Teachers conducting research

Educational neuroscience benefits from educators’ research in the classroom

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With an ever-increasing desire for evidence in the classroom, more and more teachers are conducting their own research. This enables them to try out new ideas, to share results with others, and to contribute to the growing evidence-base around teaching and learning.

Much of the research into educational practice is carried out by researchers who are following a specific line of enquiry relating to their own interests. This often involves taking an idea, which may have arisen through previous neuroscience or cognitive psychology research, and working with teachers to test it out in the classroom. Teachers are increasingly having an important role in this kind of lab-to-classroom research, but there are also examples of teachers taking the lead in running their own studies.

Rather than waiting for results of trials from large-scale studies run by academics, teachers are following their own interests, and trying out ideas in their classrooms, to see for themselves what works. While many teachers have been doing this for a long time already, there is an increase in the formalisation of this procedure. Teachers can find support from organisations or individuals who provide advice on study design.

An example of where this support might be particularly helpful relates to the use of appropriate control groups for a study. Previously, teachers may have tried something new with all students and assessed whether or not improvement was seen. But without comparison to a control group, it is hard to determine whether changes are related to the new teaching approach, as opposed to normal development with age and time. With external support, teachers can be confident that they are adopting a good design.

User-friendly software is also available, to allow teachers to investigate the statistical significance of the improvements seen. Evaluation of results statistically helps teachers to see if any improvements are meaningful. With the help of software, teachers do not need to be experts in statistics to interpret their findings.

There are even opportunities for publication in a teacher-facing peer-reviewed journal, which allows teachers to share their findings with fellow educators, and show the fruits of their research.

More classroom research benefits the whole educational research community

Educators who engage in research in this manner will expand the evidence-base, increasing our understanding of teaching and learning practices. While one small-scale research project on its
own may not tell us about what works in every classroom, it is another piece of the puzzle. There is increasing appetite from teachers and researchers for projects on this scale that can be replicated across many classrooms in different schools. The bringing together of all of these projects may lead to some strong conclusions about different educational tools.

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This engagement with research is voluntary, which is important as teachers may not have an interest in research participation, or may not have the time. But what matters is that teachers have the opportunity to conduct research on their personal interests, within their own time frame. They will not be beholden to an external researcher.

The results of these studies may be more convincing to the teachers, as they have seen the evidence for themselves, and tests of effectiveness have not been carried out by unfamiliar researchers who may inadvertently bias the results simply through their presence in school. Nonetheless, teachers will bring biases, too, for example in choosing to examine a tool they think is likely to be successful, and thus potentially implementing it with greater enthusiasm than their normal classroom practice.

Another potential risk comes from the fact that teachers are not subject to ethics approval for trying ideas in their classrooms. While researchers put each study design through strict ethical clearance procedures, it is likely that most schools do not have such a process in place. If teachers continue to show an interest in running their own research, this will have to be something that schools address to ensure that parents consent and that each study follows recommended ethical guidelines.

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Neuroscience- or psychology-informed teacher-led research is an encouraging demonstration of the rise of educational neuroscience, and a desire to better understand the science behind learning. While it has been argued that neuroscience and education are too far removed to influence each other, this approach highlights that educational neuroscience is not simply about neuroscience research attempting to directly inform practice. Research conducted by teachers may indeed be based on ideas from neuroscience or psychology, but exciting findings from teacher research may in turn lead to new directions for research in neuroscience or psychology.

There is not just one way of conducting research. Educational neuroscience is a broad discipline, and any research that furthers our scientific understanding of teaching and learning is welcomed by the community.

Benefits of teacher-led research:
• Teachers contribute to the evidence-base around their practice
• Many small-scale projects can be evaluated together
• The setting of the research is real school classrooms
• Psychology and neuroscience research may take new directions

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