Journal of Technology & Teacher Education

# Research-Informed Teaching in a Global Pandemic: "Opening Up" Schools to Research

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Abstract: In the last decade, teacher research has grown in importance across the three i's of the teacher education continuum: initial, induction and in-service. This has been brought into even starker relief with the global spread of COVID-19. Now, perhaps more than ever, teachers need the perspective and support of research-led practice, particularly in how to effectively use Internet technologies to mediate and enhance learning, teaching and assessment online, and new blended modalities for education that must be physically distant. The aim of this paper is to present a number of professional development, open educational systems which exist or are currently being developed to support teachers internationally, to engage with, use and do

research. Exemplification of the opening up of research to schools and teachers is provided in the chapter through reference to the European Union-funded project, BRIST, which is developing technology to coordinate and support teacher-research at a European level.

Keywords: teacher-research, digital education, transformative, professional development

## Introduction

The current pandemic, COVID-19, has forced education in general to move online, underscoring the urgency of a research-informed and principled approach to remote education. Parents, teachers and teacher educators are currently exploring and researching alternative ways of learning online, including synchronous and asynchronous modalities.

Evidence-based practice in teacher education is now increasingly identified as a key priority in the improvement of educational standards and systems (Council, 2011; OECD, 2007; Tatto & Furlong, 2015). Citing Biesta (2007), McKenney & Schunn (2018) remind us that when we do *research on education*, we are also invariably doing *research for education*, reflecting the importance of purpose and empirical relevance to practitioners in conceptualising and enacting educational change and innovation. Indeed Sahlberg and Hasak (2016) have noted the importance of the different types of research in education: the 'small r' data extant in classrooms and schools, as a critical complement to what are typically considered the 'Big R' data that are gathered and published through traditional academic research, large scale studies and surveys (Sahlberg & Hasak, 2016). Currently, there is a dislocation between the two, with questions recently raised about the efficacy of research, and its relevance to education at all (Torrance, 2017; Wiliam, 2019).

Projects which aim to reduce the gap between research and practice will - it is hoped - enhance the professional profile and quality of teaching and education (Hammersley, 1993), and raise the relevance of educational research in general. Considering their accessibility and availability, open educational resources (OER) represent a valued opportunity in this context (Cronin & MacLaren, 2018; Hegarty 2015; Hylén 2006).

There is international evidence of formative teacher-research become more established and widespread, including through bespoke OERs for teacher researchers (Baas, Admiraal, & van den Berg, 2019) and increased possibilities for pre-service and in-service teacher professional development (Misra 2014; Murphy & Wolfenden 2013).

This paper presents a number of professional development open educational systems developed to support in-service teachers as they navigate the research domain and share their research. We highlight some of the platforms, and their signature design features, which can facilitate collaborative research and learning among teachers, schools and informal educational providers. The chapter concentrates particularly on the development of the European Funded Erasmus+ BRIST project.

## Innovation

Advancing knowledge by unlocking and sharing research is a benefit for all. Currently, the Open Access 2020 (OA2020) initiative highlights the growing acknowledgement that research should and must be made generally available to the global community for the betterment of society and the benefit of all citizens. An example of this in the current, global crisis, is how leading journals (e.g. The Lancet) are making their research freely and widely available, in order to help solve the pandemic by expediting the development of treatments for COVID-19.

In the last decade a number of high-potential blended and virtual systems for open, online educational research platforms have emerged, which are being deployed to enhance the accessibility, shareability and usability of educational research, particularly among teachers and schools. In 2015, the Teachers' Research Exchange (T-REX) (http://t-rex.ie) portal was introduced, which enables both in-service and pre-service teachers, and other educational

professionals in Ireland to come together to interact, collaborate, and learn from one another (McGann, Ryan, McMahon, & Hall, 2020). To better support professional judgement and expertise in classrooms and schools, the UK-based, international MESHGuides (Mapping Educational Specialist knowHow) https://www.meshguides.org, platform has been developed. It provides teachers and educators with access to highly-usable, informative summaries and exemplars of research-based specialist knowledge (Jones, Procter and Younie, 2015). In the European context, the Open Schools for Open Societies (OSOS) https://www.openschools.eu portal enables schools and teachers to share research-based innovations, thus helping potentially to diffuse and embed educational change and innovation. Technologies such as those provided by OSOS, T-REX and MESHGuides, Table 1, are supporting school teachers, educational leaders and researchers to jointly engage with and in research.

