



LEARNING DIFFICULTIES AUSTRALIA

2023 RTI Conference Handouts

Saturday 28th Oct

Session 4 - What the Research Says

by Julie Sonnemann

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Julie Sonnemann

Director Education, Impact Economics Consulting
(Former) Deputy Program Director, Grattan Institute

Bio:

- Background in education research and system design
- Lead author of Grattan Institute reports on small-group tuition and response to intervention models
- Consulting to clients such as AERO on Multi-tiered support systems


Passionate about providing high quality learning for all students



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Discussion today

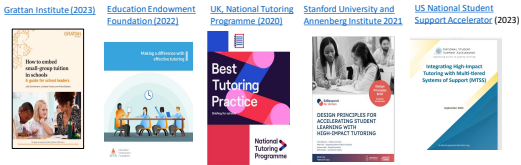
- Key design features of effective small-group tutoring
- Common challenges
- Cost-effectiveness considerations
- Links to good resources



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Research insights: guides and reviews

Guides for schools



Key literature reviews

- Nickow, A., Oreopoulos, P. and Quan, V. (2020) The Impressive Effects of Tutoring on Pre-K-12 Learning: A Systematic Review and Meta-Analysis
- Robinson, C. D. and Leeb, S. (2021). "High-Impact Tutoring: State of the Research and Priorities for Future Learning", Annenberg Institute Brown University, EdWorkingPaper, pp. 21–384.
- Education Endowment Foundation (2021). Small-group tuition interventions, evidenceforlearning.org.au
- White, S., Groom-Thomas, L. and Leeb, S. (2023). A systematic review of research on tutoring implementation, Annenberg Institute Brown University



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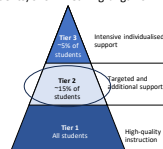
Small-group tutoring works...but...

Strong evidence that small-group tuition has positive effects for student learning and well-being

- Estimated additional 4+ months on student learning (UK Education Endowment Foundation)
- A recent meta-analysis found an additional 3 to 15+ months on learning (Nickow et al 2020)
- Even studies of larger tutoring programs (500 to 7000 students) show meaningful gains

However not **all** tutoring is high-impact

- Evidence base shows specific design features matter
- Embedding within RTI model is key



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Quality instruction is paramount

*The quality of small-group tuition will only be as good as the **quality of the instruction** provided*

"Quality of teaching is likely more important in achieving positive impacts than getting the 'perfect' design e.g., a certain group size"
(EEF 2021)



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Design features: intensity of tutoring


How frequent should tutoring sessions be?

One meta-analysis found that high-impact tutoring was **20 times more effective** than low-dosage tutoring in math.

In reading, high-impact tutoring was **15 times more effective** than low-dosage tutoring.

Studies have found little evidence that once-a-week tutoring is sufficient to generate meaningful effects.

Source: Annenberg Institute 2021




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Intensity of tutoring

How frequent should tutoring sessions be?

- High frequency regular sessions e.g. up to 1 hour at least 3 times a week, ideally up to 5 times a week
- Primary students e.g. 20 min x 5 times a week

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022), White et al (2023)




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Intensity of tutoring

How long should tutoring go for?

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022), White et al (2023)




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Intensity of tutoring

How long should tutoring go for?

- Most effective tutoring programs last for at least 6-10 weeks, some programs up to 20 weeks or a year




Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022), White et al (2023)

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Intensity of tutoring

What is the ideal group size?




Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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Intensity of tutoring

What is the ideal group size?

- The smaller the group, the better
- Groups more than six tend to be less effective
- Groups of 3 tend to provide value for money while ensuring quality
- Grouping students by skill level can make for a more effective tutoring lesson, but not always




Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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Instruction and curriculum

What should instruction and curriculum entail?



Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)


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Instruction and curriculum

What should instruction and curriculum entail?

- Monitoring student progress, frequent (informal) assessments
- Target student needs, data used to inform tutoring sessions
- Good collaboration among tutors, teachers, leaders on student learning needs
- Strong alignment with classroom content, strong curriculum materials, time to work together

"Tutoring programs that support data use and on-going informal assessments allow tutors to more effectively tailor their instruction for individual students" Annenberg Institute 2021




Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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Who should tutor

What qualifications should tutors have?



Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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Who should tutor

What qualifications should tutors have?

- Teachers get the best results as tutors
- But teaching assistants and pre-service teachers can get good results IF they receive adequate training, support, supervision
- For teaching assistants and other non-teachers, structured learning materials and sequenced programs are beneficial, aligned to classroom content

On paraprofessionals, one of the most promising US studies used AmeriCorps fellows to conduct daily 2:1 tutoring sessions with low-performing students in 12 Chicago Public Schools. In addition to improved math test scores, students' math grades improved by 0.58- GPA points, moving students from a C- average to a C+. Students were 50% less likely to fail their math course and 28% less likely to fail a non-math course (AnnenbergInstitute 2021)

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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When to do tutoring

When should tutoring take place?

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When to do tutoring

When should tutoring take place?

