attainment, such as reading comprehension or a standardised test of mathematics. Standardised tests or national tests and examinations are better overall indicators of educational performance than researcher-designed measures or teacher-designed tests.

### **How do I know whether an outcome is as direct and fair a measure as possible?**

Simple outcomes rather than combined ones across subjects are usually preferable (so reading or mathematics rather than an overall score that combines both).

## **Important Considerations**

Identifying appropriate outcomes is not always straightforward. In a pedagogical intervention where the focus is on general strategies and is taught well across several curriculum subjects, it can be difficult to decide which is the primary outcome for the Toolkit.

For example, peer tutoring delivered in reading and mathematics may have one designated as the primary and the other as the secondary outcome. Alternatively, these may be combined and the average reported. It may be appropriate to combine outcomes when they are equally valid possible outcomes for an intervention. In this case, the separate scores for each subject would also need to be recorded so that subject-specific meta-analysis can be conducted.

The research literature distinguishes between treatment inherent and treatment independent measures. In practice, these can be hard to separate. Criterion-referenced measures can be particularly problematic here. So, for example, in a spaced-learning intervention in history, a school history knowledge test is only fair if the control group were also being taught the same topic in history.

Another example might be a phonics intervention where the intervention group are taught letter sounds and compared with a business-as-usual control. Here a letter recognition test may not provide a fair comparison as it is likely to over-estimate the impact on reading (as opposed to impact on letter recognition). In fact, it might be a better measure of implementation fidelity.

On the other hand, evaluating the impact of teaching number fact recall with a standardized test of mathematics may similarly under-estimate effects if number forms only a limited part of the test.

## **Some Examples**

1. In a study of self-regulated learning in writing for primary school pupils, a researcher-designed writing test and standardized test of mathematics were both used at the beginning of the intervention. The standardized test of mathematics was used to investigate the far transfer effects of SRL. The primary outcome here would be the writing results. You could add in the 'Info' Box that there is additional outcome data available.
2. In an evaluation of a phonics intervention, a series of outcome measures were used including letter recognition, reading fluency and a picture vocabulary test. There was no overall assessment of reading comprehension. Reading fluency was designated as the primary outcome as the researchers had used a subscale of a standardized reading test. In this case, the different reading measures could be combined to provide an overall measure of reading capability. It would be worth noting this and alerting the project team. This presents a real challenge as the letter recognition test is arguably treatment inherent so may over-estimate the impact of the intervention on reading outcomes. It is difficult to see why there would be a direct impact from a phonics intervention on vocabulary. The measure is often used as a broader indicator of literacy knowledge.

3. In a thinking skills intervention taught in secondary schools through separate lessons, the primary outcome reported in the study was the impact on Raven's Matrices (a standardised test of reasoning) assessed at the end of the intervention. Impact was also assessed on English and Mathematics using the school's end of year exam results (two terms later).  
In this case, the cognitive outcome was used as the primary outcome and the exam results were added as secondary measures. The tension here is between what may seem a more treatment-inherent measure (reasoning) set against the more ecologically valid, but indirect and delayed curriculum measures.

### **Key Points to Consider when Identifying Outcomes**

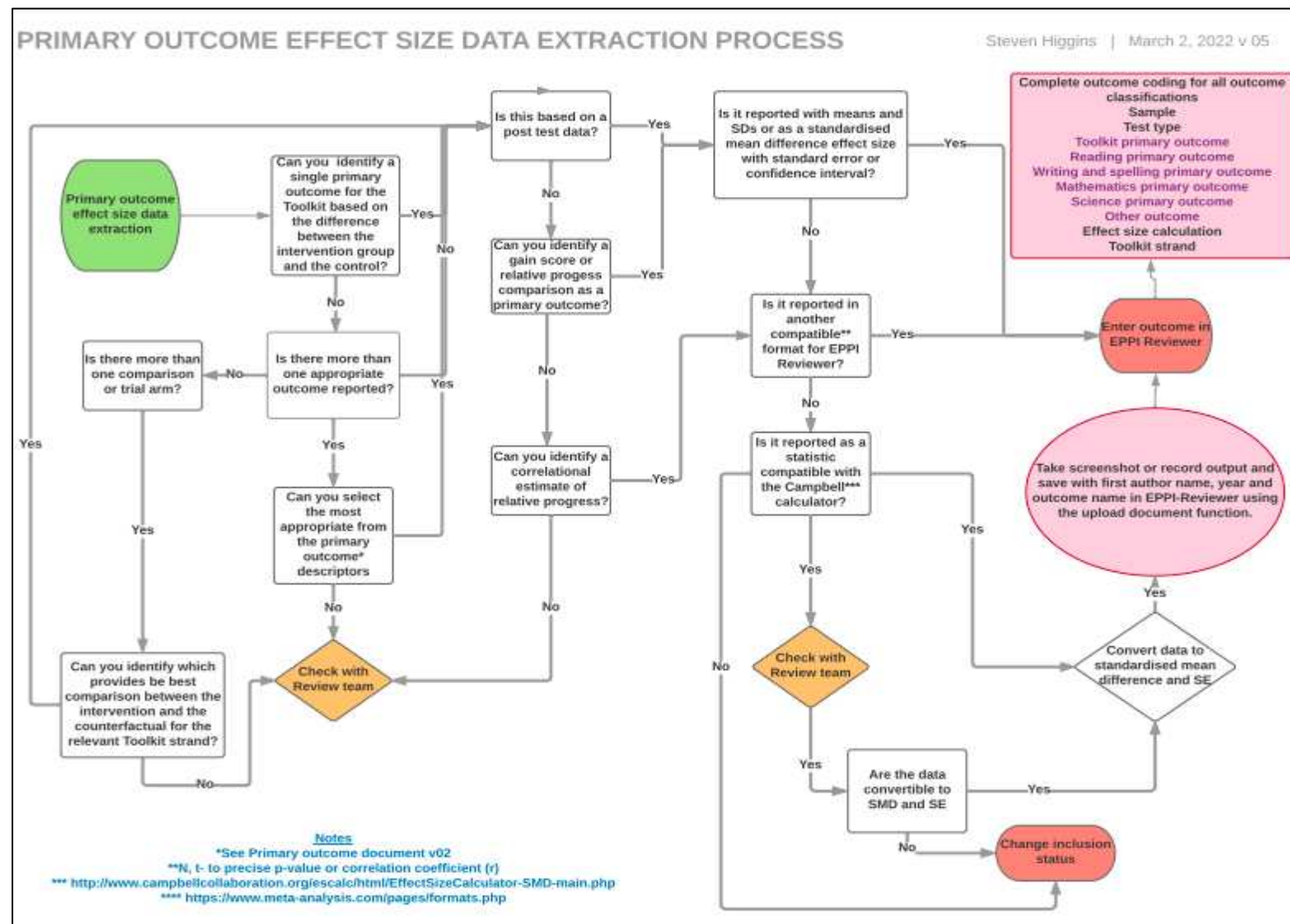
- The primary outcome for the Toolkit is not necessarily the same as the primary outcome for the study.
- The primary outcome will usually be in the same subject or curriculum areas as the delivery of the intervention or approach.
- Look for standardised tests in reading, mathematics, science or other curriculum subjects.
- Choose standardised measures or national test and examination results over researcher-designed tests or criterion-referenced measures, unless there are clear reasons not to do so.
- Any secondary outcomes should be an appropriate outcome measure and a fair indicator of the impact of the intervention in terms of the design of the study and the way it was delivered in schools.
- Designate a cognitive test as a primary outcome only when this is either the only outcome available, or provides the fairest test of the intervention.
- Record your reasons in the 'Info' Box if you have had to make a choice between several different options.

If in doubt, contact the team!

# Outcome Details

## Primary Effect Size Data Extraction Process

When you have chosen an appropriate outcome, use this flowchart to consider how it needs to be recorded.



## Effect Size Calculators and Other Useful Data Conversion Tools

The tools below are useful if outcomes need an additional step before an overall Effect Size (ES) for the intervention can be input and uploaded to EPPI Reviewer. Using these tools will usually require you to upload calculations to EPPI

## Online Calculators for Effect Size Conversions

## The Campbell Calculator

[www.campbellcollaboration.org/research-resources/effect-size-calculator.html](http://www.campbellcollaboration.org/research-resources/effect-size-calculator.html)

## Lenhard & Lenhard's Psychometrica

[www.psychometrica.de/effect\\_size.html](http://www.psychometrica.de/effect_size.html)

## Lee Becker Effect Size Calculator

[www.uccs.edu/lbecker/](http://www.uccs.edu/lbecker/)

## Resources on Slack

## 95% Confidence Interval Converter

An Excel spreadsheet available on Slack, search for “95% confidence interval converter”.

|    | A                           | B        | C          | D        | E          | F | G | H                                       | I | J |
|----|-----------------------------|----------|------------|----------|------------|---|---|-----------------------------------------|---|---|
| 3  | 1) ES and CI to SE          |          |            |          |            |   |   |                                         |   |   |
| 4  | Effect size                 | CI lower | CI upper   | SE       |            |   |   | SE = (upper limit - lower limit) / 3.92 |   |   |
| 5  |                             | 0.307    | 0.0178     | 0.5962   | 0.14755102 |   |   |                                         |   |   |
| 6  |                             |          |            |          | 0          |   |   |                                         |   |   |
| 7  |                             |          |            |          |            |   |   |                                         |   |   |
| 8  |                             |          |            |          |            |   |   |                                         |   |   |
| 9  | ES and SE to CI             |          |            |          |            |   |   |                                         |   |   |
| 10 | Effect size                 | SE       | CI lower   | CI upper |            |   |   |                                         |   |   |
| 11 |                             | 0.1596   | 0.12405612 | -0.08355 | 0.40275    |   |   |                                         |   |   |
| 12 |                             |          |            |          |            |   |   |                                         |   |   |
| 13 |                             |          |            |          |            |   |   |                                         |   |   |
| 14 | SE from p-value (estimated) |          |            |          |            |   |   |                                         |   |   |
| 15 |                             |          |            |          |            |   |   |                                         |   |   |
| 16 | P value to Z                |          |            |          | SE         |   |   | SE = intervention effect estimate / Z   |   |   |
| 17 | p-value                     | Z        |            |          |            |   |   |                                         |   |   |
| 18 |                             | 0.22     | 1.22652812 |          |            |   |   |                                         |   |   |
| 19 |                             |          |            |          |            |   |   |                                         |   |   |
| 20 | Effect size                 |          |            |          |            |   |   |                                         |   |   |
| 21 |                             | 1.84     |            |          | 1.50036944 |   |   |                                         |   |   |
| 22 |                             |          |            |          |            |   |   |                                         |   |   |
| 23 |                             |          |            |          |            |   |   |                                         |   |   |
| 24 |                             |          |            |          |            |   |   |                                         |   |   |
| 25 |                             |          |            |          |            |   |   |                                         |   |   |
| 26 |                             |          |            |          |            |   |   |                                         |   |   |
| 27 |                             |          |            |          |            |   |   |                                         |   |   |
| 28 |                             |          |            |          |            |   |   |                                         |   |   |
| 29 |                             |          |            |          |            |   |   |                                         |   |   |
| 30 |                             |          |            |          |            |   |   |                                         |   |   |
| 31 |                             |          |            |          |            |   |   |                                         |   |   |
| 32 |                             |          |            |          |            |   |   |                                         |   |   |
| 33 |                             |          |            |          |            |   |   |                                         |   |   |
| 34 |                             |          |            |          |            |   |   |                                         |   |   |
| 35 |                             |          |            |          |            |   |   |                                         |   |   |
| 36 |                             |          |            |          |            |   |   |                                         |   |   |
| 37 |                             |          |            |          |            |   |   |                                         |   |   |
| 38 |                             |          |            |          |            |   |   |                                         |   |   |
| 39 |                             |          |            |          |            |   |   |                                         |   |   |

**Instructions**

To find the standard error from the confidence intervals, use [1]. Enter the Effect Size, CI lower and CI upper in the pale blue cells and the standard error will be calculated in red.

To generate confidence intervals from a standard error use [2]. Enter the effect size and the standard error in the pale yellow cells and the lower and upper confidence intervals will appear in red.

To estimate a standard error from a p-value, use [3]. Enter the precise p-value in the pink cell and the effect size in the grey cell.

*NB all of these calculations assume 0.05 or 95% confidence levels.*

The screenshot shows a spreadsheet with the following structure:

- Columns:** A, B, C, D, E, F, G, H, I, J, K, L, M
- Rows:** 1 to 24
- Row 1:** "Combining groups" (A1), "Group 1" (B1), "Group 2" (C1), "Combined 2" (D1)
- Row 2:** "Sample size" (A2), "n" (B2), "n" (C2), "n" (D2)
- Row 3:** "Mean" (A3), "x̄" (B3), "x̄" (C3), "x̄" (D3)
- Row 4:** "SD" (A4), "s" (B4), "s" (C4), "s" (D4)
- Row 5:** "Group 3" (A5), "Group 4" (B5), "Group 5" (C5), "Group 6" (D5)
- Row 6:** "Sample size" (A6), "n" (B6), "n" (C6), "n" (D6)
- Row 7:** "Mean" (A7), "x̄" (B7), "x̄" (C7), "x̄" (D7)
- Row 8:** "SD" (A8), "s" (B8), "s" (C8), "s" (D8)
- Row 9:** "Group 7" (A9), "Group 8" (B9), "Group 9" (C9), "Group 10" (D9)
- Row 10:** "Sample size" (A10), "n" (B10), "n" (C10), "n" (D10)
- Row 11:** "Mean" (A11), "x̄" (B11), "x̄" (C11), "x̄" (D11)
- Row 12:** "SD" (A12), "s" (B12), "s" (C12), "s" (D12)
- Row 13:** "Group 11" (A13), "Group 12" (B13), "Group 13" (C13), "Group 14" (D13)
- Row 14:** "Sample size" (A14), "n" (B14), "n" (C14), "n" (D14)
- Row 15:** "Mean" (A15), "x̄" (B15), "x̄" (C15), "x̄" (D15)
- Row 16:** "SD" (A16), "s" (B16), "s" (C16), "s" (D16)
- Row 17:** "Group 15" (A17), "Group 16" (B17), "Group 17" (C17), "Group 18" (D17)
- Row 18:** "Sample size" (A18), "n" (B18), "n" (C18), "n" (D18)
- Row 19:** "Mean" (A19), "x̄" (B19), "x̄" (C19), "x̄" (D19)
- Row 20:** "SD" (A20), "s" (B20), "s" (C20), "s" (D20)
- Row 21:** "Group 19" (A21), "Group 20" (B21), "Group 21" (C21), "Group 22" (D21)
- Row 22:** "Sample size" (A22), "n" (B22), "n" (C22), "n" (D22)
- Row 23:** "Mean" (A23), "x̄" (B23), "x̄" (C23), "x̄" (D23)
- Row 24:** "SD" (A24), "s" (B24), "s" (C24), "s" (D24)

The formula bar shows the calculation for the combined SD:  $=\text{SQRT}((5*(1.5^2)+(5*(1.5^2)+(5*(1.5^2)+(5*(1.5^2)+(5*(1.5^2)+(5*(1.5^2))/(5+5+5+5+5+5))$

## Combining Standard Deviations

Useful for combining means and Standard Deviations from multiple groups, search on Slack for “combining SDs\_v02”. Upload results to EPPI using the following labelling conventions: Short title + desc. (e.g. "Gong 2009 Groups Effect Size")

# Outcome Details

## Posting Effect Size Calculations on EPPI

To provide a transparent record for effect sizes logged in EPPI Reviewer, any calculations undertaken on other websites or on a spreadsheet need to be uploaded by coders and archived by the project team. If you have used an effect size calculator to convert a reported outcome or one of the project spreadsheets, please take a screenshot of the calculation and label the calculation screenshot with the short title of the study you have coded and the outcome name, for example “Allsopp\_1995\_Algebra\_tutees”. Then you will need to upload the screenshot to EPPI.

Go into the Item details tab of each record and click the “Upload” button at the bottom of the page. This will trigger a new window to open that you can use to upload the screenshot of the effect size calculation from your computer.