Table 1. Overview of teacher-researcher supportive platforms

| | |
|---|---|
| **Building a Research Infrastructure for School Teachers (BRIST) project** | https://www.4teacheresearch.org/ |
| *An online research infrastructure designed in collaboration with teachers, which supports teachers' lifelong learning and professional practice through evidence-informed research and practice throughout their professional careers.* | |
| **MESHGuides** | http://www.meshguides.org/ |
| *MESHGuides is an online teacher/researcher led, international, knowledge management system for teachers. MESHGuides are research summaries, updated periodically, written for teachers (and parents/carers), linked to the research giving rise to practical advice.* | |
| **Open Schools for Open Societies (OSOS)** | https://www.openschools.eu |

| | |
|---|---|
| *The Open School for Open Societies project (OSOS) provides innovative ways to explore the world, to inspire, to engage and to connect. It also supports the development of innovative and creative projects and other education activities. The Open Schools for Open Societies project has created a core network of a thousand schools that together form a hundred hubs in twelve countries.* | |
| **Teachers' Research Exchange (T-REX)** | http://t-rex.ie |
| *T-REX is an online social network for Irish teachers and other educational researchers, where teachers can connect with others with similar interests, discuss research, and collaborate on projects.* | |

The enforced wholesale move to online education and a need for teachers to establish pedagogically sound ways of using Internet technology, entails that they need online support to benefit from collaborative, shared educational expertise. The EU Erasmus+ project *BRIST: Building a Research Infrastructure for School Teachers* project is achieving this, through a professional platform utilizing mobile technologies and incorporating related processes and structures, to support teachers to engage with, use and carry out research (www.4teacheresearch.org/), Figure 1. The international reach and remit of BRIST enhances the work of T-REX, OSOS and MESHGuides for example and the comparative differences across the platforms are displayed in Table 1. BRIST is designed and will be developed through a series of 32 discrete activities which lie within 6 key outputs such as a scoping study, the development of a mobile app, in-service teacher training programme, multi-media scenario and case studies, Figure 2.