- Tutoring has better results during the school day, rather than outside school hours and off-site
- Ensure does not substitute whole class instruction
- Avoid conflicts with same subject in which tutoring is provided, rotate sessions

Schools should give careful consideration when timetabling tutoring sessions; for example ensuring that pupils do not miss core English and maths lessons, or any specialist support required by pupils with SEND

UK NTP Best Practice Guide 2020

One review found **double the impact** of tutoring during school day versus after-school

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)

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Online tutoring

Can tutoring be done online?

- Emerging evidence that online tutoring gets good results, including in the home setting
- Online tuition can overcome geographic distance to better match tutors, opening up the pool of tutors available
- Digital learning tools and online assessments can help tutors better assess student needs
- Still challenges with access to technology, internet connectivity, home environments hard to study

"Smith Family's online Catch-Up Learning pilot" 2021 evaluation found significant improvements in students' literacy and numeracy"

"Online catch-up tuition is showing positive signs in randomised control studies in Spain and Italy, and a pilot study in the UK"

"Amira", an AI-powered intelligent tutor focused on accelerating reading mastery one-on-one for primary students, has shown impact on-par or better than human tutors in controlled randomised studies"

Grattan Institute 2023

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022)



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Tutor – student relationship

What can be done to improve student-tutor relationship?

- Consistent tutors
- Tutors learn about student interests, strengths, life contexts and then apply knowledge
- See recent [EEF study](#) tested giving tutors and pupils time to find common ground improved attendance (it did!)
- Be supportive, safe space, positive tone, exploring the impact of age, race, class and other social identities
- Ongoing communication with parents, teachers and others in support network
- Tutoring in small groups and pairs can reduce stigma

"Many tutoring interventions keep **one tutor** with a set student or group of students for the duration of the program," Annenberg Institute 2021

"How the tutoring opportunity is explained to pupils and communicated more widely to families is key" UK NTP Guide 2020

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022), White et al (2023)



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School leadership

What can school leaders do?

- School leader support is essential: funding, space, ensuring staff have the right skills and collaboration

A review in the US of COVID tutoring programs found "buy-in from principals and other school-level staff **goes foundational** for tutoring success"

Annenberg Institute 2021-22

"School leaders can:

- Lead with relationships among teachers, students, parents
- Ensure tutoring is implemented with fidelity to design features
- Dedicate a team to focus on continual improvement
- Ensure that staff have the right support, knowledge and skills"

Annenberg Institute 2023

Source: Nickow et al (2020), Evidence for Learning (2021), UK National Tutoring Programme Guide (2020), UK Education Endowment Fund Guide (2022), White et al (2023)




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Common challenges in schools

Evaluations of the 2020-22 COVID tutoring programs in Australia highlight the following issues:

- Finding eligible tutors
- Finding physical space to deliver tuition
- Finding time for teacher - tutor collaboration
- Students missing out on class content if tutoring is delivered during class time
- Work covered in the tutoring sessions not always aligning to the students' classwork

Source: common themes of public reports from NSW Department of Education (2022b), NSW Department of Education (2022c), the Victorian Department of Education (2022b), and The Smith Family pilot (2021)



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Cost-effectiveness considerations

Type of tutor

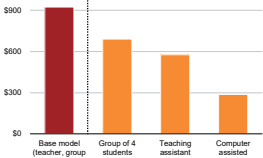
Size of group

Amount of tutoring

Online tutoring


Computer assisted

Different tutoring approaches can be more cost-effective



Tutoring Approach	Cost per student (\$)
Base model (teacher, group of 3 students)	~900
Group of 4 students	~650
Teaching assistant	~550
Computer assisted	~300

Source: Cost-effectiveness factors are discussed in Sonnenschein and Hunter (2022), How to Embed Small-group Tutoring, Grattan Institute report, as well as Robinson and Loeb (2023). Chart is from Sonnenschein and Hunter (2022), Grattan Institute report. Chart notes: The underlying assumption for all scenarios is a 12-week tutoring program of 30-minute sessions of four times a week, for two subjects (total 24 weeks). The base model assumes a teacher as tutor, with groups of three students, 15 hours of tutor training, and \$200 in resources per tutor. The second scenario assumes tutoring in groups of four, 15 hours of tutor training and \$100 in resources per tutor. The third scenario assumes a teaching assistant as tutor, with groups of four, 24 hours of tutor training, and \$200 in resources per tutor. The fourth scenario assumes a teaching assistant as tutor but with tutoring primarily delivered by a computer-assisted 'intelligent tutoring program' (for discussion see Robinson and Loeb (2023)), in groups of six (consistent with Chambers et al (2013)), with 30 hours of tutor training, and \$200 in resources per tutor. In this scenario, there is an additional sub-cost for purchasing the software, estimated at \$20 per student, although costs per student would vary by program and scale of delivery.




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Thank you

Guides for schools


[Grattan Institute \(2023\)](#)




[Education Endowment Foundation \(2021\)](#)




[UK, National Tutoring Programme \(2020\)](#)



[Stanford University and Annenberg Institute 2021](#)




[US National Student Support Accelerator \(2023\)](#)



Key literature reviews

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