Comments

Keywords Academic Achievement Elementary Secondary Education Foreign Countries Listening Listening Comprehension Reading Comprehension Reading Difficulties Reading Research

Created by: Source: OL\_Davis\_2010.risCreated on: 28/10/2018Edited by: Jade StaffordDuplicate IDs: 40307450Edited on: 13/03/2021

Upload

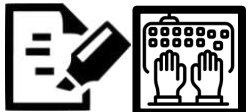
Documents:

| Id     | Ref              | File Name               | Actions                                              |
|--------|------------------|-------------------------|------------------------------------------------------|
| 356568 | Aarnoutse (1997) | Aarnoutse etal_1997.pdf | <div><div></div><div>Download</div><div></div></div> |

| Question                                                                                                                                                                         | Applicable Codes                                                                                | Definition                                                                                                                                                                                                                                                                                                                                                         | Actions                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>SECTION 3: Outcome details</b>                                                                                                                                                |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |
| <b>3.1. Outcomes (CODE AT STUDY LEVEL)</b>                                                                                                                                       |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |
| This section describes the primary Toolkit outcome and asks whether there is follow-up data for the study. It should be coded at study level (i.e. not from the Outcome button). |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |
|                | <input type="checkbox"/> Primary outcome                                                        | Please indicate the primary outcome and enter additional data using the 'Outcomes' box. The primary outcome should be the outcome most relevant to the Toolkit strand(s) in terms of educational impact, such as standardised tests of reading or mathematics (for literacy or mathematics interventions) or national test examination results.                    | Provide further detail in 'Info' box.                                                                 |
|                                                                                                                                                                                  | <input type="checkbox"/> Secondary outcome                                                      | Please add secondary outcomes in this section where they represent a fair test of the impact of the evaluation at post-test. This should not include delayed or follow-up tests, or outcomes used to check the specificity of impact (e.g. a maths test used to control for the intervention effect in a literacy intervention) or checking for transfer outcomes. | Provide further detail in 'Info' box.                                                                 |
|                                                                                                                                                                                  | <input type="checkbox"/> SES/FSM outcome                                                        | If a separate effect is reported for low socio-economic status or free or reduced price school meals pupils please add here.                                                                                                                                                                                                                                       | Provide further detail in 'Info' box.                                                                 |
| <b>3.2. Are descriptive statistics reported for the primary outcome?</b>                                                                                                         |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |
|                                                                                                 | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input type="checkbox"/> Unclear |                                                                                                                                                                                                                                                                                                                                                                    | Once a checkbox has been selected, no further action/coding is required in response to this question. |

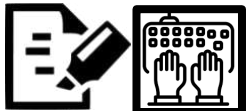
### 3.2.1. If yes, please add for the intervention\* group

Descriptive statistics for the intervention group. \*If there is more than one intervention group please add this below

|                                                                                   |                                                                      |                                                                                                                                                                                                    |                                                                                                                                   |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|  | <input type="checkbox"/> Number (n)                                  | What is the number for the intervention group in the data analysed for this outcome? <b>Add numeric data only to the info box.</b>                                                                 | Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'. |
|                                                                                   | <input type="checkbox"/> Pre-test mean                               | Please record the pre-test mean (if provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b>                                                           |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Pre-test standard deviation                 | Please record the pre-test standard deviation (If provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b>                                             |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Post-test mean                              | Please report the post-test standard mean (If provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b>                                                 |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Post-test standard deviation                | Please report the post-test standard deviation (If provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b>                                            |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Gain score mean (if reported)               | Please add the gain score (pre-test to post-test) mean for the intervention group. Add numeric data only to the info box.                                                                          |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Gain score standard deviation (if reported) | Please add the gain score (pre-test to post-test) standard deviation for the intervention group. Add numeric data only to the info box.                                                            |                                                                                                                                   |
|                                                                                   | <input type="checkbox"/> Any other information?                      | Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)) or use to add notes about the numeric data in the categories above. |                                                                                                                                   |

### 3.2.2. If yes, please add for the control group

Descriptive statistics for the control group

|                                                                                     |                                                      |                                                                                                                                                    |                                                                                                                                   |
|-------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
|  | <input type="checkbox"/> Number (n)                  | What is the number for the control group in the data analysed for this outcome? <b>Add numeric data only to the info box.</b>                      | Highlight the corresponding information in the source and tag with the appropriate code. Type the numeric data in the 'Info Box'. |
|                                                                                     | <input type="checkbox"/> Pre-test mean               | Please record the pre-test mean (if provided) for the control group for this outcome. <b>Add numeric data only to the info box.</b>                |                                                                                                                                   |
|                                                                                     | <input type="checkbox"/> Pre-test standard deviation | Please record the pre-test standard deviation (If provided) for the control group for this outcome. <b>Add numeric data only to the info box.</b>  |                                                                                                                                   |
|                                                                                     | <input type="checkbox"/> Post-test mean              | Please report the post-test standard mean (If provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b> |                                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |                                                                                                                                                                                                    |                                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Post-test standard deviation                | Please report the post-test standard deviation (If provided) for the intervention group for this outcome. <b>Add numeric data only to the info box.</b>                                            |                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Gain score mean (if reported)               | Please add the gain score (pre-test to post-test) mean for the intervention group. Add numeric data only to the info box.                                                                          |                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Gain score standard deviation (if reported) | Please add the gain score (pre-test to post-test) standard deviation for the intervention group. Add numeric data only to the info box.                                                            |                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Any other information?                      | Please add any other statistical information reported about this outcome for the intervention group (e.g. standard error (SE)) or use to add notes about the numeric data in the categories above. |                                                                                          |  |
| <b>NB. If applicable, add information for any second/third groups for control or intervention using the same instructions given for codes 3.2.1 and 3.2.2.</b><br>3.2.3. <u>If yes, please add for a second intervention group (if needed)</u><br>3.2.4. <u>If yes, please add for a second control group (if needed)</u><br>3.2.5. <u>If yes, please add for a third intervention group (if needed)</u><br>3.2.6. <u>If yes, please add for a third control group (if needed)</u> |                                                                      |                                                                                                                                                                                                    |                                                                                          |  |
| <b>3.3. Is there follow-up data?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                      |                                                                                                                                                                                                    |                                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> Yes                                         | Please provide details of any assessment to measure long lasting effects (e.g. delayed post-test or long-term follow-up).                                                                          | Highlight the corresponding information in the source and tag with the appropriate code. |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> No                                          |                                                                                                                                                                                                    |                                                                                          |  |

# ESDE Coding Guide

## Section 3

### Outcome Classification

Once you have completed coding for descriptive data for intervention and control groups and recorded whether the study includes any follow-up data, you will then need to input numerical outcome data into EPPI Reviewer using the 'Outcome Data Extraction' window. As well as inputting numerical data into the 'Outcome Data Extraction' window, you will also need to classify outcomes by type. This needs to be completed in order to conduct meta-analysis and meta-regressions.

Upon opening the 'Outcome Data Extraction' window, you will need to provide information about:

- Intervention title
- Intervention description
- Intervention group results
- Comparison group results
- Outcome type
- Outcome classification



Before outlining the codes for this section, this guide clarifies how to open and input data into the 'Outcome Data Extraction' window and choose the most appropriate classification for identified study outcomes.

# Outcome Classification

## Completing the 'Outcome Data Extraction' Window

To complete the 'Outcome Data Extraction' window you will need to open the ESDE code-set and navigate to 'Section 3 Outcome details', 'Outcomes' and click the 'Outcome' button to enter data for either the primary, secondary or SES/FSM outcome. This will open the 'Outcome Data Extraction' window.

The screenshot shows the 'Item Details' page for a study titled 'Diagnosis and Treatment of Reading Disabilities Based on the Component Model of Reading: An Alternative to the Discrepancy Model of LD'. The left sidebar contains a tree view of the study's structure. Under 'Section 3 Outcome details', the 'Outcomes (CODE AT STUDY LEVEL)' section is expanded, and the 'Outcome' button is highlighted with a red circle. Other buttons like 'Primary outcome', 'Secondary outcome', and 'SES/FSM outcome' are also visible.

From here, you can add a new outcome by clicking the 'New Outcome' button.

This screenshot shows the same 'Item Details' page, but with the 'New Outcome' button highlighted with a red circle in the left sidebar. The button is located below the 'Outcome' button. The main content area of the page remains the same, displaying the study details and abstract.

This will open a form for you to complete as follows:

**EPPI Beta**

**Item Details**

First Previous Next Last Item 3 of 100

Show terms? Auto Advance? Close/back

Item Details Links Arms Timepoints PDF Coding Record

Ref. type: Journal, Article Find on Show optional fields? Edit

**Diagnosis and Treatment of Reading Disabilities Based on the Component Model of Reading: An Alternative to the Discrepancy Model of LD**

**Abstract:**  
Currently, learning disabilities (LD) are diagnosed on the basis of the discrepancy between students' IQ and reading achievement scores. Students diagnosed with LD often receive remedial instruction in resource rooms. The available evidence suggests that the educational policy based on this discrepancy model has not yielded satisfactory results. This has led researchers to try other paradigms, such as the component model and response to intervention, for dealing with children with reading disabilities. The component model of reading (CMR) described in the present article identifies the reading component that is the source of reading difficulty and targets instruction at that component. Study 1 describes the CMR and reports on its validity. Study 2 describes the successful outcome of a 7-year CMR-based reading instruction program. Compared to the discrepancy model, the CMR has demonstrated several advantages. [PUBLICATION ABSTRACT]

**Author(s)** Aaron P G; Joshi R; Malatesha; Gooden Regina; Bentum Kwesi E;

**Journal** Journal of Learning Disabilities

**Item is** Included **ID** 46937178 **Imported ID** 11784

**Year** 2008 **ISSN** 00222194

**Short Title** Aaron (2008) **Pages** 67-84

**Volume** 41 **Issue** 1

**Url** <http://ezphost.dur.ac.uk/login?url=https://search.proquest.com/docview/194230027?accountid=14533> <http://palimpsest.dur.ac.uk/openurl>

**DOI** <http://dx.doi.org/10.1177/0022219407310838> **Availability**

**Edition** **Publisher**

**Month** **City**

**Country** **Institution**

**Comments** Name - Indiana State University; Cambridge University Press **Keywords** Medical Sciences Studies Problems Methods Learning

**Add Title:**  
Provide the name of the test outcome or test type and the intervention group (this acts as a check when we run the meta-analysis - e.g. Mathematics accuracy - Peer tutoring.)

**Add Description:**  
Provide a fuller description of the outcome test (e.g. "Post-test adjusted mean score for Multiplication automaticity - Peer tutoring group. 2-minute timed test of 100 one-digit by one-digit multiplication facts." )

**Select one according to test focus**

- Literacy: reading comprehension
- Arts
- Cognitive: other
- Cognitive: reasoning
- Combined subjects
- Curriculum: other
- Languages
- Literacy: decision/phonics
- Literacy: decision/comprehension
- Literacy: reading other
- Literacy: speaking and listening/oral language
- Literacy: spelling
- Literacy: writing
- Mathematics
- Science
- Social Studies

**Select one according to comparison**

- With business as usual
- With active control
- With business as usual
- With no equivalent teaching

**Group 1 = intervention Group 2 = control**

**Select where the analysis has not taken account of any in the clustering in design.**

**Select one**

- Primary outcome
- Primary outcome
- Secondary outcome(s)
- SES/FSM outcome

**Make sure you add the Outcome classifications!**  
Sample  
Test type  
Effect size calculation  
Toolkit

In addition to classifying outcomes as primary or secondary in the outcome coding window, a further classification is needed to undertake subject-specific meta-analysis. At the bottom of the data extraction form, you will see the following:

The screenshot shows the data extraction form for the 'Journal of Learning Disabilities'. The left panel contains input fields for various effect sizes (SMD, r, odds ratio, risk ratio, risk difference, mean difference) and their standard errors. Below these is a section titled 'Correct for unit of analysis error' with a 'Go' button. A red circle highlights a message: 'You can further characterise this outcome by associating it with any code in the current codeset: EEF Toolkit effect size data extraction v 1.1a October 2020 (Shared)'. Below this is a 'Save Outcome' button, which is also circled in red. The right panel displays bibliographic information, including the journal name, year (2008), volume (41), issue (1), and a list of keywords. At the bottom, there is a 'Documents' table with two entries: 'Aaron (2008)' and 'Aaron (2008)'. Each entry has a 'Download' button and a 'Duplicate ID' button.

You will need to assign additional codes here to classify outcomes ready for meta-analysis. Codes need to be assigned from the 'Outcome classification' code-set (sample, test type, effect size calculation, outcome type and Toolkit strand).

This screenshot shows the same data extraction form, but with the 'Outcome classification' section expanded. The left panel now shows a list of codes to be assigned to the outcome, including 'Section 1 What are the details of the study design?', 'Section 2 How is the sample described?', and 'Section 3 Outcome details'. Under 'Section 3 Outcome details', there are sub-sections for 'Outcomes (CODE AT STUDY LEVEL)', 'Outcome classification (CODE FROM OUTCOME BUTTON)', and 'Outcome labels (CODE FROM OUTCOME BUTTON)'. The 'Save Outcome' button is again circled in red. The right panel remains the same, showing bibliographic information and the 'Documents' table.

When you have finished completing the form and assigning 'Outcome classification' codes, click the 'Save outcome' button.

You will need to complete this process for every outcome that needs to be recorded for a study.

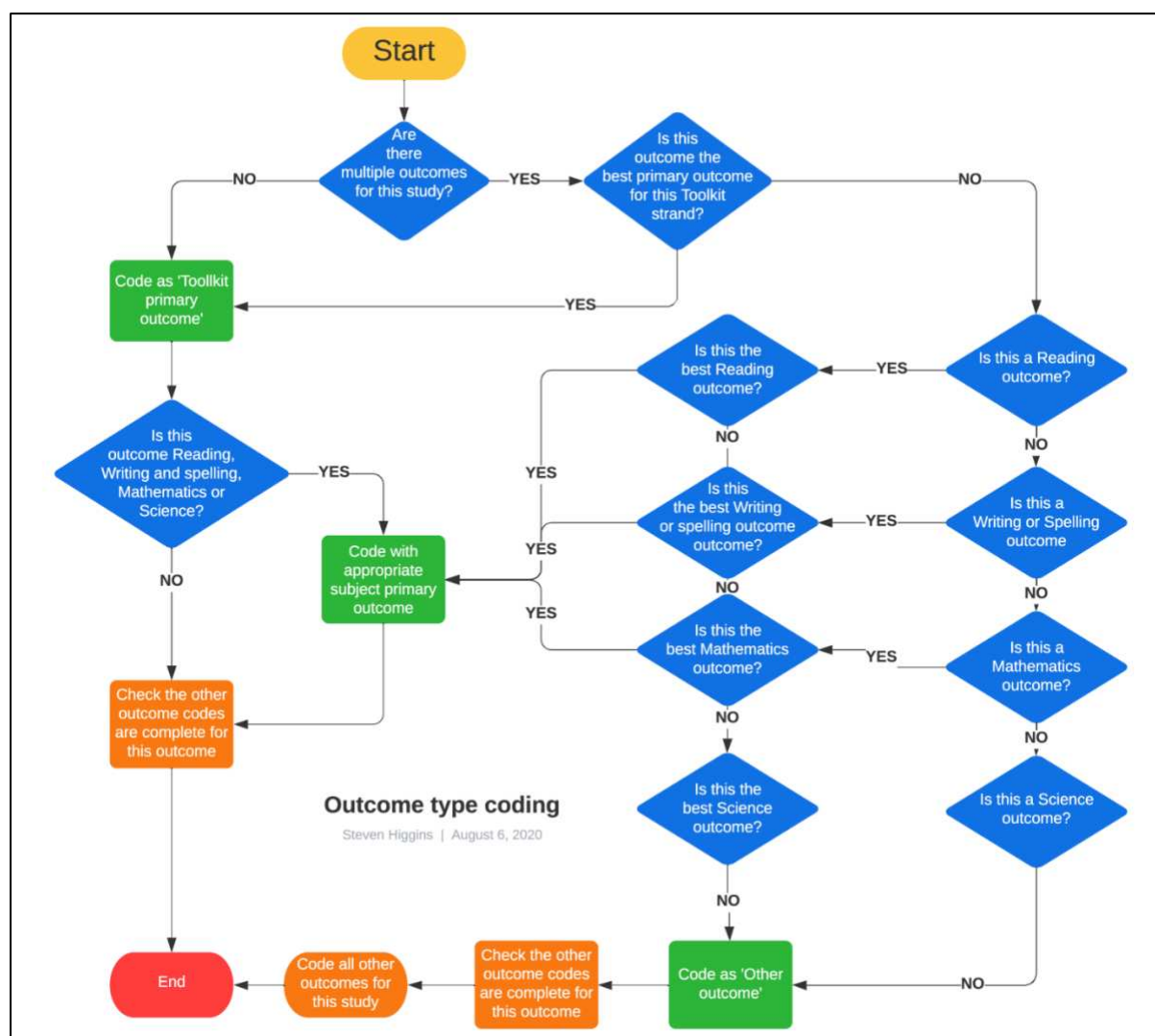
# Outcome Classification

## Classifying Outcomes

One (and usually only one) outcome from each data extraction for a study should be selected as the 'Toolkit primary outcome'. **This code is only entered once for one outcome per data extraction for a study** in all scenarios. If this outcome is Reading, Writing and Spelling, Mathematics or Science, it must **also be selected as the subject-specific primary outcome**.

- For most studies, the Toolkit primary outcome will be reading comprehension so both 'Toolkit primary outcome' and 'Reading primary outcome' should be selected for the best overall reading comprehension measure.
- If a study only has Mathematics outcomes, then the best overall Mathematics measure should be identified and coded for both 'Toolkit primary outcome' and 'Mathematics primary outcome'.
- Additional examples are provided on pages 31-32.

