**MESH: addressing the challenges of 21st century knowledge management**

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'Education reform is top of the agenda of almost every country in the world.  Yet despite massive increases in spending and ambitious attempts at reform, the performance of many school systems has barely improved in decades' (Barber and Mourshed, 2007, p. 2). Barber and Mourshed's work found there was no direct link between the amount of funding and the quality of teaching.

This paper addresses the problem of how the quality of teaching might be improved through improving the research and evidence base underpinning educational practice (Cochrane-Smith & Zeichner, 2005; Davies, Nutley & Smith, 2000; Hammersley, 2002).The example of a Spelling MESH Guide is used to demonstrate how using digital technologies can be used  to facilitate teachers' access to a research informed professional knowledge base via smart phones/tablets. The Guide was developed by Professor Colin Harrison with Professor Greg Brooks and a network of schools. That research provides a strong foundation for practice is rarely if ever acknowledged in the discourse about school and system improvement in England.  The systematic review system managed by the Campbell Collaboration provides one means of building, testing and sharing knowledge worldwide and synthesising research to make it accessible to practitioners. However educational researchers have a key  role in making sure their research papers contain information about their methodology so that they can be included in reviews (Newman, Elbourne and Leask, 2004).

This lack of research based professional knowledge on subject specialist issues is further compounded by the fact that research published in journals is not generally designed around questions teachers want answered. In short, the knowledge that is produced and the management of it within the education sector are woefully lacking systemic organisation and coherence. If teacher quality, rather than level of funding, is the most critical factor in improving educational outcomes, then why is so little attention drawn to the knowledge and evidence base available to support teachers in improving the quality of their professional knowledge?

The authors argue that in the twenty-first century, through the use of digital technologies, the research and evidence base underpinning educational practice can be developed with and disseminated to all teachers. However, the knowledge base is not static. This paper outlines opportunities for using existing low cost interlinked national and international e-infrastructures to support knowledge sharing and building and updating, through MESH  (Mobilising, Managing and Mapping Educational Specialist knowhow) (Leask, Rafferty and Younie, 2013; Younie & Leask 2013).