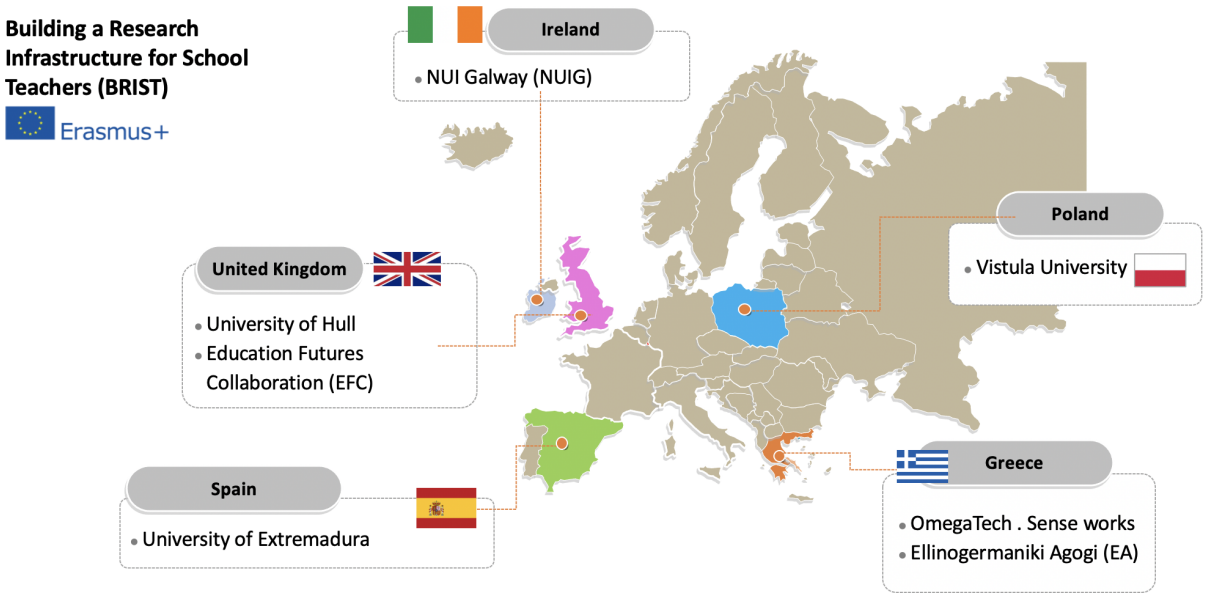


Figure 1. BRIST project partners

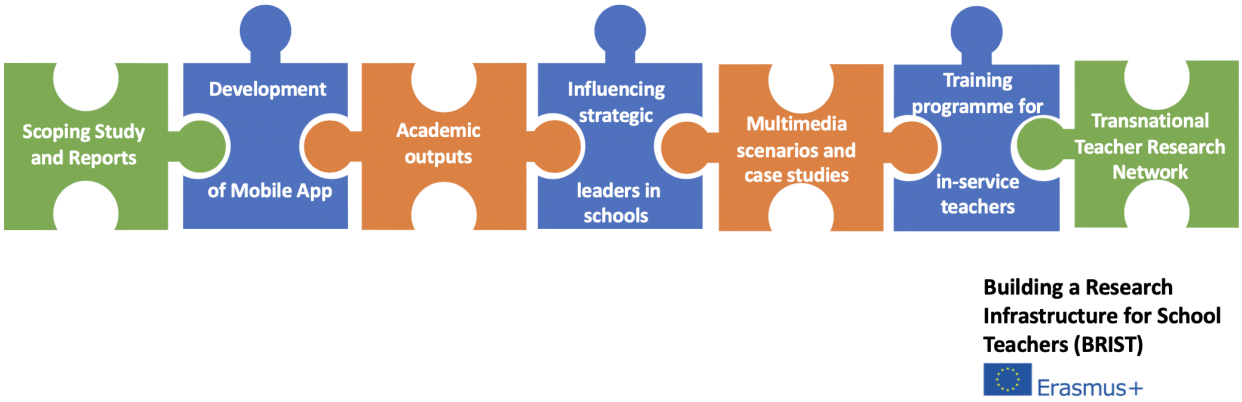


Figure 2. BRIST project outputs

## Results

The key objective of BRIST, is to develop teachers into teacher researchers and evidence informed practitioners through a supported infrastructure. BRIST is developing processes and resources which themselves are evidenced-based, thereby giving back agency to teachers who will need to make use of and should be driving forward research in schools. The development of a network and supporting infrastructure for teacher researchers reduces the gap between research

and individual teaching practice, thereby supporting teachers' agency to actively utilize research in schools. The BRIST project has developed an initial set of themes, derived from a systematic literature review (in preparation), which highlights the importance of certain factors influencing the ability of teachers to engage in research. These emergent themes can be seen in Figure 3.

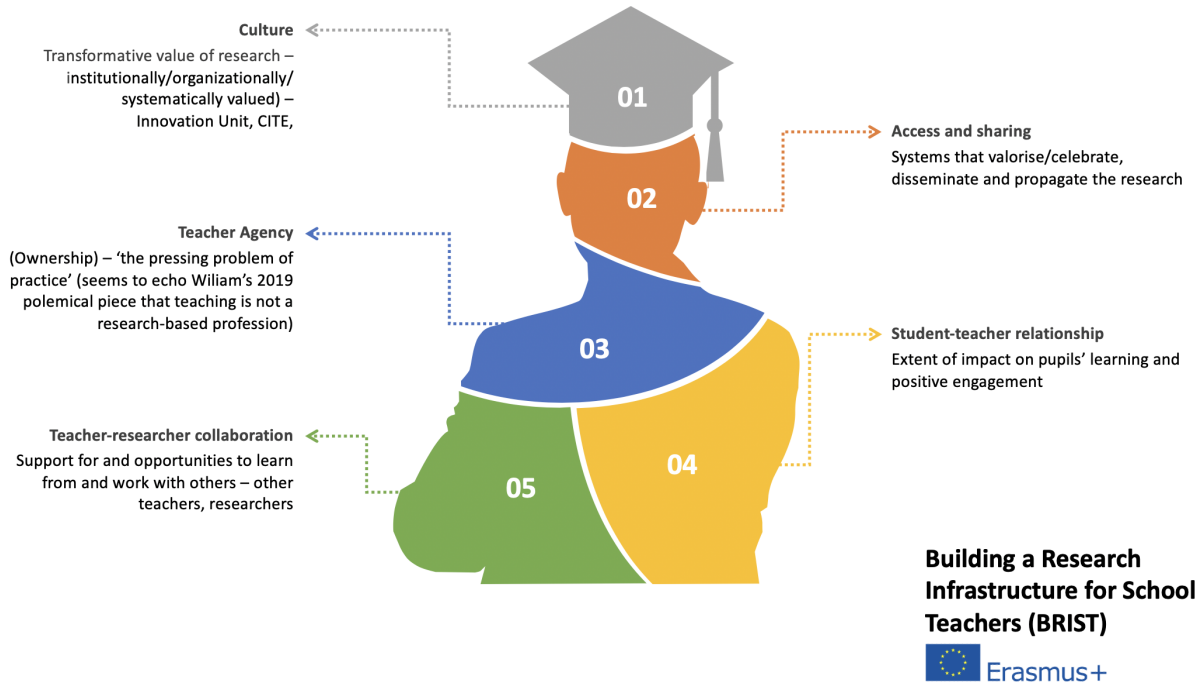


Figure 3. BRIST SLR emergent themes.