The flowchart below gives an overview of this process. If you have questions about how to correctly classify an outcome, contact the project team using the #quant\_coding Slack channel.



# Outcome Classification

## Examples: Classifying Outcomes

### Example 1:

In this study, Science has been selected as the primary outcome. It will need to be classified as the 'Toolkit primary outcome' and 'Science primary outcome'.

The screenshot shows the PPI Data form for 'VERB Science content test'. The outcome type is 'Manual entry'. The outcome is 'Primary outcome'. The intervention is 'Science'. The comparison is 'With business as usual'. The SMD is 0.8152 and the SE is 0.258188776. The effect size is 0.8152 and the SE is 0.258188776. The outcome is classified as 'Toolkit primary outcome' and 'Science primary outcome'.

In this example the science outcome is the only one available, so it is selected for both the 'Toolkit primary outcome' and 'Science primary outcome'.

The screenshot shows the PPI Data form for 'Language achievement - extended school time'. The outcome type is 'Continuous (M, means, and SD)'. The outcome is 'Secondary outcome(s)'. The intervention is 'Languages'. The comparison is 'With business as usual'. The SMD is 0.0000000000000000 and the SE is NaN. The outcome is classified as 'Other outcome'.

This is a secondary outcome for Languages. There is already a reading outcome as the Toolkit primary outcome' so this should be coded as 'Other outcome'.

### Example 2:

For this study, a secondary outcome for languages needs to be recorded. This should be classified as 'Other outcome'. There is already a primary outcome so 'Toolkit primary outcome' does not need to be selected.

### Example 3:

This study has a secondary outcome that details students' maths achievement scores. This is the only mathematics outcome recorded for the study so it should be classified as 'Mathematics primary outcome'. There is already a primary outcome so 'Toolkit primary outcome' does not need to be selected.

Title: Math achievement - extended school time

Timepoint: [dropdown]

Outcome Description: Math achievement measured by Stanford Achievement Test (SAT)

Outcome type: Continuous: Ns, means, and SD

Outcome: Secondary outcome(s)

Intervention: Mathematics

Comparison: With business as usual

Group 1 arm: [dropdown]

Group 2 arm: [dropdown]

Group 1 N: 0, Group 2 N: 0

Group 1 mean: 0, Group 2 mean: 0

Group 1 SD: 0, Group 2 SD: 0

Correct for unit of analysis error: [Go]

SMD: 0.0000000000000000

SE: NaN

You can further characterise this outcome by associating it with any code in the current codeset:

- EEF Toolkit effect size data extraction v 1.1 August 2020
  - Section 1 What are the details of the study design?
  - Section 2 How is the sample described?
  - Section 3 Outcome details
    - Outcomes
      - Outcome classification
        - Sample (select one from this group)
        - Test type (select one from this group)
        - Effect size calculation (select one from this group)
        - Outcome type (select all that apply)
          - ☐ Toolkit primary outcome
          - ☐ Reading primary outcome
          - ☐ Writing and spelling primary outcome
          - ☒ Mathematics primary outcome
          - ☐ Science primary outcome
          - ☐ Other outcome

**Example 4:** This study has 3 outcomes all linked to reading. The primary outcome that is also the best measure of reading should be classified as the 'Toolkit primary outcome' and 'Reading primary outcome'. The other outcomes will need to be classified as 'Other outcome'.

Outcome Title: TE\_PRI Reading comprehension (Daze) gain scores

Intervention: Literacy: reading comprehension

TE Reading comprehension SRI gain scores Tutees

Intervention: Literacy: reading comprehension

TE Reading fluency - DORF gain scores Tutees

Intervention: Literacy: reading other

New Outcome Cancel

Item Details

First Previous Next Last Item 1 of 1

Show terms? Auto Advance? Close/Back

Item Details Links Arms Timepoints PDF Coding Record

Ref. Type: Dissertation

Find on? Show optional fields? Edit

Assessing the Effectiveness of Peer-Assisted Learning Strategies (PALS) Reading Program on Sixth-Grade Students Comprehension, Fluency, and Attitude Toward Reading, with Nonfiction Texts

Abstract:

The purpose of the study was to implement and evaluate the effectiveness of the Peer-Assisted Learning Strategies (PALS) supplemental reading program to determine if there was an increase in sixth grade students' reading comprehension, oral fluency, and attitude toward reading, specifically when reading nonfiction text. One-hundred sixty-four sixth grades students were placed in one of two conditions: PALS treatment or control. A quasi-experimental pretest-posttest design was utilized to compare the effects of treatment between the two groups. Students in the PALS and control groups received the same amount of reading instruction during the 13 weeks of the study. The PALS group received supplemental PALS reading instruction in addition to the district curriculum while the control group used only the district reading curriculum. Quantitative data were collected from pre and post-test measures for reading comprehension (Scholastic Reading Inventory and DIBELS Daze), fluency (DIBELS ORF), and attitude toward reading (Elementary Reading Attitude Survey). Qualitative data were collected in the form of reflection posts from an online site called Kidblog and a teacher interview protocol. Findings did not reveal any statistical difference in reading comprehension, fluency, or attitude between PALS and control groups. However, both PALS and control groups showed positive gains in comprehension and fluency over the course of the study which suggested teaching reading comprehension strategies can assist students with nonfiction texts.

Author(s): Abbondanza Mark A; Hanson Mary A;

Publ. Title

Item is Included ID: 37116221 Imported ID: 37098759

Year: 2013 ISSN/ISBN: 9781321173253

Short Title: Abbondanza (2013) Pages: 202

Volume Issue

Url: https://eric.ed.gov/?id=ED557527

DOI: Availability

Edition: Publisher

24 February 2021

# Outcome Classification

## Recoding Outcomes

At times it may be the case that upon further consideration, the outcome classifications for a study may need to change to support analysis.

1. Find the study that needs additional coding and open it by clicking 'Go'.



2. Use the drop-down menus to open the 'Outcome Data Extraction' window. This can be found in 'Section 3 Outcome details', 'Outcomes', then click the 'Outcome' button for either the primary, secondary or SES/FSM outcome.

Open the dropdowns for the effect size data extraction, 'Section 3 Outcome details' and 'Outcomes' and click on the 'Outcomes' button. This opens the outcome data extraction window.

3. Open the 'Outcome Data Extraction' window and review the listed outcomes. Use the 'Edit' button to open the data extraction form to make any amendments.

| Outcome Title                                                  | Intervention | Edit | Remove |
|----------------------------------------------------------------|--------------|------|--------|
| TEACH FB - Mathematics WRAT - 2nd Grade                        | Mathematics  | Edit | Remove |
| TEACH FB - Mathematics Criterion Test - 2nd grade              | Mathematics  | Edit | Remove |
| TEACH FB - Mathematics WRAT - 1st & 2nd grades                 | Mathematics  | Edit | Remove |
| TEACH Feedback - Mathematics Criterion Test - 1st & 2nd grades | Mathematics  | Edit | Remove |

New Outcome Cancel

4. At the bottom of the screen, open the coding tools 'Section 3 Outcome details', 'Outcome classification' and add/remove codes as necessary.
5. When complete, click the 'Save outcome' button.

In this example, there are a series of mathematics outcomes. The primary outcome that is also the best overall measure of mathematics needs to be identified and classified as the 'Toolkit primary outcome' and 'Mathematics primary outcome'. This is likely to be the outcome already designated as the 'Primary outcome' in earlier coding. The other outcomes (measures of mathematics which are not the best overall measures) will all need to be coded as 'Other outcome'. If there is more than one outcome already coded as a primary outcome, you will need to select the one you think is most appropriate and de-select the others.

| Question                                                                                                                                                            | Applicable Codes                                              | Definition                                                                                                                                                                                                                                                                                    | Actions                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| SECTION 3: Outcome details                                                                                                                                          |                                                               |                                                                                                                                                                                                                                                                                               |                            |
| 3.4. Outcome classification (CODE FROM OUTCOME BUTTON)                                                                                                              |                                                               |                                                                                                                                                                                                                                                                                               |                            |
| Outcome classifications for meta-analysis and meta-regressions. These need to be added from the Outcome button and within the outcome window NOT from this section. |                                                               |                                                                                                                                                                                                                                                                                               |                            |
| 3.4.1. Sample (select one from this group)                                                                                                                          |                                                               |                                                                                                                                                                                                                                                                                               |                            |
| Outcome classification relating to the sample                                                                                                                       |                                                               |                                                                                                                                                                                                                                                                                               |                            |
|                                                                                    | <input type="checkbox"/> Sample: All                          | Analysis applied to normal or typical sample of pupils. The whole range of attainment or 'ability' for the educational setting was included in the intervention.<br><br><b>For Tutoring, when intervention recipients are low achievers and tutors are high achievers, please select all.</b> | Select one from this group |
|                                                                                                                                                                     | <input type="checkbox"/> Sample: Exceptional                  | Students described as gifted and talented or of exceptional 'ability'. Usually those in the top 10 per cent of the distribution.                                                                                                                                                              |                            |
|                                                                                                                                                                     | <input type="checkbox"/> Sample: High achievers               | Classification of the students in the sample in relation to their level of academic attainment. Those described as high attainers or 'high ability'; usually those in the top half or the top third of the distribution (depending on classifications).                                       |                            |
|                                                                                                                                                                     | <input type="checkbox"/> Sample: Average                      | Classification of the students in the sample in relation to their level of academic attainment. Those described as performing at or around average attainment or of 'average ability'; usually those in the middle quartiles (depending on classifications).                                  |                            |
|                                                                                                                                                                     | <input type="checkbox"/> Sample: Low achievers                | Classification of the students in the sample in relation to their level of academic attainment. Those described as low attainers or 'low ability'; usually those in the bottom half or the bottom third of the distribution (depending on classifications).                                   |                            |
| 3.4.2. Test type (select one from this group)                                                                                                                       |                                                               |                                                                                                                                                                                                                                                                                               |                            |
|                                                                                  | <input type="checkbox"/> Test type: Standardised test         | A standardised test is administered and scored in a consistent way. The properties of the test are established through piloting on a group to determine the mean and spread of the scores for a particular target group. Standardised tests are usually named and the properties published.   | Select one from this group |
|                                                                                                                                                                     | <input type="checkbox"/> Test type: Researcher developed test | A test developed or designed for a specific research project.                                                                                                                                                                                                                                 |                            |

|                                                                                   |                                                                                    |                                                                                                                                                                                                                                                                             |                            |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--|
|                                                                                   | <input type="checkbox"/> Test type: National test                                  | A test or examination used in regional or national evaluations of students and school performance. These may be optional or compulsory, but are organised and/or administered by the regional or national administration in a particular jurisdiction.                      |                            |  |
|                                                                                   | <input type="checkbox"/> Test type: School-developed test                          | A test or examination developed and used by a school or schools involved in the research as part of their usual assessment approach.                                                                                                                                        |                            |  |
|                                                                                   | <input type="checkbox"/> Test type: International tests                            | Tests used for international comparisons of student performance (e.g. PISA, TIMMS, PIRLS etc.).                                                                                                                                                                             |                            |  |
| 3.4.3. Effect size calculation (select one from this group)                       |                                                                                    |                                                                                                                                                                                                                                                                             |                            |  |
| What kind of effect size is being reported for this outcome?                      |                                                                                    |                                                                                                                                                                                                                                                                             |                            |  |
|  | <input type="checkbox"/> Post-test unadjusted                                      | A simple comparison of the differences between control and intervention groups using only the post-test data, usually from an older-randomised controlled trials (RCT) or where baseline equivalence has been established.                                                  | Select one from this group |  |
|                                                                                   | <input type="checkbox"/> Post-test adjusted for baseline attainment                | A post-test comparison where a measure of educational attainment at pre-test is controlled for in the analysis of the impact of the intervention or approach e.g. ANCOVA, OLS regression.                                                                                   |                            |  |
|                                                                                   | <input type="checkbox"/> Post-test adjusted for baseline attainment AND clustering | A post-test comparison where a measure of educational attainment at pre-test is controlled for in the analysis of the impact of the intervention or approach and where the estimate is adjusted for clustering at class or school level (e.g. ANCOVA, MLM, OLS regression). |                            |  |
|                                                                                   | <input type="checkbox"/> Pre-post gain                                             | Outcome assessment based on the difference between an individual's pre-test and post test scores and the range of these differences (gain score or pre-post analysis).                                                                                                      |                            |  |

### 3.4.4. Outcome type (select all that apply)

This section identifies different kinds of primary outcomes for meta-analysis for the Toolkit overall (main effect), for Reading, for Writing and Spelling, for Mathematics, for Science and other outcomes. Please check the coding guide for more details. Some outcomes will have more than one code checked (often 'Toolkit primary outcome' and 'Reading primary outcome'). 'Other outcome' should only be used when no other codes are selected.

|                                                                                   |                          |                                      |                                                                                                                                                                                                                                                                                                         |                       |
|-----------------------------------------------------------------------------------|--------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|  | <input type="checkbox"/> | Toolkit primary outcome              | Select this code for the primary outcome for the Toolkit. This will usually be a measure of reading comprehension or another standardised test with good predictive validity as an indicator of learning.                                                                                               | Select all that apply |
|                                                                                   | <input type="checkbox"/> | Reading primary outcome              | Select this option if this outcome is the best overall indicator of improvement in reading. This will usually be a standardised measure of reading comprehension, where this is available.                                                                                                              |                       |
|                                                                                   | <input type="checkbox"/> | Writing and spelling primary outcome | Select this code where the outcome is the best overall measure of writing or spelling. Preference should be given to an overall measure of writing where this is available. Standardised tests or national and state tests should be selected in preference to researcher or teacher designed measures. |                       |
|                                                                                   | <input type="checkbox"/> | Mathematics primary outcome          | Select this code where this outcome is the best overall measure of mathematics learning. This will usually be a standardised test of mathematics involving number and/or arithmetic.                                                                                                                    |                       |
|                                                                                   | <input type="checkbox"/> | Science primary outcome              | Select this code for the best overall measures of science learning. This will usually be a standardised test or a national or state test or examination.                                                                                                                                                |                       |
|                                                                                   | <input type="checkbox"/> | Other outcome                        | Select this code where none of the five categories above apply. This will include all other secondary outcomes.                                                                                                                                                                                         |                       |

### 3.4.5. Toolkit strand(s) (select at least one Toolkit strand)

Please select the Toolkit strand or strands which this outcome is evaluating. Each study has usually been classified as appropriate for the Toolkit. There will not usually be more than one, but occasionally some outcomes are appropriate measures of more than one approach (such as when a teaching assistance delivers a phonics intervention). If unsure, please check with the Toolkit team.

