Results From a Phase-2 Exploratory Trial of Fluency and Comprehension Instruction in English Elementary Schools

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UK and England context

• Reading is a global issue: 23% of children fail baseline levels of proficiency restricting their life chances (OECD, 2019)

• UK was ranked 10th out of 38 countries in PISA 2018 assessments of international reading (OECD, 2018). (504/487)

• England context: national tests for 11-year-olds (DfE, 2019).
  • 27% fall below age expected standards
  • ... and 51% of socio-economically disadvantaged.
Reading Fluency & Reading Comprehension

Fluency instruction
Evidence based, to improve reading in schools for students with low literacy levels - widely used in US (Rasinski & Nageldinger, 2016; Wanzek 2016).

Meta-analysis Grade 4-12 students, positive effect sizes of +0.16 for reading fluency and word-reading fluency outcomes (Wanzek et al., 2013; Stevens et al., 2016)

• Reading comprehension interventions are associated with higher effect sizes than fluency interventions on their own (Scammaca et al, 2015)

Comprehension instruction
Evidence based: Developed in NZ
Inference training (Kispal, 2008) & Reciprocal Reading (Palincsar, 1982) widely used.

RCT trial evidence shows RR also successful in England, with positive effect sizes of +0.13-+0.25 (O’Hare et al, 2019; Thurston et al, 2020).
Objectives of the *FliC Intervention, Phase II Randomised Control Trial*

- To establish a Phase 2 exploratory trial to test a Fluency into Comprehension program (FliC):
  - Can it be implemented in English elementary schools?
  - What is the impact on children’s reading ability?
  - Is the program scalable

- This presentation reports the results of the *FliC* program in 12 schools, across four district areas in a high poverty region of North-East England.
Fluency into Comprehension program (FliC)

• Fluency into Comprehension program (FliC) designed to provide instruction for children able to decode but who require additional fluency instruction to participate in a standalone comprehension programme.

• Developed by Fischer Family Trust (Literacy) for use in elementary schools
  • Includes training staff in groups (Lead and delivery staff)
  • Supporting schools through implementation (online)
  • Resources to support implementation

• Dosage: Three 20-minutes sessions weekly over 12 weeks (Session 1 and 2 focus on Fluency and Session 3 on Reciprocal Reading)
Theoretical Framework

For co-operative learning to be present during FliC then social interdependence must be present in the form of:

• **Group accountability** - we all need to work as a group if we are to succeed
• **Individual accountability** - We each need to undertake our own roles well
• **Social Interdependence** - between individuals and the group
• Developed in the United States for schools in high poverty areas
  
  *(Johnson & Johnson, 2012; Johnson, Johnson & Roseth, 2010)*
• **FliC**: The group works together to succeed as they read & understand text. All members have responsibilities for their performance and clear patterns of interaction are defined during FliC.
Figure 1 The Fluency into Comprehension program logic model

**Inputs**
- Schools participate including one designated teacher lead and two delivery staff to deliver the program in every school.
- Teacher training includes: 1.5 days online training sessions, and 0.5 day individual school support session.
- Targeted students participate in study in small groups of up to four.

**Outputs**
- Schools use diagnostic tool to select eligible students.
- School delivery staff plan and deliver the reading fluency into comprehension sessions to groups of up to 4 students.
- Over 12 weeks, 3 sessions (20 minutes each) are delivered weekly in schools.

**Short term Outcomes**
- School staff Reading Fluency and Comprehension knowledge, and instructional skills improve.
- Student reading fluency into comprehension ability improves working cooperatively in small groups.

**Medium term Outcomes**
- Student reads with greater fluency independently.
- Student overall reading improves.
- Student reading comprehension improves.

**Long term Outcomes**
- Student overall reading improves.
- Student reading comprehension improves.

implementation Factors: School staff training attendance; School staff engagement; Fluency into Comprehension delivery; dosage.
Sample

• 12 state funded elementary schools in North-East England took part with up to 16 students (8 from Grade 2 and 8 from Grade 3)

• 186 children aged 7-9 participated of which:
  • 103 Grade 2 students
  • 83 Grade 3 students
Allocation to condition

- Individual randomization to condition was undertaken for 186 students by listing students alphabetically within their year group (Grade 2 or Grade 3) and school (n=12).
- Once the first class of four students from a year group was assigned to condition the other four students were randomized sequentially to condition in Grades 2 and 3 respectively. This methodology was used to ensure even numbers of treatment and control students in each arm of the trial.
- True randomization and no minimization was used
Methodology

• 12 schools participated each with 16 students (8 Grade 2 and 8 Grade 3)
• Treatment group: Four Grade 2 and Grade 3 students in each school received *Fluency into Reading Comprehension intervention*.
  • Implementation was led by trained staff, in timetabled 30 minute sessions over 12 weeks.
• Control group: Four Grade 2 and Grade 3 students in each school continued with business as usual.
Outcome measures

• Used New Group Reading Test (GL Assessment)
  • Standardized, independent measure of reading attainment to measure pre/post test reading attainment
  • Chronbach alpha 0.9 (GL Assessment, 2018)

• Primary Outcome Measure - Overall Reading

• Secondary Outcome Measures - Reading Comprehension
  • Passage Comprehension
  • Sentence Completion
Results: Reading attainment

• Overall Reading: Positive Effect Sizes of +0.26 based on 12-week intervention
• 13% missing data in line with other education trials
• Very positive evaluations from teachers and leaders
• The technique is ready to be tested at greater scale
Scholarly significance of the research

• This is the first study to show that the fluency into comprehension/cooperative learning technique used in FLiC can work with positive effects in a randomised trial.

• A further significant finding is that this could be a low cost and effective technique for schools from high poverty areas to improve the reading skills of children with low literacy skills.
Conclusion

• The pedagogy should now be researched in a Phase 3 trial

• Further work is now required to explore the use of the pedagogy in more detail, and to determine whether they can be generalised to a larger population of students.
For further information:

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