Perhaps the key theme to emerge is that of culture and the requirement for research to be valued by the school in a meaningful way. Linked to this is the notion of Teacher Agency where collegiality within the research process is not only needed, but central to the development of teachers' identity as a researcher. The theme of teacher-research collaboration challenges the notion that in education research situations, teachers are commonly viewed as passive participants (Cowie et al., 2010). Access and sharing are also core to influencing the ability of teachers to engage in research, with necessary infrastructures in place. Within the theme of

student-teacher relationships, the importance of research relevant to student learning has emerged, with teachers being driven by potential positive effects on pupils' learning.

In the current pandemic circumstance, initiatives such as BRIST harness the power of digital technology to provide both usable 'bytesize' research content for teachers, but more importantly, enable participative and interactive communities to form so teachers and researchers can more easily carry out, share, access, utilize and benefit from evidence-informed research and innovation. in their practice. The design of a digital learning environment for research, and within this supporting the role of the teacher as a researcher in the current era, set amid the significant impact of technology on educational research and teaching today, is a primary challenge for the BRIST project. The project team are currently finalizing a stakeholder engagement process to support the findings of the SLR in identifying gaps in terms of the design of coordinated infrastructures to support teachers engaging with and using research.

## Implications

Digital professional platforms in education are set to attract even more importance now given the wholesale disruption to learning and teaching as a result of the COVID-19 pandemic and this chapter highlights two important implications. The first is the use of OER research platforms. According to the 2012 OER Paris Declaration, OER is described as "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions" (Pawlowski & Hoel, 2012). The established blended and virtual systems for open, online educational research, introduced earlier such OSOS, T-REX and MESHGuides, are deployed to facilitate collaborative research with

formal and informal educational providers. OER benefits teachers as it is accessible, affordable, flexible, available and the intellectual capital is available on the platform for reuse. The sharing of knowledge and unlocking information benefits all. The potential benefits of open education and OER is being facilitated in the BRIST project which involves a wide variety of key stakeholders including teachers, educational researchers, school leaders, teacher educators, pre-service teachers, local, regional national policy makers, as well as international organisations, charities and institutions interested in translational research.

The second implication is the necessity for further research on how we can design technology supported OER infrastructures, to promote and support translational research in education and create an ethos of sustainable and valued research (Penuel, 2019). The BRIST team have identified a number of signature design features, which can help teachers to make effective use of research in their practice. Three design features highlighted are described in Table 2.

Table 2. Overview of BRIST design features

| Design Feature | Example/Reference |
|---|---|
| (1) providing teachers with research-informed practice in attractive, digestible, and usable, bytesize formats | http://www.meshguides.org/<br>http://t-rex.ie |
| (2) innovative, accessible ways to share expertise, (including beyond traditional academic paywalls) | www.OA2020.org;<br>Samberg, Schneider, Taylor & Wolfe (2018) |
| (3) leveraging the potential of technology to connect teachers and researchers in interactive, collaborative online research communities | OECD (2000); Schlager & Fusco (2003); Barab, MaKinster, Moore & Cunningham (2001) |

## Future Research

In order to sustain educational innovation, systematic multi-stakeholder, multi-level partnerships are required in an inclusive manner which involves everyone needed to make the change happen, and in a context that supports them to achieve it. The BRIST project is being implemented using a Design Based Research (DBR) approach, guiding all phases of the project, including the collection of evidence to measure the impact on participants, participating organisations and other stakeholders. DBR is ideally suited to this project because of the principled, participatory, systematic approach which engages the diverse and dynamic variables that characterise universities, schools and classrooms.

OERs and teacher-research platforms are particularly important in our rapidly developing world where the current need to be more responsive in the way we develop pedagogies to engage and effectively teach students in schools is evolving. Furthermore, such infrastructure and tools position us to capitalize on opportunities that may be emerging to use learning technology in ways that, although socially distant, are close to the needs of teachers in the currently challenging and much-altered practices of education. The impacts and benefits of the project will be realized through the various dissemination channels and specifically will amount to the professionalisation of teaching through the development of teachers as researcher producers and evidence informed practitioners, thereby driving forward research in schools.

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