|                                                                                     |                          |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |
|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|  | <input type="checkbox"/> | Toolkit: Arts participation       | Arts participation is defined as involvement in artistic and creative activities, such as dance, drama, music, painting, or sculpture. It can occur either as part of the curriculum or as extra-curricular activity. Participation may be organised as regular weekly or monthly activities, or more intensive programmes such as summer schools or residential courses. Whilst these activities have educational value in themselves, this Toolkit entry focuses on the benefits of arts participation for core academic attainment. | Select all that apply |
|                                                                                     | <input type="checkbox"/> | Toolkit: Aspiration interventions | By aspirations we mean the things children and young people hope to achieve for themselves in the future. To meet their aspirations                                                                                                                                                                                                                                                                                                                                                                                                    |                       |

|                          |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                    | about careers, university, and further education, pupils often require good educational outcomes. Raising aspirations is therefore often believed to incentivise improved attainment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> | Toolkit: Behaviour interventions   | Behaviour interventions seek to improve attainment by reducing challenging behaviour. This entry covers interventions aimed at reducing a variety of behaviours, from low-level disruption to general anti-social activities, aggression, violence, bullying, and substance abuse. The interventions themselves can be split into three broad categories:<br>1. Approaches to developing a positive school ethos or improving discipline across the whole school which also aim to support greater engagement in learning.<br><br>2. Universal programmes which seek to improve behaviour and generally take place in the classroom.<br><br>3. More specialised programmes which are targeted at students with specific behavioural issues.                                                         |
| <input type="checkbox"/> | Toolkit: Built environment         | Changing the physical conditions or built environment of the learning setting, either by moving to a new school building or seeking to improve the structure, air quality, noise, light, or temperature of an existing building or classroom.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <input type="checkbox"/> | Toolkit: Collaborative learning    | A collaborative (or cooperative) learning approach involve pupils working together on activities or learning tasks in a group small enough for everyone to participate on a collective task that has been clearly assigned. Pupils in the group may work on separate tasks contributing to a common overall outcome, or work together on a shared task. Some collaborative learning approaches put mixed ability teams or groups to work in competition with each other in order to drive more effective collaboration. There is a very wide range of approaches to collaborative and cooperative learning involving different kinds of organisation and tasks. Peer tutoring can also be considered as a type of collaborative learning, but in the Toolkit it is reviewed it as a separate topic. |
| <input type="checkbox"/> | Toolkit: Early literacy approaches | Early literacy approaches aim to improve young children's skills, knowledge or understanding related to reading or writing. Common approaches include: storytelling and group reading; activities that aim to develop letter knowledge, knowledge of sounds and early phonics; and introductions to different kinds of writing. Early literacy strategies                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                          |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                    | may have components in common with Communication and language approaches and may also involve Parental engagement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> | Toolkit: Early numeracy approaches | Early numeracy approaches aim to develop number skills and improve young children's knowledge and understanding of early mathematical concepts. Activities in this area might be structured, for example through programmes designed to develop children's 'number sense' (their developing understanding of quantity and number), or more informal, such as using mathematical games including computer games, or pretend activities involving counting or using other mathematical language.                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> | Toolkit: Early years intervention  | Early years or early childhood interventions are approaches that aim to ensure that young children have educationally based pre-school or nursery experiences which prepare for school and academic success, usually through additional nursery or pre-school provision. Many of the researched programmes and approaches focus on disadvantaged children. Some also offer parental support. The research summarised here looks at general or multi-component programmes and approaches.                                                                                                                                                                                                                                                              |
| <input type="checkbox"/> | Toolkit: Extending school time     | This summary focuses on extending core teaching and learning time in schools and the use of targeted before and after school programmes. Other approaches to increasing learning time are included in other sections of the Toolkit, such as Homework, Early years intervention and Summer schools. The research focuses on three main approaches to extending teaching and learning time in schools: extending the length of the school year; extending the length of the school day; and providing additional time for targeted groups of pupils, particularly disadvantaged or low-attaining pupils, either before or after school.                                                                                                                |
| <input type="checkbox"/> | Toolkit: Feedback                  | Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers. |

|  |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | □ Toolkit: Homework                          | Homework refers to tasks given to pupils by their teachers to be completed outside of usual lessons. Common homework activities in primary schools tend to be reading or practising spelling and number facts, but may also include more extended activities to develop inquiry skills or more directed and focused work such as revision for tests which is more similar to homework set in secondary schools. Other homework activities may include reading or preparing for work to be done in class, or practising and completing tasks or activities already taught or started in lessons, as well as revision for exams.                                                                                                                                                    |
|  | □ Toolkit: Individualised instruction        | Individualised instruction involves different tasks for each learner and support at the individual level. It is based on the idea that all learners have different needs, and that therefore an approach that is personally tailored – particularly in terms of the activities that pupils undertake and the pace at which they progress through the curriculum – will be more effective. Various models of individualised instruction have been tried over the years in education, particularly in subjects like mathematics where pupils can have individual sets of activities which they complete, often largely independently. More recently, digital technologies have been employed to facilitate individual activities and feedback.                                      |
|  | □ Toolkit: Mastery learning                  | Mastery learning breaks subject matter and learning content into units with clearly specified objectives which are pursued until they are achieved. Learners work through each block of content in a series of sequential steps. Students must demonstrate a high level of success on tests, typically at about the 80% level, before progressing to new content. Mastery learning can be contrasted with other approaches which require pupils to move through the curriculum at a pre-determined pace. Teachers seek to avoid unnecessary repetition by regularly assessing knowledge and skills. Those who do not reach the required level are provided with additional tuition, peer support, small group discussions, or homework so that they can reach the expected level. |
|  | □ Toolkit: Metacognition and self-regulation | Metacognition and self-regulation approaches aim to help pupils think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning. Interventions are usually designed to give pupils a repertoire of strategies to choose from and the skills to select the most suitable strategy for a given learning task. Self-regulated learning can be broken into three essential                                                                                                                                                                                                                                                                                                                          |

|                          |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                      | components: cognition - the mental process involved in knowing, understanding, and learning; metacognition - often defined as 'learning to learn'; and motivation - willingness to engage our metacognitive and cognitive skills.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input type="checkbox"/> | Toolkit: Mentoring                   | Mentoring in education involves pairing young people with an older peer or volunteer, who acts as a positive role model. In general, mentoring aims to build confidence, develop resilience and character, or raise aspirations, rather than to deliver specific academic skills or knowledge. Mentors typically build relationships with young people by meeting with them one to one for about an hour a week over a sustained period, either during school, at the end of the school day, or at weekends. Activities vary between different mentoring programmes, sometimes including direct academic support with homework or other school tasks. For programmes focused primarily on direct academic support see One to one tuition and Peer tutoring. Mentoring has increasingly been offered to young people who are deemed to be hard to reach or at risk of educational failure or exclusion.                       |
| <input type="checkbox"/> | Toolkit: One to one tuition          | One to one tuition involves a teacher, teaching assistant or other adult giving a pupil intensive individual support. It may happen outside of normal lessons as additional teaching - for example as part of Extending school time or a Summer school - or as a replacement for other lessons.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/> | Toolkit: Oral language interventions | Oral language interventions emphasise the importance of spoken language and verbal interaction in the classroom. They are based on the idea that comprehension and reading skills benefit from explicit discussion of either the content or processes of learning, or both. Oral language approaches include: Targeted reading aloud and discussing books with young children Explicitly extending pupils' spoken vocabulary The use of structured questioning to develop reading comprehension. All of the approaches reviewed in this section support learners' articulation of ideas and spoken expression, such as Thinking Together or Philosophy for Children. Oral language interventions therefore have some similarity to approaches based on metacognition, which make talk about learning explicit in classrooms, and to Collaborative Learning approaches, which promote pupils' talk and interaction in groups. |
| <input type="checkbox"/> | Toolkit: Outdoor adventure learning  | Outdoor adventure learning typically involves outdoor experiences, such as climbing or mountaineering; survival, ropes or assault                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                       | <p>courses; or outdoor sports, such as orienteering, sailing and canoeing. These can be organised as intensive residential courses or shorter courses run in schools or local outdoor centers. Adventure education usually involves collaborative learning experiences with a high level of physical (and often emotional) challenge. Practical problem-solving, explicit reflection and discussion of thinking and emotion (see also Metacognition and self-regulation) may also be involved. Adventure learning interventions typically do not include a formal academic component, so this summary does not include forest schools or field trips.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | <input type="checkbox"/> Toolkit: Parental engagement | <p>We define parental engagement as the involvement of parents in supporting their children's academic learning. It includes: 1. approaches and programmes which aim to develop parental skills such as literacy or IT skills; 2. general approaches which encourage parents to support their children with, for example reading or homework; 3. the involvement of parents in their children's learning activities; and 4. more intensive programmes for families in crisis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  | <input type="checkbox"/> Toolkit: Peer tutoring       | <p>Peer tutoring includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support. In cross-age tutoring, an older learner takes the tutoring role and is paired with a younger tutee or tutees. Peer-assisted learning is a structured approach for mathematics and reading with sessions of 25-35 minutes two or three times a week. In reciprocal peer tutoring, learners alternate between the role of tutor and tutee. The common characteristic is that learners take on responsibility for aspects of teaching and for evaluating their success. Peer assessment involves the peer tutor providing feedback to children relating to their performance and can have different forms such as reinforcing or correcting aspects of learning. Peers are defined as other students or pupils at the same school or educational setting as the intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socio-economic or cultural background. University students tutoring primary school pupils would not usually be classified as 'peers'.</p> |
|  | <input type="checkbox"/> Toolkit: Performance pay     | <p>Performance pay schemes aim to create a direct link between teacher pay or bonuses, and the performance of their class in order to incentivise better teaching and so improve outcomes. A distinction can be drawn between awards, where improved performance leads</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|  |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                                    | to a higher permanent salary, and payment by results, where teachers get a bonus for higher test scores. Approaches differ in how performance is measured and how closely those measures are linked to outcomes for learners. In some schemes, students' test outcomes are the sole factor used to determine performance pay awards. In others, performance judgements can also include information from lesson observations or feedback from pupils, or be left to the discretion of the headteacher.                                                                                                                                                                                                                                                |
|  | <input type="checkbox"/> Toolkit: Phonics                          | Phonics is an approach to teaching reading, and some aspects of writing, by developing learners' phonemic awareness. This involves the skills of hearing, identifying and using phonemes or sound patterns in English. The aim is to systematically teach learners the relationship between these sounds and the written spelling patterns, or graphemes, which represent them. Phonics emphasises the skills of decoding new words by sounding them out and combining or 'blending' the sound-spelling patterns.                                                                                                                                                                                                                                     |
|  | <input type="checkbox"/> Toolkit: Reading comprehension strategies | Reading comprehension strategies focus on the learners' understanding of written text. Pupils are taught a range of techniques which enable them to comprehend the meaning of what they read. These can include: inferring meaning from context; summarising or identifying key points; using graphic or semantic organisers; developing questioning strategies; and monitoring their own comprehension and identifying difficulties themselves (see also 'Metacognition and self-regulation').                                                                                                                                                                                                                                                       |
|  | <input type="checkbox"/> Toolkit: Reducing class size              | As the size of a class or teaching group gets smaller it is suggested that the range of approaches a teacher can employ and the amount of attention each student will receive will increase, thereby improving outcomes for pupils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | <input type="checkbox"/> Toolkit: Repeating a year                 | Pupils who do not reach a given standard of learning at the end of a year are required to repeat the year by joining a class of younger students the following academic year. This is also known as "grade retention", "non-promotion" or "failing a grade". For students at secondary school level, repeating a year is usually limited to the particular subject or classes that a student has not passed. Repeating a year is very rare in the UK but is relatively common in the USA where the No Child Left Behind Act (2002) recommended that students be required to demonstrate a set standard of achievement before progressing to the next grade level. Students can also be required to repeat a year in some European countries including |

|                          |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                        | Spain, France and Germany. In some countries, such as Finland, pupils can repeat a year in exceptional circumstances, but this decision is made collectively by teachers, parents and the student rather than on the basis of end of year testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> | Toolkit: School uniform                | Schools identify clothing considered appropriate for pupils to wear in school, and usually specify the style and colour. Schools vary as to how strictly a uniform policy is enforced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <input type="checkbox"/> | Toolkit: Setting or streaming          | Pupils with similar levels of current attainment are grouped together either for specific lessons on a regular basis (setting or regrouping), or as a whole class (streaming or tracking). The assumption is that it will be possible to teach more effectively or more efficiently with a narrower range of attainment in a class.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <input type="checkbox"/> | Toolkit: Small group tuition           | Small group tuition is defined as one teacher or professional educator working with two, three, four, or five pupils. This arrangement enables the teacher to focus exclusively on a small number of learners, usually on their own in a separate classroom or working area. Intensive tuition in small groups is often provided to support lower attaining learners or those who are falling behind, but it can also be used as a more general strategy to ensure effective progress, or to teach challenging topics or skills.                                                                                                                                                                                                                        |
| <input type="checkbox"/> | Toolkit: Social and emotional learning | Interventions which target social and emotional learning (SEL) seek to improve attainment by improving the social and emotional dimensions of learning, as opposed to focusing directly on the academic or cognitive elements of learning. SEL interventions might focus on the ways in which students work with (and alongside) their peers, teachers, family or community. Three broad categories of SEL interventions can be identified: 1. Universal programmes which generally take place in the classroom; 2. More specialised programmes which are targeted at students with particular social or emotional problems; 3. School-level approaches to developing a positive school ethos which also aim to support greater engagement in learning. |
| <input type="checkbox"/> | Toolkit: Sports participation          | Sports participation interventions engage pupils in sports as a means to increasing educational engagement and attainment. This might be through after-school activities or a programme organised by a local sporting club or association. Sometimes sporting activity is used to encourage young people to engage in additional learning activities, such as football training at a local football club combined with study skills, ICT, literacy or mathematics lessons.                                                                                                                                                                                                                                                                              |

|  |                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <input type="checkbox"/> Toolkit: Summer schools                   | Summer schools are lessons or classes during the summer holidays, and are often designed as catch-up programmes. Some summer schools do not have an academic focus and concentrate on sports or other non-academic activities. Others may have a specific focus, such as pupils at the transition from primary to secondary school, or advanced classes to prepare high-attaining pupils for university.                                                                                                                                                                                   |
|  | <input type="checkbox"/> Toolkit: Teaching assistants              | Teaching assistants (also known as TAs or classroom support assistants) are adults who support teachers in the classroom. Teaching assistants' duties can vary widely from school to school, ranging from providing administrative and classroom support to providing targeted academic support to individual pupils or small groups. Cognate terms: support staff; adult support staff; teaching assistants; associate staff; classroom assistants; classroom support assistant; auxiliary teachers; teacher's aide; education paraprofessional; nursery nurse (in early years' settings) |
|  | <input type="checkbox"/> Toolkit: Within-class attainment grouping | Within-class attainment grouping involves organising pupils within their usual class for specific activities or topics, such as literacy. Pupils with similar levels of current attainment are grouped together, for example, on specific tables, but all pupils are taught by their usual teacher and support staff, and they usually all follow the same curriculum.                                                                                                                                                                                                                     |

### 3.5. Outcome labels (CODE FROM OUTCOME BUTTON)

Please do not mark this section at study level. This section is completed in the 'Outcome specific code' screen accessed from the outcome button.

#### 3.5.1. Comparison

Please do not mark this section. This section is completed in the 'Outcome specific code' screen.

|                                                                                     |                                                      |                                                                                                                      |                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------|
|  | <input type="checkbox"/> With active control         | i.e. there is control for novelty/an introduced new treatment                                                        | Select one from this group |
|                                                                                     | <input type="checkbox"/> With business as usual      | i.e. comparison group having usual learning experience                                                               |                            |
|                                                                                     | <input type="checkbox"/> With no equivalent teaching | i.e. additional learning time/no treatment, such as in a summer school intervention or a before or after school club |                            |

### 3.5.2. Intervention outcome measure

Type or focus of educational test used to measure the outcome of the impact of the intervention or approach.



|                          |                                                |                                                                                                                                                                                              |
|--------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | Literacy: reading comprehension                | .e.g. passage comprehension                                                                                                                                                                  |
| <input type="checkbox"/> | Literacy: decoding/phonics                     |                                                                                                                                                                                              |
| <input type="checkbox"/> | Literacy: spelling                             |                                                                                                                                                                                              |
| <input type="checkbox"/> | Literacy: reading other                        | Other reading outcomes (e.g. reading fluency, vocabulary comprehension (receptive vocabulary))                                                                                               |
| <input type="checkbox"/> | Literacy: speaking and listening/oral language |                                                                                                                                                                                              |
| <input type="checkbox"/> | Literacy: writing                              |                                                                                                                                                                                              |
| <input type="checkbox"/> | Mathematics                                    |                                                                                                                                                                                              |
| <input type="checkbox"/> | Science                                        |                                                                                                                                                                                              |
| <input type="checkbox"/> | Social studies                                 | e.g. history, geography, economics                                                                                                                                                           |
| <input type="checkbox"/> | Arts                                           | e.g. music, art                                                                                                                                                                              |
| <input type="checkbox"/> | Languages                                      | Second or foreign languages, based on the dominant language of instruction in the educational setting                                                                                        |
| <input type="checkbox"/> | Curriculum: other                              | Other curriculum outcomes not included in the above options (please specify)                                                                                                                 |
| <input type="checkbox"/> | Combined subjects                              | Where the study combines two or more test outcomes from different subject to provide an overall measure of educational progress (e.g. KS2 English and mathematics or multiple GCSE subjects) |
| <input type="checkbox"/> | Cognitive: reasoning                           | Tests of verbal, analogical or visual reasoning, including IQ or other 'intelligence' tests                                                                                                  |
| <input type="checkbox"/> | Cognitive: other                               | Other tests of cognitive performance such as working memory or perception                                                                                                                    |

Select one from this group

# Further Information

## Resources for Help & Support

If you encounter a problem that you can't solve using the information in this guide, there are a number of options available to you.

For coding-related queries: Consult the troubleshooting flowchart on Slack (type 'troubleshooting' into the search box).

Please use the specific channels on Slack for particular questions:

|                               |                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------|
| <b>#coding_howto</b>          | for copies of coding guides and general information about the data extraction process           |
| <b>#coding_problems</b>       | when your question relates to a specific study you are coding                                   |
| <b>#coding_reconciliation</b> | when your question is either about the reconciliation process or a query about a specific study |
| <b>#problematic_PDFs</b>      | when you have problems with documents that are difficult to read/highlight                      |

For queries related to using EPPI Reviewer software, please contact: [EPPIsupport@ucl.ac.uk](mailto:EPPIsupport@ucl.ac.uk)

There are also a number of training videos for EPPI Reviewer on YouTube.

If you have trouble with EPPI Reviewer freezing or crashing, please record this in the [#crashlog](#) channel on Slack.

For Slack-related queries: [www.slack.com/intl/en-gb/help](https://www.slack.com/intl/en-gb/help)

For all other queries, post on Slack or contact: [eef.database@durham.ac.uk](mailto:eef.database@durham.ac.uk)

# Further Information

## Appendix A: Common Standardised Tests

### Common Standardised Tests

| Name                                   | Abbreviation | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hodder Group Reading Test              | HGRT         | <p>The Hodder Group Reading Test (HGRT) assesses pupils' reading comprehension at word, sentence and text levels. The test is designed for 7-12 years old pupils. It is a paper-based measure that takes a maximum of 30 minutes to complete. It is administered in a whole-class/group context and utilises a multiple-choice response format. The test is non-adaptive and suitable for use with mixed ability groups. The HGRT produces raw scores that can be transformed into National Curriculum (NC) levels, reading ages and standardised scores.</p> <p>Studies may report various versions of outcomes, as raw scores, NC levels, ages or standardized scores.</p>                                                         |
| Metropolitan Achievement Test          | MAT          | <p>The Metropolitan Achievement Test (MAT) assesses strategy use, oral comprehension and reading achievement.</p> <p>Alternate forms of the tests are available and often used by studies for pre and post-tests.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| New Group Reading Test (GL Assessment) | NGRT         | <p>The NGRT has two sub-scales: sentence completion and passage comprehension. These can be combined into a composite reading score. It assesses: grammatical knowledge, inference skills, ability to recognise, authorial intent and deduction skills. The NGRT has parallel forms; form A (the digital version of the test) and form B (the paper version). Form A is an adaptive, multiple-choice test that begins with a sentence completion task and then, depending upon the accuracy of responses, either drops down in difficulty to phonics tasks or becomes harder and assesses passage comprehension.</p> <p>Some studies use a mix of versions (as pre- and post-test) or just one form e.g. just digital versions).</p> |
| Peabody Picture Vocabulary Test        | PPV          | <p>The Peabody Picture Vocabulary Test-III (PPVT) is a measure of receptive vocabulary and is a standardized and validated measure. The test contains 204 items grouped into 17 sets of 12 items. Each item consists of four black-and-white illustrations arranged on a page. The participant taking the test is asked to select the picture that best represents the meaning of a stimulus word that is spoken to them.</p> <p>There are two forms of the test (Form A and Form B), testing is discontinued after the student misses 8 out of 12 items for Form A (which may be referred to as PPVT-III A).</p>                                                                                                                    |

At times Form A may be used as a pre-test and Form B as post-test. In some studies adapted versions of the PPVT to different languages have been used.

|                                                                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Progress in English/<br/>New Progress in English/<br/>Progress Test in English<br/>(GL Assessment)</b> | PiE<br>NPiE<br>PTE | <p>These tests are aligned with the National Curriculum in England and may be used in online or paper form. Test content is adapted for different ages and the study may place a number at the end indicating the age e.g. "Progress in English 12". Short-form versions of the test include exercises to examine pupils' spelling, grammar and reading comprehension (both narrative and non-narrative). The Long Form (LF) version includes an extended writing component in addition to the content in short form tests.</p> <p>This test is referred to in most studies (pre-2018) as 'Progress in English', studies made during development of a replacement test are called 'New Progress in English' and studies from 2018 onwards refer to it as 'Progress Test in English'.</p> |
| <b>Progress in Maths/<br/>New Progress in Maths/<br/>Progress Test in Maths<br/>(GL Assessment)</b>       | PiM<br>NPiM<br>PTM | <p>These tests are aligned with the National Curriculum in England and content is adapted for different ages and the study may place a number at the end indicating the age e.g. "Progress in Maths 8". One of its subdomains is: Solving Routine Problems'.</p> <p>This test is referred to in most studies (pre-2018) as 'Progress in Maths, studies made during development of a replacement test are called 'New Progress in Maths and studies from 2018 onwards refer to it as 'Progress Test in Maths'.</p>                                                                                                                                                                                                                                                                        |
| <b>Stanford Diagnostic Reading Test</b>                                                                   | SDRT               | <p>The Stanford Diagnostic Reading Test (SDRT) measures reading achievement. It covers four skill domains, which may be referred to as subtests. These include: decoding (which may include terms such as phonetic analysis, word division and word blending), vocabulary (including auditory vocabulary), comprehension (including literal and inferential comprehension), and rate (for children in grade five and above.)</p> <p>The SDRT is a group-administered device which is both norm-referenced and criterion-referenced. Different versions of the SDRT may be used with samples of various ages / grades.</p>                                                                                                                                                                |
| <b>Wide Range Achievement Test</b>                                                                        | WRAT               | <p>The Wide Range Achievement Test (WRAT) assesses overall achievement and includes the following sub-tests:</p> <ul style="list-style-type: none"> <li>- Spelling: This subtest requires students to copy marks, write their names and spell dictated words. Testing is discontinued after 10 consecutive incorrect responses.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Woodcock Reading Mastery Test</b>                                                                      | WRMT               | <p>The Woodcock Reading Mastery Test can be used to measure reading accuracy through analysing performance on two subtests:</p> <ul style="list-style-type: none"> <li>- Word Attack: this subtest requires the student to read a list of 50 pseudo-words that increase in difficulty.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

- Word Identification: this subtest requires the student to read a list of real words (there are 106 in total) that become increasingly difficult.
- For both subtests, testing is stopped after six consecutive incorrect responses.

The WRMT assess comprehension through the Passage Comprehension subtest. This subtest is a cloze procedure in which the participant silently reads a short passage (usually 2-3 sentences) and orally provides the missing word. Acceptable responses are listed with the examiner and testing is discontinued after six consecutive incorrect responses.

Alternate forms of the tests are available and often used by studies for pre and post-tests.

### **York Assessment of Reading Comprehension**

YARC-RC

The York Assessment of Reading Comprehension (YARC) has various components: passage reading accuracy and passage comprehension, Reading Comprehension (YARC-RC), Early Word Recognition Test (EWR), Single Word Reading Test (SWRT), letter-sound knowledge (an extended test of alphabetic knowledge which asks the child to provide the sound for 32 individual letters and digraphs).

At times, the test may be referred to as just EWR or SWRT, without mentioning YARC directly.

# Further Information

## Appendix B: Toolkit Strand Descriptors

### Toolkit Strand Descriptors

| Strand                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Arts participation</b>        | Arts participation is defined as involvement in artistic and creative activities, such as dance, drama, music, painting or sculpture. It can occur either as part of the curriculum or as extra-curricular activity. Participation may be organised as regular weekly or monthly activities, or more intensive programmes such as summer schools or residential courses. Whilst these activities have educational value in themselves, this Toolkit entry focuses on the benefits of arts participation for core academic attainment.                                                                                                                                                                                                                                                               |
| <b>Aspiration interventions</b>  | By aspirations we mean the things that children and young people hope to achieve for themselves in the future. To meet their aspirations about careers, university, and further education, pupils often require good educational outcomes. Raising aspirations is therefore often believed to incentivise improved attainment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Behaviour interventions</b>   | Behaviour interventions seek to improve attainment by reducing challenging behaviour. This entry covers interventions aimed at reducing a variety of behaviours, from low-level disruption to general anti-social activities, aggression, violence, bullying and substance use. The interventions themselves can be split into three broad categories: 1) Approaches to developing a positive school ethos or improving discipline across the whole school which also aim to support greater engagement in learning. 2) Universal programmes which seek to improve behaviour and generally take place in the classroom. 3) More specialised programmes which are targeted at students with specific behavioural issues.                                                                             |
| <b>Built environment</b>         | Changing the physical conditions or built environment of the learning setting, either by moving to a new school building or seeking to improve the structure, air quality, noise, light, or temperature of an existing building or classroom.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Collaborative learning</b>    | A collaborative (or cooperative) learning approach involve pupils working together on activities or learning tasks in a group small enough for everyone to participate on a collective task that has been clearly assigned. Pupils in the group may work on separate tasks contributing to a common overall outcome, or work together on a shared task. Some collaborative learning approaches put mixed ability teams or groups to work in competition with each other in order to drive more effective collaboration. There is a very wide range of approaches to collaborative and cooperative learning involving different kinds of organisation and tasks. Peer tutoring can also be considered as a type of collaborative learning, but in the Toolkit it is reviewed it as a separate topic. |
| <b>Early literacy approaches</b> | Early literacy approaches aim to improve young children's skills, knowledge or understanding related to reading or writing. Common approaches include: storytelling and group reading; activities that aim to develop letter knowledge, knowledge of sounds and early phonics; and introductions to different kinds of writing. Early literacy strategies may have components in common with Communication and language approaches and may also involve Parental engagement.                                                                                                                                                                                                                                                                                                                        |
| <b>Early numeracy approaches</b> | Early numeracy approaches aim to develop number skills and improve young children's knowledge and understanding of early mathematical concepts. Activities in this area might be structured, for example through programmes designed to develop children's 'number sense' (their developing understanding of quantity and number), or more                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | informal, such as using mathematical games including computer games, or pretend activities involving counting or using other mathematical language.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Early years intervention</b>          | Early years or early childhood interventions are approaches that aim to ensure that young children have educationally based pre-school or nursery experiences which prepare for school and academic success, usually through additional nursery or pre-school provision. Many of the researched programmes and approaches focus on disadvantaged children. Some also offer parental support. The research summarised here looks at general or multi-component programmes and approaches.                                                                                                                                                                                                                                                                                         |
| <b>Extending school time</b>             | This summary focuses on extending core teaching and learning time in schools and the use of targeted before and after school programmes. Other approaches to increasing learning time are included in other sections of the Toolkit, such as Homework, Early years intervention and Summer schools. The research focuses on three main approaches to extending teaching and learning time in schools: extending the length of the school year; extending the length of the school day; and providing additional time for targeted groups of pupils, particularly disadvantaged or low-attaining pupils, either before or after school.                                                                                                                                           |
| <b>Feedback</b>                          | Feedback is information given to the learner and/or the teacher about the learner's performance relative to learning goals. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the learning activity itself, about the process of activity, about the student's management of their learning or self-regulation or (the least effective) about them as individuals. This feedback can be verbal, written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers.                            |
| <b>Homework</b>                          | Homework refers to tasks given to pupils by their teachers to be completed outside of usual lessons. Common homework activities in primary schools tend to be reading or practising spelling and number facts, but may also include more extended activities to develop inquiry skills or more directed and focused work such as revision for tests which is more similar to homework set in secondary schools. Other homework activities may include reading or preparing for work to be done in class, or practising and completing tasks or activities already taught or started in lessons, as well as revision for exams.                                                                                                                                                   |
| <b>Individualised instruction</b>        | Individualised instruction involves different tasks for each learner and support at the individual level. It is based on the idea that all learners have different needs, and that therefore an approach that is personally tailored – particularly in terms of the activities that pupils undertake and the pace at which they progress through the curriculum – will be more effective. Various models of individualised instruction have been tried over the years in education, particularly in subjects like mathematics where pupils can have individual sets of activities which they complete, often largely independently. More recently, digital technologies have been employed to facilitate individual activities and feedback.                                     |
| <b>Mastery learning</b>                  | Mastery learning breaks subject matter and learning content into units with clearly specified objectives which are pursued until they are achieved. Learners work through each block of content in a series of sequential steps. Students must demonstrate a high level of success on tests, typically at about the 80% level, before progressing to new content. Mastery learning can be contrasted with other approaches which require pupils to move through the curriculum at a predetermined pace. Teachers seek to avoid unnecessary repetition by regularly assessing knowledge and skills. Those who do not reach the required level are provided with additional tuition, peer support, small group discussions, or homework so that they can reach the expected level. |
| <b>Metacognition and self-regulation</b> | Metacognition and self-regulation approaches aim to help pupils think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning. Interventions are usually designed to give pupils a repertoire of strategies to choose from and the skills to select the most suitable                                                                                                                                                                                                                                                                                                                                                                                                                        |

strategy for a given learning task. Self-regulated learning can be broken into three essential components: cognition - the mental process involved in knowing, understanding, and learning; metacognition - often defined as 'learning to learn'; and motivation - willingness to engage our metacognitive and cognitive skills.

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mentoring</b>                   | Mentoring in education involves pairing young people with an older peer or volunteer, who acts as a positive role model. In general, mentoring aims to build confidence, develop resilience and character, or raise aspirations, rather than to deliver specific academic skills or knowledge. Mentors typically build relationships with young people by meeting with them one to one for about an hour a week over a sustained period, either during school, at the end of the school day, or at weekends. Activities vary between different mentoring programmes, sometimes including direct academic support with homework or other school tasks. For programmes focused primarily on direct academic support see One to one tuition and Peer tutoring. Mentoring has increasingly been offered to young people who are deemed to be hard to reach or at risk of educational failure or exclusion.                         |
| <b>One-to-one tuition</b>          | One to one tuition involves a teacher, teaching assistant or other adult giving a pupil intensive individual support. It may happen outside of normal lessons as additional teaching - for example as part of Extending school time or a Summer school - or as a replacement for other lessons.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Oral language interventions</b> | Oral language interventions emphasise the importance of spoken language and verbal interaction in the classroom. They are based on the idea that comprehension and reading skills benefit from explicit discussion of either the content or processes of learning, or both. Oral language approaches include: Targeted reading aloud and discussing books with young children, Explicitly extending pupils' spoken vocabulary. The use of structured questioning to develop reading comprehension. All of the approaches reviewed in this section support learners' articulation of ideas and spoken expression, such as Thinking Together or Philosophy for Children. Oral language interventions therefore have some similarity to approaches based on metacognition, which make talk about learning explicit in classrooms, and to Collaborative Learning approaches, which promote pupils' talk and interaction in groups. |
| <b>Outdoor adventure learning</b>  | Outdoor adventure learning typically involves outdoor experiences, such as climbing or mountaineering; survival, ropes or assault courses; or outdoor sports, such as orienteering, sailing and canoeing. These can be organised as intensive residential courses or shorter courses run in schools or local outdoor centers. Adventure education usually involves collaborative learning experiences with a high level of physical (and often emotional) challenge. Practical problem-solving, explicit reflection and discussion of thinking and emotion (see also Metacognition and self-regulation) may also be involved. Adventure learning interventions typically do not include a formal academic component, so this summary does not include forest schools or field trips.                                                                                                                                           |
| <b>Parental engagement</b>         | We define parental engagement as the involvement of parents in supporting their children's academic learning. It includes: 1. approaches and programmes which aim to develop parental skills such as literacy or IT skills; 2. general approaches which encourage parents to support their children with, for example reading or homework; 3. the involvement of parents in their children's learning activities; and 4. more intensive programmes for families in crisis.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Peer tutoring</b>               | Peer tutoring includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support. In cross-age tutoring, an older learner takes the tutoring role and is paired with a younger tutee or tutees. Peer-assisted learning is a structured approach for mathematics and reading with sessions of 25-35 minutes two or three times a week. In reciprocal peer tutoring, learners alternate between the role of tutor and tutee. The common characteristic is that learners take on responsibility for aspects of teaching and for evaluating their success. Peer assessment involves the peer tutor providing feedback to children relating to their performance and can have different forms such as reinforcing or correcting aspects of learning. Peers are defined as other students or pupils at the same school or educational setting as the                |

intervention group; or at another local school (e.g. secondary students tutoring pupils at their own or their peers' primary schools). Peers will normally be of similar age and socioeconomic or cultural background. University students tutoring primary school pupils would not usually be classified as 'peers'.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Performance pay</b>                  | Performance pay schemes aim to create a direct link between teacher pay or bonuses, and the performance of their class in order to incentivise better teaching and so improve outcomes. A distinction can be drawn between awards, where improved performance leads to a higher permanent salary, and payment by results, where teachers get a bonus for higher test scores. Approaches differ in how performance is measured and how closely those measures are linked to outcomes for learners. In some schemes, students' test outcomes are the sole factor used to determine performance pay awards. In others, performance judgements can also include information from lesson observations or feedback from pupils, or be left to the discretion of the head teacher.                                                                                                                                                                                                                               |
| <b>Phonics</b>                          | Phonics is an approach to teaching reading, and some aspects of writing, by developing learners' phonemic awareness. This involves the skills of hearing, identifying and using phonemes or sound patterns in English. The aim is to systematically teach learners the relationship between these sounds and the written spelling patterns, or graphemes, which represent them. Phonics emphasises the skills of decoding new words by sounding them out and combining or 'blending' the sound-spelling patterns.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Reading comprehension strategies</b> | Reading comprehension strategies focus on the learners' understanding of written text. Pupils are taught a range of techniques which enable them to comprehend the meaning of what they read. These can include: inferring meaning from context; summarising or identifying key points; using graphic or semantic organisers; developing questioning strategies; and monitoring their own comprehension and identifying difficulties themselves (see also 'Metacognition and self-regulation').                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Reducing class size</b>              | As the size of a class or teaching group gets smaller it is suggested that the range of approaches a teacher can employ and the amount of attention each student will receive will increase, thereby improving outcomes for pupils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Repeating a year</b>                 | Pupils who do not reach a given standard of learning at the end of a year are required to repeat the year by joining a class of younger students the following academic year. This is also known as "grade retention", "non- promotion" or "failing a grade". For students at secondary school level, repeating a year is usually limited to the particular subject or classes that a student has not passed. Repeating a year is very rare in the UK but is relatively common in the USA where the No Child Left Behind Act (2002) recommended that students be required to demonstrate a set standard of achievement before progressing to the next grade level. Students can also be required to repeat a year in some European countries including Spain, France and Germany. In some countries, such as Finland, pupils can repeat a year in exceptional circumstances, but this decision is made collectively by teachers, parents and the student rather than on the basis of end of year testing. |
| <b>School uniform</b>                   | Schools identify clothing considered appropriate for pupils to wear in school, and usually specify the style and colour. Schools vary as to how strictly a uniform policy is enforced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Setting or streaming</b>             | Pupils with similar levels of current attainment are grouped together either for specific lessons on a regular basis (setting or regrouping), or as a whole class (streaming or tracking). The assumption is that it will be possible to teach more effectively or more efficiently with a narrower range of attainment in a class.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Small group tuition</b>              | Small group tuition is defined as one teacher or professional educator working with two, three, four, or five pupils. This arrangement enables the teacher to focus exclusively on a small number of learners, usually on their own in a separate classroom or working area. Intensive tuition in small groups is often provided to support lower attaining learners or those who are falling behind, but it can also be used as a more general strategy to ensure effective progress, or to teach challenging topics or skills.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Social and emotional learning</b> | Interventions which target social and emotional learning (SEL) seek to improve attainment by improving the social and emotional dimensions of learning, as opposed to focusing directly on the academic or cognitive elements of learning. SEL interventions might focus on the ways in which students work with (and alongside) their peers, teachers, family or community. Three broad categories of SEL interventions can be identified: 1. Universal programmes which generally take place in the classroom; 2. More specialised programmes which are targeted at students with particular social or emotional problems; 3. School-level approaches to developing a positive school ethos which also aim to support greater engagement in learning. |
| <b>Sports participation</b>          | Sports participation interventions engage pupils in sports as a means to increasing educational engagement and attainment. This might be through after-school activities or a programme organised by a local sporting club or association. Sometimes sporting activity is used to encourage young people to engage in additional learning activities, such as football training at a local football club combined with study skills, ICT, literacy or mathematics lessons.                                                                                                                                                                                                                                                                              |
| <b>Summer schools</b>                | Summer schools are lessons or classes during the summer holidays, and are often designed as catch-up programmes. Some summer schools do not have an academic focus and concentrate on sports or other non- academic activities. Others may have a specific focus, such as pupils at the transition from primary to secondary school, or advanced classes to prepare high-attaining pupils for university.                                                                                                                                                                                                                                                                                                                                               |
| <b>Teaching assistants</b>           | Teaching assistants (also known as TAs or classroom support assistants) are adults who support teachers in the classroom. Teaching assistants' duties can vary widely from school to school, ranging from providing administrative and classroom support to providing targeted academic support to individual pupils or small groups. Cognate terms: support staff; adult support staff; teaching assistants; associate staff; classroom assistants; classroom support assistant; auxiliary teachers; teacher's aide; education paraprofessional; nursery nurse (in early years' settings).                                                                                                                                                             |



## Appendix 6: Sample meta-analysis R code

```
##### Read me
#####
# R code to extract adjusted/unadjusted overall SMD, as well as CSV
# file for building a forest plot #
# -----
#
# All analyses are conducted using the "rma" function from the metafor
# package as follows: #
# 1. Unadjusted <- rma(yi = smd, vi = Vi, data = data)
#
# 2. Adjusted <- rma(yi = smd, vi = Vi, data = data, mods = ~ MOD)
#
# Where:
#
# smd = unquoted name of the outcome, e.g., smd_tool
#
# Vi = variance given by data$Vi = data$se^2, se and can be se_tool
#
# MOD: unquoted name of the moderator to include in the model
#
# This script requires Data to be cleaned
#
### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ###
### ### ### ### ### ### ### # ### #
```

```
##### FUNCTION
1#####
#####
```

```
#' Title: FUNCTION TO EXTRACT AND SAVE FORESTPLOT DATA (INCLUDING
UNAJUSTED POOLED SMD)
#*****
#*****
#
#' @param smd: This can take values such as "smd_tool," "smd_red,"
"smd_wri," "smd_math," and "smd_sci."
#' @param se: This can take values such as "se_tool," "se_red," "se_wri,"
"se_math," and "se_sci."
#' @param data: Dataframe to be used.
#' @param Sab: Strand abbreviation.
#' @param GdRV: Folder where to save the CSV files equivalent to the
forest plot.
#' @param VrS: Version of the analysis.
#' @param type: Indicates whether to perform subgroup analysis (by
primary or secondary) or overall (i.e., type="All").
#' @param level: Level of significance to obtain the CIs for each study,
as in the forest plot (i.e., level=0.05).
#' @param width: This is to adjust the width of the column in the CSV data
(i.e., width = c(1.5, 0.8, rep(0.7, 4), 1.4)).
#example
# smd="smd_tool";se="se_tool";data= data.frame(Data);VrS=version;
# type="All";level=0.05;width = c(1.5,0.8,rep(0.7,4),1.4)

Forest_table <- function(smd,se,
data,Sab=Strand_ab,GdRV=Gdrive,VrS=version, type,level=0.05,width =
c(1.5,0.8,rep(0.7,4),1.4) ){
```

```

data$smd <- as.numeric(as.character(data[,smd]))
data$se <- as.numeric(as.character(data[,se]))
data$Vi <- as.numeric(as.character(data[,se]))^2

data1 <-
na.omit(data[data$Vi>0,c("se","smd","Vi","pub_author","year_since_pub","id")])
mods0 <- rma(yi=smd, vi=Vi, data=data1)

Table1.0 <- data.frame(ID=data1$id,
                        Author=as.character(data1$pub_author),
                        year=data1$year_since_pub,
                        SMD=round(data1$smd,3),
                        SE=round(data1$se,3),
                        ci.lb = round(data1$smd - qnorm(level/2,
lower.tail = FALSE) * sqrt(data1$Vi),3),
                        ci.ub = round(data1$smd + qnorm(level/2,
lower.tail = FALSE) * sqrt(data1$Vi),3),
                        weight
=as.numeric(as.character(formatC(weights(mods0), format="f", digits=3,
width=4))), stringsAsFactors = F)

out_mods_name <- paste0("RE Model: Q = ",formatC(mods0$QE,digits=3,
format="f"),";",
                        " tau2 = ",formatC(mods0$tau2, digits=3,
format="f"),";",
                        " I2 = ",formatC(mods0$I2,digits=3,
format="f"),"%")

Table1.0$all <- paste0(formatC(Table1.0$SMD, format="f", digits=3),"
["",
                        formatC(Table1.0$ci.lb, format="f", digits=3),"",
                        "
",
                        formatC(Table1.0$ci.ub, format="f", digits=3),
"]" )

Table1.1 <- Table1.0[order(Table1.0$year,decreasing =
T),!names(Table1.0)%in% "year"]
Table1.1[dim(Table1.1)[1]+1,] <- c(rep(out_mods_name,(dim(Table1.1)[2]-
1)),
                        paste0(formatC(mods0$beta,
format="f", digits=3)," ["", formatC(mods0$ci.lb, format="f", digits=3),"",
",formatC(mods0$ci.ub, format="f", digits=3), "]" ))

Table1.b <- Table1.1[,-1]
names(Table1.b) <- LETTERS[1:dim(Table1.b)[2]]

Table1 <- flextable(Table1.b, col_keys = names(Table1.b))
Table1 <- width(Table1,j=1:7, width = wdth)
Table1 <- align(Table1,j=2:7, align = "center", part = "all" )
Table1 <- align(Table1,j=1, align = "left", part = "all" )
Table1 <- align(Table1,i = dim(Table1.b)[1], align = "left", part =
"body" )
Table1 <- bold(Table1, i = dim(Table1.b)[1],part = "body")
Table1 <- bold(Table1, part = "header")
Table1 <- fontsize(Table1, size = 9, part = "all")

```

```

Table1 <- padding(Table1, padding.top = 0, part = "all")
Table1 <- merge_h(Table1, i = dim(Table1.b)[1])
Table1 <- hline(Table1, i= dim(Table1.b)[1]-1, part = "body", border =
fp_border(color = "black", width = 1) )
Table1 <- set_header_labels(Table1, values = c(A="Author (Year)",
B="Effect size (SMD)",
C="Standard error",
D="95% LB",
E="95% UB",
F="Weight",
G="SMD [95% CI]"))

Table1 <- footnote(Table1, i = 1, j = 2:5, part = "header",
value = as_paragraph(c("SMD:Standardised mean
difference",
"LB: Lower Bound",
"UB: upper Bound",
"CI: Confidence Interval")),
ref_symbols = letters[1:4])

Table1 <- compose(Table1,i=dim(Table1.1)[1],j=1:(dim(Table1.1)[2]-2),
part = "body",
value = as_paragraph(sub("tau2.*", "", A),
tolower("\u03C42"), as_sup("2"),
sub("I2.*", "I", sub(".*tau2", "",
A)), as_sup("2"),
sub(".*I2", "", A)
))

#for scv data

Table1.2 <- Table1.1
names(Table1.2) <-
c("ID", "Author", "SMD", "SE", "ci.lb", "ci.ub", "weight", "SMD[95CI]")
Table1.2[grep("RE
Model:", Table1.2$Author), c("SMD", "SE", "ci.lb", "ci.ub", "weight")] <- "
Sname <- ifelse(gsub("se_", "", se)=="tool", "toolkit",
ifelse(gsub("se_", "", se)=="red", "Reading",
ifelse(gsub("se_", "", se)=="wri", "Writing",
ifelse(gsub("se_", "", se)=="math", "Maths",
"Science"))))

dir.create(file.path(GdRV, "Forest plots"), showWarnings = FALSE)

write.csv(Table1.2, file =sub("__", "_", paste0(GdRV, "/Forest
plots/", Sab, "_", VrS, "_", Sname, "_", type, ".csv")), row.names = FALSE)
Tbales<- list(TB1=Table1, TB2=Table1.2)
return(Tbales)

}

##### FUNCTION
2#####

#' Title: FUNCTION TO PRODUCE rma MODEL WITH or WITHOUT A MODERATOR
**** *
#'
#' @param data: Dataframe to be used.
#' @param smd: Name of the smd variable in quotation (i.e "smd_tool").

```

```

#' @param sei: Name of the standard error in quotation(i.e "se_tool").
#' @param moderator: Moderator to be used. If not specified, a model
without a moderator will be fitted.
#' @param ou_mods_name: moderator description

my_RMA <-function(data, smd="smd_tool", sei="se_tool", moderator=NULL,
ou_mods_name=NULL){
  data$smd <- data[,smd]
  data$Vi <- data[,sei]**2
  data$MOD <- data[,moderator]
  if(missing(moderator)){Mods1 <- rma(yi=smd, vi=Vi, data=data)}
  if(!missing(moderator)){Mods1 <- rma(yi=smd, vi=Vi, data=data, mods = ~
MOD)}

  #extract estimates
  ou_mods_name1 <- paste0(" tau2 = ",formatC(Mods1$tau2,digits=3,
format="f"),";",
                                " Q = ",formatC(Mods1$QE, digits=3,
format="f"),";",
                                " R2 = ",formatC(Mods1$R2,digits=3,
format="f"),"%;",
                                " I2 = ",formatC(Mods1$I2,digits=3,
format="f"),"%")

  #sample size and preparing results
  if(missing(moderator)){
    ou_mods_name1 <- sub(" R2 = %;", "",ou_mods_name1)
    Tables <- c(dim(na.omit(data[,c(smd,sei)]))[1], "")
    out.res <-
data.frame(rbind(data.frame(rround(Mods1$beta,3),rround(Mods1$ci.lb,3),
rround(Mods1$ci.ub,3), stringsAsFactors = F),c(rep("",3))))
    names(out.res)<-c("Mods1.beta", "Mods1.ci.lb","Mods1.ci.ub")
    rownames(out.res) <- names(Tables) <- c("Overall", paste("RE
Model:",ou_mods_name1))
  }
  if(!missing(moderator) & is.numeric(data[,moderator])){
    Tables <- c(rep(sum(!is.na(data[,moderator])),2), "")
    out.res <-
data.frame(rbind(data.frame(rround(Mods1$beta,3),rround(Mods1$ci.lb,3),
rround(Mods1$ci.ub,3), stringsAsFactors = F),rep("",3)))
    names(out.res)<-c("Mods1.beta", "Mods1.ci.lb","Mods1.ci.ub")
    out.res["intrcpt",] <- ""
    rownames(out.res) <- names(Tables) <-
c(ou_mods_name,"Estimate",paste("ME Model:",ou_mods_name1))
  }
  if(!missing(moderator) & !is.numeric(data[,moderator])){
    out.res <- data.frame(rbind( c(rep("",3)),
data.frame(rround(Mods1$beta,3),rround(Mods1$ci.lb,3),
rround(Mods1$ci.ub,3), stringsAsFactors = F),c(rep("",3))))
    names(out.res)<-c("Mods1.beta", "Mods1.ci.lb","Mods1.ci.ub")
    Tables <- c(sum(table(data[,moderator])), table(data[,moderator]), "")
    names(Tables) <- c(ou_mods_name, names(Tables) [-
c(1,length(Tables))],paste("ME Model:",ou_mods_name1))
    rownames(out.res) <-
c(ou_mods_name,sub(paste0(moderator,"|MOD"), "",rownames(out.res) [-
c(1,length(Tables))]),paste("ME Model:",ou_mods_name1))

```

```

    rownames(out.res) <-
sub("intrcpt",names(Tables)[!(names(Tables)==rownames(out.res))],rownames
(out.res))
    out.res[2, ] <-"Reference"
  }

  #Combine estimates with sample size Table
  out.res1 <-data.frame(cbind(Name= rownames(out.res), N =Tables,
out.res))
  names(out.res1) <- c("Name" ," N" ,"SMD", "95% LB","95% UB")
  rownames(out.res1) <- 1:dim(out.res1)[1]

  return(list(ES=out.res1,mods =Mods1))

}

### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ###
### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ### ###
##### FOREST TABLES
#####
#
# Libraries
#--- --- --- --
library(flextable)
library(officer)
library(metafor)
library(readxl)
library(stringr)
library(glmulti)

#=====#
# Part I: Unadjusted analysis : overall and subgroup to #
# Export CSV data frame for building forest plot #
#=====#

GdRV="G:/My Drive/Database_project/Database_project/A
Final/Batch2_2023/Peer tutoring(PT) "
Data=NewData.4

# 1. Overall
# --- --- ---
Tool_all <-tryCatch(Forest_table(smd="smd_tool",se="se_tool",data=
Data,type="All",GdRV=GdRV)$TB1,error = function(e) NA)# toolkit
Red_all <-tryCatch(Forest_table(smd="smd_red",se="se_red",data=
Data,type="All",GdRV=GdRV)$TB1,error = function(e) NA) # Reading
Wri_all <-tryCatch(Forest_table(smd="smd_wri",se="se_wri",data=
Data,type="All",GdRV=GdRV)$TB1,error = function(e) NA) # Writing
Math_all <-tryCatch(Forest_table(smd="smd_math",se="se_math",data=
Data,type="All",GdRV=GdRV)$TB1,error = function(e) NA)# Maths
Sci_all <-tryCatch(Forest_table(smd="smd_sci",se="se_sci",data=
Data,type="All",GdRV=GdRV)$TB1,error = function(e) NA) # Science

# 2. subgroup analysis by int_setting_raw

```

```

#--- --- --- --- --- --- --- --- ---
Unique_int_sett <-
as.character(unique(Data$int_setting_raw[!is.na(Data$int_setting_raw)]))
Unique_int_sett <-
Unique_int_sett[grepl("Nursery|Primary|Secondary",Unique_int_sett)]
names(Unique_int_sett) <- ifelse(grepl("Nursery",Unique_int_sett), "NS",
                                ifelse(grepl("Primary",Unique_int_sett),
"PS", "SS"))

for(k in 1: length(Unique_int_sett)){
  k1 <- names(Unique_int_sett)[k]
  assign(paste0("Table1_tool.",k1),
tryCatch(Forest_table(smd="smd_tool",se="se_tool",GdRV=GdRV,data=
Data[Data$int_setting_raw==Unique_int_sett[k],],type=k1)$TB1,error =
function(e) NA))# toolkit
  assign(paste0("Table1_red.",k1),
tryCatch(Forest_table(smd="smd_red",se="se_red",GdRV=GdRV,data=
Data[Data$int_setting_raw==Unique_int_sett[k],],type=k1)$TB1,error =
function(e) NA)) # Reading
  assign(paste0("Table1_wri.",k1),
tryCatch(Forest_table(smd="smd_wri",se="se_wri",GdRV=GdRV,data=
Data[Data$int_setting_raw==Unique_int_sett[k],],type=k1)$TB1,error =
function(e) NA)) # Writing
  assign(paste0("Table1_math.",k1),
tryCatch(Forest_table(smd="smd_math",se="se_math",GdRV=GdRV,data=
Data[Data$int_setting_raw==Unique_int_sett[k],],type=k1)$TB1,error =
function(e) NA))# Maths
  assign(paste0("Table1_sci.",k1),
tryCatch(Forest_table(smd="smd_sci",se="se_sci",GdRV=GdRV,data=
Data[Data$int_setting_raw==Unique_int_sett[k],],type=k1)$TB1,error =
function(e) NA)) # Science
}

##### POOLED SMD
#####
#####

#=====#
# Par II: undjusted and adjusted analysis #
#=====#

#1. description of moderators
#--- --- --- --- ---
Paths <- "G:/_shortcut-targets-by-id/13-
LH2gB5g5bcyddrnVPbzXMCPMwMP97H/Metafor analysis"
speci <- data.frame(read_excel(paste0(Paths,"/Data specification for
Metafor.xlsx")), stringsAsFactors = F)
specil <- speci[,c("Columns","Description")]
specil$Columns <- sub("\r\n","",specil$Columns)
#add more moderators to speci dataframe
if(sum(specil$Columns=="digit_tech_raw")==0){
  specil[dim(specil)[1]+1,] <-c("digit_tech_raw","Digital technology
inclusion")
}
specil[dim(specil)[1]+1,] <-c("pub_type_raw","Publication type")

```

```

#2. one moderators at time to use in meta-regression
#--- --- --- --- --- --- --- --- --- --- ---
Not_Moderator0<-
c("id","pub_author","out_strand","out_out_type_tool","smd_tool"
,"se_tool","v_tool","pub_type_raw","out_tit","fsm_perc_info")
Not_Moderator <-
Not_Moderator0[!Not_Moderator0%in%Common_variables_change0]
moderators_fact <- names(Data)[!(names(Data)%in%
c(Not_Moderator,Min_SS_variables,"year_since_pub","smd_tool"
,"se_tool","pub_author","id"))]

#3. exclude moderators without enough variability
#--- --- --- --- --- --- --- --- --- --- ---

NotUse_funcnt <-function(i){
  Var_N <- length(na.omit(Data[,i]))
  if(Var_N <= 30) {chk <- 4}
  if(Var_N > 30 & Var_N <= 50) {chk <- 9}
  if(Var_N > 50 & Var_N <=100) {chk <- 14}
  if(Var_N > 101 ) {chk <- 19}
  if (sum((table(Data[,i])>chk)) %in% c(0,1))
  {dd=data.frame(variable=i,table(Data[,i]))
  dd$cat <- dim(dd)[1]
  names(dd) <- c("variable","category", "N","Ncat")}
  if (sum((table(Data[,i])>chk))>1){dd=NULL}
  return(dd)
}

#moderator to use
NotUse_var <-
c("pub_year0",unique(NotUse_tab1$variable[!NotUse_tab1$variable%in%Mandat
ory_var]))#keep mandatory variables
Data <- Data[, !(names(Data)%in% NotUse_var) ]
moderators <- names(Data)[!(names(Data)%in%
c(Not_Moderator,Min_SS_variables)))]
if(length(na.omit(Data$fsm_perc_info))<20){moderators <-
moderators[!(moderators %in% "fsm_perc_info")]}
```

#4. apply the my\_RMA function to obtain the unadjusted and adjusted overall SMD

```

#--- --- --- --- --- --- --- --- --- --- ---
---
```

#unadjusted

```

#--- --- --
out_mods0.1 <- my_RMA(data=NewData.4)
out_mods0.2 <- out_mods0.1$ES
```

#Adjusted: toolkit outcome regressed on one moderator at time

```

#--- --- --- --- --- --- --- --- --- --- ---
out_mods <- sapply(moderators, function(i)
my_RMA(data=NewData.4,moderator=i,
ou_mods_name=ifelse(sum(specil$Columns%in%i)==1,
specil[specil$Columns==i,"Description"],i)), simplify = F)
out_mods1 <- sapply(moderators, function(i) out_mods[[i]]$ES, simplify =
F)
```

##### END  
#####  
#####



## **EEF Evidence Database Phase 2: Protocol and Analysis Plan**

Steve Higgins, Berenice Villanueva Aguilera, Emma Dobson,  
Louise Gascoine, Afroditi Kalambouka, Maria Katsipataki,  
Jonathan Reardon, Margherita Rovidia and Germaine  
Uwimpuhwe

January 2024



# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

### Table of contents

|                                       |    |
|---------------------------------------|----|
| Table of contents .....               | 2  |
| Background and review rationale ..... | 3  |
| Objectives.....                       | 3  |
| Research questions .....              | 4  |
| Methodology.....                      | 4  |
| Recording and reporting .....         | 11 |
| Personnel .....                       | 11 |
| Conflicts of interest .....           | 11 |
| Ethical issues .....                  | 11 |
| Acknowledgements.....                 | 11 |
| References .....                      | 12 |

# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

### Background and review rationale

- The Education Endowment Foundation (EEF) - Sutton Trust Teaching and Learning Toolkit ('Toolkit') is an accessible summary of 30 areas of educational practice that is used by practitioners in England and by EEF's international partners around the globe. The evidence summaries for each strand draw on a series of meta-analyses, completed in Autumn 2021 (EEF Evidence Database Phase 1), of the studies that were included in the reviews on which the previous version of the Toolkit was based (see Higgins et al. 2022 for a review of the methodologies). A protocol and analysis plan for Phase 1 of the Database project was completed in June 2019 (Higgins et al. 2019). A version for early years practitioners was updated in February 2023 following the same methodology.
- A limitation of the current version of the database is that the coverage of studies in each strand varies according to the inclusion criteria of the underpinning reviews which were used to identify the screened studies. To ensure that the coverage of studies is equivalent across all of the Toolkit strands a systematic search needs to be conducted across each of the strands.
- The aim of this phase of the database project, therefore, is to update each of the strands by systematically searching for missing studies using OpenAlex<sup>1</sup>, an open source bibliographic database, and some of the machine learning tools for search and screening available within EPPI-Reviewer<sup>2</sup>.
- The ultimate aim (Phase 3) is to create a series of 'living reviews' for each of the Toolkit strands which can be updated as new evidence is identified.

### Objectives

The specific objectives for this phase of the project are:

- To update the web-based database of the single studies included in the current Toolkit, which meet a consistent set of inclusion criteria, with a series of systematic reviews for missing studies for each Toolkit strand;
- To re-estimate the pooled effect for each Toolkit strand based on this database using meta-analytic approaches;
- To explore variation in impact systematically, both within each strand and across strands:
  - for pedagogical variation (such as by subject, by age of learner or by intervention duration and intensity);
  - for methodological variation (such as design features, sample size or outcome and measurement artefacts)
  - for features associated with rigour and robustness of evaluation methods (such as randomisation, attrition, independence of evaluation) to identify potential bias.
- To create a series of reviews and machine learning classifiers with which to update the Toolkit as a set of linked living reviews.

---

<sup>1</sup> <https://openalex.org>

<sup>2</sup> [https://eppi.ioe.ac.uk/CMS/Portals/35/machine\\_learning\\_in\\_eppi-reviewer\\_v\\_7\\_web\\_version.pdf](https://eppi.ioe.ac.uk/CMS/Portals/35/machine_learning_in_eppi-reviewer_v_7_web_version.pdf)

## Research questions

The overarching primary research question is framed as follows:

- What is the average impact in each of the areas of the Teaching and Learning Toolkit on pupils' attainment in schools, compared with pupils who do not experience these interventions or approaches?  
What is the average impact in each of the areas of the Early Years Toolkit on pupils' attainment in schools, compared with pupils who do not experience these interventions or approaches?

In addition, there are two supplementary questions:

- How consistent is this impact by age of pupils and by subject outcome?
- What factors help to explain any variation in impact?

## Methodology

### *Inclusion and exclusion criteria for the review*

- The inclusion criteria were defined for Phase 1 of the database project (see the protocol and analysis plan: Higgins et al. 2019) and are set out below. These have been revised and updated to address inconsistencies and ambiguities identified during their use in Phase 1.

#### **Inclusion criteria**

##### *Population*

The majority of the sample (>50%) on which the analysis of impact in the study is based are learners or pupils aged between 3-18 (further education or junior college students are included where their study is for school level qualifications).

##### *Intervention*

Evaluates the impact of an educational intervention or approach, including named or clearly defined programmes and recognisable approaches classifiable according to the Toolkit strand definitions (see Appendix 1..

##### *Setting*

#### **Excluded**

The majority of the sample (>50%) are: in post-secondary education; in higher education; adults; infants under 3; other students over 18.  
The sample consists only or mainly of learners of a second or additional language where these are a minority in the setting and where the language is not the usual language(s) of instruction for that setting.

The intervention or approach is not applicable to the current Toolkit strand definitions (see Appendix 1). Interventions designed only for second or additional language learners of the language(s) of instruction.

# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

The intervention or approach is undertaken in a normal educational setting or environment for the learners involved, such as a nursery or school or a typical educational setting for school age pupils (e.g. an outdoor field centre or museum).

Laboratory studies.  
Specially created environments (either physical or virtual) designed for theoretical research questions, rather than for learners' educational benefit.

### *Study design*

A valid counterfactual comparison between those receiving the educational intervention or approach and those not receiving it.

Single group and single subject designs where there is no control for maturation or growth.

### *Outcomes*

Assessment of educational or cognitive achievement which reports quantitative results from testing of attainment or learning outcomes such as by standardised tests or other appropriate curriculum assessments or school examinations or appropriate cognitive measures relating to the curriculum.

Attitudinal, affective or motivational outcomes.  
Cognitive or metacognitive measures of learning processes (e.g. working memory, or metacognitive monitoring).

A quantitative estimate of the impact of the intervention or approach on the educational attainment of the sample involved in the intervention or approach can be calculated or estimated in the form of an effect size (standardised mean difference) with its standard error based on a counterfactual comparison.

Purely qualitative outcomes.  
Studies where an effect size (standardised mean difference) and standard error cannot be identified, calculated or estimated with reasonable precision.<sup>3</sup>

### *Language*

Studies written in English.

Studies in languages other than English.

## **Search strategy for identification of studies**

Studies for each strand will be identified using keywords and terms developed in Phase 1 (e.g. using the Toolkit strand specific keywords and some named programmes and interventions), together with the studies screened previously for each of the Toolkit strands. These studies will then be used to identify potentially similar studies via network graph searches in OpenAlex<sup>4</sup>, a database of millions of interconnected research references or 'entities', using the machine learning tools in EPPI-Reviewer 6. This approach needs data from which to 'learn'; the previous screening decisions from Phase 1 of

---

<sup>3</sup> Such as by using the conversions available in David B. Wilson's online conversion tool:

<https://campbellcollaboration.org/escalc/html/EffectSizeCalculator-Home.php>.

<sup>4</sup> <https://openalex.org>

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

the project should provide sufficient information to begin this process (Stansfield et al. 2019). A separate search and retrieval review for each Toolkit strand will be set up in EPPI-Reviewer 6 to manage the searching and screening process. Studies from other sources, screened for strand relevance, may also be used to teach the machine learning tools at this stage.

Additional comparison searches will be undertaken in Proquest Dissertations and Theses Global<sup>5</sup> and a database of UK dissertation abstracts (EThOS<sup>6</sup>), as preliminary exploration indicates these sources may not be comprehensively included in OpenAlex. These searches will be discontinued if the studies identified are found to be included in the OpenAlex searches.

#### Selection of studies

Customised machine classifiers will be developed for each of the Toolkit strands to reduce the total number of studies that need to be screened manually<sup>7</sup>. The aim is to create a search and screening process for each Toolkit strand which can then be used to update the strands as a series of linked 'living reviews' (Elliot et al. 2017). The studies will be screened using the 'priority screening' tools in EPPI-Reviewer 6<sup>8</sup> (Thomas et al. 2017).

Screening will be undertaken in two stages. The first uses the title and abstract, and the focus is on identifying studies which can clearly be *excluded*. The second uses the full text, where the focus is on ensuring that the study meets *all* of the inclusion criteria. A study will be excluded once a single inclusion criterion is identified that it does not meet. A minimum of 10% of studies will be double screened at each stage.

Studies which are included at title and abstract stage will then be retrieved for full text screening. Studies which are identified as borderline will be reviewed by two coders and referred to a third if agreement cannot be reached, or where there is still some uncertainty.

At this stage, the focus is on identifying studies for data extraction (Lefebvre et al. 2022). Sometimes, a report includes more than one study, in which case the report will be duplicated for each included study (for example a journal article or a dissertation describing a series of experiments with different samples of pupils). In some cases, there are multiple reports on the same study. This can be challenging to identify, especially where there are different authoring teams. These will usually be identified and linked at full text screening, but further checks will be made at data extraction, data cleaning and analysis. Linked reports will usually have copies of all of the relevant reports made available for data extraction in EPPI-Reviewer 6.

Results will be tracked in EPPI-Reviewer 6 and recorded using Excel to keep track of the process, equivalent to the information in a PRISMA flow chart. Each strand will be updated once following this approach, so that future updates can adopt a living review methodology. The order for updating strands will take account of EEF priorities and will be agreed with the Synthesis Team.

---

<sup>5</sup> <https://about.proquest.com/en/products-services/pgdtglobal/>

<sup>6</sup> <https://ethos.bl.uk/>

<sup>7</sup> [https://eppi.ioe.ac.uk/CMS/Portals/35/machine\\_learning\\_in\\_eppi-reviewer\\_v\\_7\\_web\\_version.pdf](https://eppi.ioe.ac.uk/CMS/Portals/35/machine_learning_in_eppi-reviewer_v_7_web_version.pdf)

<sup>8</sup> <https://eppi.ioe.ac.uk/CMS/Portals/35/Manuals/ER%20Web%20-%20Priority%20Screening.pdf>

# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

### *Data extraction and management*

Data extraction will follow the same procedures as in Phase 1 using the same data extraction tools: EEF main data extraction (v 2.0 March 2022), EEF Toolkit effect size data extraction (v 2.0 March 2022) and EEF Toolkit strand specific data extraction (see Appendices 1-3). Guides for coders are available which have been updated with additional examples to clarify codes where issues had been identified in Phase 1 (Main Data Extraction and Effect Size Data Extraction Coding Guides: see Appendices 4 and 5).

A minimum 10% sample of studies will be double coded (by strand and by coder) to ensure reliability.

A data review and cleaning process will be undertaken for each strand prior to analysis. This includes the facility to review the text highlighted in each study report and to compare it with the associated code.

### **Appraisal of included studies**

Two approaches to the appraisal of included studies will be undertaken. The first is to identify a 'padlock' rating for each strand. This is based on an aggregation of a number of the data extraction questions and includes the total number of studies in a strand, how recent the studies are, and the proportion of studies which are randomised, are independently evaluated, and have high levels of attrition.

Second, an additional risk of bias summary is being developed for each of the single studies based on a synthesis of a number of existing risk of bias and quality appraisal tools<sup>9</sup>. This will similarly be based on an aggregation of a number of the data extraction questions including randomisation, sample size, attrition, type of analysis and ecological validity.

### **Effect size calculation**

The database includes and summarises quantifiable school attainment outcomes from experimental studies which meet the inclusion criteria and match the Toolkit themes. The key metric used is the Standardised Mean Difference or effect size (Cohen's d or Hedges' g) as a range of tests and outcome measures are used for educational attainment.

Where possible, a post-test comparison of the impact of the intervention or approach, adjusted for baseline and clustering of pupils in classes, will be selected as the primary outcome. If this is calculable<sup>10</sup> from other reported data then this effect size will be used. Where this is not available the following order of preference will be used:

- Post-test comparison adjusted for baseline (such as from ANCOVA or MLM/HLM);

---

<sup>9</sup> Common risk of bias tools include the [Risk of Bias 2 tool](#) for RCTs and [ROBINS-I](#) for quasi-experimental studies. Tools for assessing the quality of qualitative research include the [Critical Appraisal Skills Programme \(CASP\) checklist](#) for qualitative research or adapted versions of this checklist.

<sup>10</sup> For example, by using the effect size calculator created by David Wilson (Lipsey & Wilson, 2001) and available on the Campbell website: <https://www.campbellcollaboration.org/research-resources/effect-size-calculator.html> or Psychometrika: [https://www.psychometrika.de/effect\\_size.html](https://www.psychometrika.de/effect_size.html)

# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

- Post-test only comparison (for randomised studies or matched studies where there is no or little baseline imbalance<sup>11</sup>);
- Gain score comparison (for non-randomised studies or where there is notable imbalance at baseline);

For studies reporting only descriptive statistics for continuous measures of pupil attainment outcomes, the post-intervention mean of the control group will be subtracted from the post-intervention mean of the intervention group and the resulting difference will be divided by the pooled standard deviation, adjusted for sample size if necessary (Hedges'  $g$ ). An accompanying standard error (representing the 95% confidence interval) will also be recorded<sup>12</sup>. Wherever possible the descriptive outcome statistics (N, means and standard deviations for control and intervention groups) will be collected, even where the study report reports an effect size and accompanying standard error, or where an effect size can be calculated from other inferential statistics.

All effect sizes will be coded according to the type of outcome calculation used for both risk of bias and sensitivity analysis (see Appendix 2). These effect sizes can then be meta-analysed separately as they may represent different metrics (such as when the intervention affects the relative spread of the intervention group, see Xiao et al. 2016). For studies where there is substantial baseline imbalance, a gain score effect size will be selected (such as in quasi-experimental designs or natural experiments where groups are not well matched).

The Toolkit focuses on academic attainment outcomes. It is likely that in some studies there will be several measures of the same or similar outcomes from the same sample of learners. When this happens, we will select the most representative measure of overall attainment, such as a standardised test of reading comprehension. When no single outcome is judged to be appropriate in relation to the design of the study and the Toolkit strand it is included in, we will average effects deriving from similar or complementary measures of school attainment. If the same group of participants is used more than once (such as the same control group compared with two different treatment groups, each applicable to the Toolkit) the sample size and associated standard error will be adjusted to ensure the study contributes fairly to the overall average.

### Dealing with missing data

Outcome data are likely to be reported in a variety of formats in educational studies and there are likely to be studies with incomplete or missing descriptive data. For studies that report inferential statistics such as  $t$ ,  $F$ , or  $p$ -values only, the appropriate conversion formula will be applied to calculate the  $d$ -index as the effect size estimate (Lipsey & Wilson, 2001; Hedges, Shymansky, & Woodworth, 1989; Hedges & Olkin, 1985). To ensure appropriate corrections for small sample size bias, all  $d$ -indices will be converted to the unbiased Hedges'  $g$  statistic where necessary. Adjustment for clustering will also be undertaken where there is sufficient information to do this.

Due to the large number of studies involved in the Toolkit and the possible age of the older studies we will not normally contact the authors about incomplete, missing or apparently incorrect data. This may mean some studies are excluded at a late stage in the review process.

---

<sup>11</sup> Chance imbalance is likely to occur in some randomised studies (the smaller the study the greater the risk) but can usually be taken into account through a baseline adjusted analysis.

<sup>12</sup> The standard error can be calculated from the confidence intervals or estimated from  $p$ -values: [https://handbook-5-1.cochrane.org/chapter\\_7/7\\_7\\_2\\_obtaining\\_standard\\_errors\\_from\\_confidence\\_intervals\\_and.htm](https://handbook-5-1.cochrane.org/chapter_7/7_7_2_obtaining_standard_errors_from_confidence_intervals_and.htm)

# EEF Evidence Database Phase 2 Protocol and Analysis Plan

## Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

### *Data synthesis*

For each strand, a primary standardised mean difference (SMD) and its confidence interval will be identified and extracted from each of the selected studies for each Toolkit strand. Estimates from appropriate trials contributing to a specific strand will be synthesised into a single pooled effect using random effects meta-analysis using restricted maximum likelihood (REML) estimation method following Langan et al. (2019) and Viechtbauer's (2005) recommendations, using the R package Metafor (Viechtbauer, 2010). Wherever relevant, sub-group or 'mini-strand' analyses will be undertaken using a similar approach. A separate pooled effect will be calculated for each Toolkit strand for reading, mathematics and science outcomes and for early years, primary and secondary age pupils where data is available. (A sample R script for Metafor can be found in Appendix 6.)

As noted above, a single overall main effect will be selected for each study. Some studies may include multiple comparisons for different groups where the interventions or approaches for the different groups can be distinguished in the data extraction coding. In this case standard errors will be adjusted to take account of dependency or, where appropriate, a multi-level meta-analysis will be undertaken. Where there are fewer than ten studies in a strand (or mini-strand) a meta-analysis will not be undertaken as the estimate may be unreliable.

### **Investigation of heterogeneity**

The  $I^2$  statistic will be used to assess the relative heterogeneity (Borenstein et al. 2010; Schmid, Stijnen & White 2020). It is possible that the estimated variability may not only be due to random factors but may be partially explained by some moderator(s). To explore the influence of moderators on the extent of heterogeneity, further analysis accounting for moderators will be undertaken using mixed-effects meta-regression models (Viechtbauer 2007)<sup>13</sup>. Exploration will not normally include variables where there are fewer than 30 studies in a category.

### **Sensitivity analysis**

To assess potential bias associated with individual out-of-range calculated effect sizes which may potentially distort the overall interpretation of the findings, a sensitivity analysis will be undertaken (Hedges & Olkin, 1985). This is intended to determine whether the removal of a particular effect size

---

<sup>13</sup> The models for all possible combinations of the available moderators ( $n$ ) will be fitted (the number of fitted models equals  $2^n$ ). Then the set of moderators that explain most of the heterogeneity will be selected based on the heterogeneity statistics to identify the Adjusted  $I^2$ . Since the more moderators there are in the model, the smaller the  $I^2$  is likely to be, using  $I^2$  alone tends to choose a model with too many moderators, which may not necessarily be the optimal model. Therefore, the Adjusted  $I^2$  will be used in the model selection process to avoid the possibility of overfitting. This Adjusted  $I^2$  will be obtained from the model  $I^2$ , penalised for the number of parameters in the model. The same penalty term  $\frac{2P(P+1)}{(N-P-1)}$  from Wagenmakers and Farrell (2004) will be used to derive the corrected Akaike information criterion (AICc) from the Akaike information criterion (AIC) applied to the  $I^2$  statistics to obtain Adjusted  $I^2$ . Where  $P$  denotes the number of parameters in the model (1 + number of moderators). All studies with missing values on any of the selected moderators will be ignored while fitting the related mixed-effect model (optimal model). The same studies will be excluded in the random effects model (the model without any moderators), to compare its  $I^2$  and that of the optimal model. These analyses will be conducted using the Metafor R package.

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

increases the fit of the remaining effect sizes in a homogeneous distribution while not substantially affecting the interpretation of the recalculated mean effect size. Various approaches to identifying potential outliers will be used, including visual examination of data organized into forest plots and also performing “one study removed” (Borenstein et al. 2009 - for a more exploratory approach see Baker & Jackson, 2008). Identified outliers will be examined with the potential to remove them from the final dataset. Potential sources of bias, such as study design, type of treatment, publication type, missing data, sample size, or attrition, will be carefully examined through the corresponding moderator variable analyses.

#### **Risk of bias**

Risk of bias will be assessed at both study and Toolkit strand levels using a number of categories in the data extraction tools (see above: appraisal of included studies). These study level variables will be included in the moderator analysis. A further analysis will then be undertaken to see to what extent the risk of bias variables explain systematic variation in the pooled effect.

Relying on available and published studies may bias or inflate the overall intervention effect, particularly in education, which has a relatively large proportion of smaller studies. To evaluate potential publication bias across the database, we will review the associations between publication type and the pooled effect (i.e. journal article, dissertation or thesis, technical report, book or book chapter, conference paper, and other) in each Toolkit strand. Thesis completion is not usually influenced by the size of the effect, unlike journal articles, so this can be a useful category to use for comparison.

A further exploration using selection models will be undertaken. This method was initially proposed by Hedges (1984) to adjust for publication bias. It assumes that homogeneous effect sizes and only significant studies are published. Since these assumptions are questionable, especially in education (Higgins, 2018), a further three-parameter variant of Hedges (1984) recommended by McShane, Böckenholt, and Hansen (2016), will be adopted which relaxes these assumptions.

Other methods for assessing small study bias will be explored, such as a visual inspection of a funnel plot or Duval & Tweedie’s (2000) trim and fill. Becker (2005) and Banks et al. (2012) recommend the discontinuation of the use of the failsafe N to assess publication bias, as the results are often inconsistent with the results from other publication bias methods (see also Page et al. 2020). This is likely to be because the small-study effect is only one of the reasons among many others for such variation such as heterogeneity in the effects or study-level factors (Marks-Anglin & Chen 2020). In education all of the methods to detect publication bias are problematic due to the negative association between sample size and effect size (e.g. Slavin and Smith, 2009) and the likelihood of ‘super-realization bias’ (Cronbach et al., 1980) in smaller studies.

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

### Recording and reporting

The Metafor outputs from the analysis of each of the Toolkit strands will inform any revision needed to the Toolkit website<sup>14</sup>; these revisions will be developed in collaboration with the EEF's Synthesis Team. Any academic publications arising from this work will be shared with EEF before publication.

### Personnel

Durham core team: Steve Higgins, Berenice Villanueva Aguilera, Emma Dobson, Louise Gascoine, Afroditi Kalambouka, Maria Katsipataki, Jonathan Reardon, Margherita Roviola, Germaine Uwimpuhwe.

Coding and data extraction team: John Brown, Diwakar Basnet, Ryan Gray, Nicole Wilson, Vicky Byrne and Maria Athanasiou.

### Conflicts of interest

There is no conflict of interest in this project, so far as the review team are aware.

### Ethical issues

The use of information and data already in the public domain is usually regarded as of low ethical risk. The project team aim to adhere to the ethical guidelines of the British Educational Research Association<sup>15</sup> and ethical approval was obtained from the Ethics Committee of the School of Education at Durham University.

### Acknowledgements

The review team would like to acknowledge the help and support from the EPPI-Centre at the Institute of Education, UCL, especially James Thomas, Jeff Brunton, Sergio Graciosi and Ian Shemilt.

The ongoing support and enthusiasm of the Synthesis Team at the EEF is a vital aspect of the continuing evolution of the Toolkit and the development of the EEF Education Database: Jon Kay, Mohammad Zaman, Isabel Kempner and Hannah Shackleton.

In addition, the tireless support of the coding team needs to be acknowledged: John Brown, Diwakar Basnet, Ryan Gray, Nicole Wilson, Vicky Byrne and Maria Athanasiou (as well as members of the team who have contributed to earlier stages of the project).

---

<sup>14</sup> <https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit>

<sup>15</sup> Ethical Guidelines for Educational Research, fourth edition (2018) available at: <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018>

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

#### References

- Baker, R., & Jackson, D. (2008). A new approach to outliers in meta-analysis. *Health Care Management Science*, 11(2), 121-131. <https://doi.org/10.1007/s10729-007-9041-8>
- Banks, G. C., Kepes, S., & Banks, K. P. (2012). Publication bias: The antagonist of meta-analytic reviews and effective policymaking. *Educational Evaluation and Policy Analysis*, 34(3), 259-277. <https://doi.org/10.3102/0162373712446144>
- Becker, B. J. (2005). Failsafe N or file-drawer number. In H. R. Rothstein, A. J. Sutton, M. Borenstein (Eds) *Publication bias in meta-analysis: Prevention, assessment and adjustments*, 111-125. London: John Wiley and Sons
- Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research Synthesis Methods*, 1(2), 97-111. <https://doi.org/10.1002/jrsm.12>
- Borenstein M., Hedges L.V., Higgins, J.P.T., Rothstein, H.R. (2009) Subgroup analyses. In: *Introduction to Meta-Analysis*. London: John Wiley & Sons, Ltd, pages 59-86;
- Duval, S., & Tweedie, R. (2000). Trim and fill: a simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, 56(2), 455-463. <https://doi.org/10.1111/j.0006-341X.2000.00455.x>
- Cronbach, L. J., Ambron, S. R., Dornbusch, S. M., Hess, R. O., Hornik, R. C., Phillips, D. C., Walker, D. F. & Weiner, S. S. (1980) *Toward reform of program evaluation: Aims, methods, and institutional arrangements* (San Francisco, CA, Jossey-Bass).
- Elliott, J. H., Synnot, A., Turner, T., Simmonds, M., Akl, E. A., McDonald, S., ... & Pearson, L. (2017). Living systematic review: 1. Introduction—the why, what, when, and how. *Journal of Clinical Epidemiology*, 91, 23-30. <https://doi.org/10.1002/9781119536604.ch4>
- Hedges, L. V. (1984). Estimation of effect size under nonrandom sampling: The effects of censoring studies yielding statistically insignificant mean differences. *Journal of Educational Statistics*, 9(1), 61-85. <https://doi.org/10.3102/10769986009001061>
- Hedges, L. V., Shymansky, J. A., & Woodworth, G. (1989). Modern methods of meta-analysis: A Practical Guide. National Science Teachers Association, Washington, DC (ERIC ED309952: <https://eric.ed.gov/?id=ED309952>)
- Hedges, L., & Olkin, I. (1985). *Statistical models for meta-analysis*. New York: Academic Press.
- Higgins, S. (2018) *Improving Learning: Meta-analysis of Intervention Research in Education* Cambridge: Cambridge University Press.
- Higgins, S., Aguilera, A. B. V., Dobson, E., Gascoine, L., Katsipataki, M., & Rajab, T. (2019). *Education Endowment Foundation evidence database: Protocol and analysis plan*. London: Education Endowment Foundation.
- Higgins, S., Katsipataki, M., Villanueva Aguilera, A.B., Dobson, E., Gascoine, L., Rajab, T., Reardon, J., Stafford, J. & Uwimpuhwe, G. (2022) *The Teaching and Learning Toolkit: Communicating Research*

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

Evidence to Inform Decision-making for Policy and Practice in Education *Review of Education* 10.1  
<http://dx.doi.org/10.1002/rev3.3327>

Higgins, J.P.T., Thompson, S.G., Deeks, J.J. & Altman, D.G. (2003) Measuring inconsistency in meta-analyses. *British Medical Journal*;327:557-560. <https://doi.org/10.1136/bmj.327.7414.557>

Langan, D., Higgins, J. P., Jackson, D., Bowden, J., Veroniki, A. A., Kontopantelis, E., ... & Simmonds, M. (2019). A comparison of heterogeneity variance estimators in simulated random-effects meta-analyses. *Research Synthesis Methods*, 10(1), 83-98. <https://doi.org/10.1002/jrsm.1316>

Lefebvre C, Glanville J, Briscoe S, Featherstone R, Littlewood A, Marshall C, Metzendorf M-I, Noel-Storr A, Paynter R, Rader T, Thomas J, Wieland LS. Chapter 4: Searching for and selecting studies. In: Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). (2022) *Cochrane Handbook for Systematic Reviews of Interventions* version 6.3 (updated February 2022). Available from [www.training.cochrane.org/handbook](http://www.training.cochrane.org/handbook).

Lipsey, M. W. & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks CA, US: Sage

McShane, B. B., Böckenholt, U., & Hansen, K. T. (2016). Adjusting for publication bias in meta-analysis: An evaluation of selection methods and some cautionary notes. *Perspectives on Psychological Science*, 11(5), 730-749. <https://doi.org/10.1177/1745691616662243>

Marks-Anglin, A., & Chen, Y. (2020). A historical review of publication bias. *Research Synthesis Methods*, 11(6), 725-742. <https://doi.org/10.1002/jrsm.1452>

Page, M. J., Sterne, J. A., Higgins, J. P., & Egger, M. (2021). Investigating and dealing with publication bias and other reporting biases in meta-analyses of health research: A review. *Research Synthesis Methods*, 12(2), 248-259. <https://doi.org/10.1002/jrsm.1468>

Schmid, C.H., Stijnen, T. & White, I. (2020) *Handbook of Meta-Analysis*. 1st ed. Chapman; Hall/CRC. <https://doi.org/10.1201/9781315119403>.

Slavin, R., & Smith, D. (2009). The relationship between sample sizes and effect sizes in systematic reviews in education. *Educational Evaluation and Policy Analysis*, 31(4), 500-506. <https://doi.org/10.3102/0162373709352369>

Stansfield, C., Stokes, G., & Thomas, J. (2022). Applying machine classifiers to update searches: Analysis from two case studies. *Research Synthesis Methods*, 13(1), 121-133. <https://doi.org/10.1002/jrsm.1537>

Thomas, J., Noel-Storr, A., Marshall, I., Wallace, B., McDonald, S., Mavergames, C., ... & Pearson, L. (2017) Living systematic reviews: 2. Combining human and machine effort. *Journal of Clinical epidemiology*, 91, 31-37. <https://doi.org/10.1016/j.jclinepi.2017.08.011>

Viechtbauer, W. (2005) Bias and Efficiency of Meta-Analytic Variance Estimators in the Random-Effects Model. *Journal of Educational and Behavioral Statistics* 30 (3): 261–93. <https://doi.org/10.3102/10769986030003261>

## EEF Evidence Database Phase 2 Protocol and Analysis Plan

### Protocol and Analysis Plan

Principal investigator: Professor Steve Higgins

---

Viechtbauer, W. (2007) Accounting for heterogeneity via random-effects models and moderator analyses in meta-analysis. *Zeitschrift für Psychologie/Journal of Psychology*, 215(2), 104-121.

<https://doi.org/10.1027/0044-3409.215.2.104>

Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software*, 36(3), 1-48. [https://cran.r-](https://cran.r-project.org/web/packages/metafor/vignettes/metafor.pdf)

[project.org/web/packages/metafor/vignettes/metafor.pdf](https://cran.r-project.org/web/packages/metafor/vignettes/metafor.pdf)

Wagenmakers, E-J., & Farrell, S. 2004) AIC Model Selection Using Akaike Weights. *Psychonomic Bulletin & Review* 11 (1): 192–96. <https://doi.org/10.3758/BF03206482>

Xiao Z., Kasim, A., Higgins, S.E. (2016) Same Difference? Understanding Variation in the Estimation of Effect Sizes from Educational Trials *International Journal of Educational Research* 77: 1-14

<http://dx.doi.org/10.1016/j.ijer.2016.02.001>

The appendices are available as a separate document from EEF or the research team.