Educational Psychology and the Dissemination of Evidence to Professional Practice

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The purpose of this reflective practice paper is twofold: firstly, to review the concepts of evidence-based practice (EBP) and practice-based evidence (PBE) within the discipline of educational psychology and, secondly, to consider how research evidence can be effectively disseminated to inform educational psychologists' (EPs') professional practice. The unique contribution that EPs can make to the evidence base is described before exploring the extent to which EPs' general practice is based on the best available scientific evidence. Finally, a dissemination plan is outlined that includes a discussion regarding the critical role of Implementation Science (Blase et al., 2012). The paper concludes that, although sparse, the existing literature suggests EPs are not basing their practice on well-evidenced techniques. Also, effective dissemination must include Implementation Science if sustainable changes are to be made at an organisational level.

Keywords: educational psychology, evidence-based practice (EBP), practice-based evidence (PBE), dissemination, implementation science

Introduction

The authors conceptualised this paper when considering the quality of their published research within the field of speech, language and communication needs (SLCN) and how best to disseminate it. Their first publication is a systematic literature review (SLR) of school-based, mainstream, oral language interventions for key stage 1 children (see Sedgwick & Stothard, 2018). Their second publication is an empirical study exploring educational psychologists' (EPs') knowledge and practices regarding SLCN (see Sedgwick & Stothard, 2019). These publications will be referred to, where appropriate, to provide illustrative examples.

Evidence-Based Practice and Practice Based-Evidence Evidence-Based Practice (EBP)

EBP originated in the medical sector and is defined by Sackett et al. (1996) as "the conscientious, explicit and judicious use of current best practice evidence in making decisions about the care of individual patients" (p. 71). Within this context, EBP is underpinned by a research hierarchy, meaning the chosen research design determines the quality of the research or "best evidence". Table 1 shows a hierarchy of evidence developed by the Scottish Intercollegiate Guidelines Network (2015) and cited by Boyle and Kelly (2017, p. 33), which gives the highest weighting to designs such as systematic reviews, the meta-analysis of randomised control trials (RCTs) and well-designed RCTs. Such designs maximise internal validity allowing for causal inferences. There-

fore, according to the hierarchy, qualitative research is considered to be an inferior form of evidence. By applying the research hierarchy to the authors' work, their first publication would be regarded as higher quality evidence compared to their second. This is because the former is a systematic review of experimental studies and the latter, of qualitative design.

Practice-Based Evidence (PBE)

In contrast, PBE champions the trialling of a range of research designs in natural settings with a view to building a rich and inclusive picture from which the evidence base can be drawn (Boyle & Kelly, 2017). This involves using any number of the research designs outlined in the hierarchy of evidence without focusing on a "gold standard". This means that PBE does not favour one research design over another and, therefore, recognises that qualitative, small-scale studies are particularly useful when trying to gain an understanding of how and why certain behaviours and situations occur. Furthermore, this could lead to the development of theory, which could inform further research and practice (Aveline & Shapiro, 1995).

The authors' second publication is a small-scale qualitative survey and is, therefore, an example of PBE. In the absence of a qualitative hierarchy to judge the methodological quality of the study, they applied Woods et al.'s (2011) review framework for qualitative evaluation/investigation research. This framework is one of several that provide researchers with a robust structure for the assessment of qual-

Table 1

Hierarchy of "Levels" of Evidence

1st	High-quality meta-analyses, systematic reviews of RCTs or RCTs with a very low risk of bias.
2nd	Well-constructed meta-analysis, systematic reviews of RCTs with a low risk of bias.
3rd	Meta-analysis, systematic reviews or RCTs with a high risk of bias.
4th	High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.
5th	Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.
6th	Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.
7th	Non-analytic studies (e.g., case reports, case series)
8th	Expert opinion.

itative studies and includes the following criteria: appropriateness of the research design; clear sampling rationale; well-executed data collection; analysis close to the data; evidence of explicit reflexivity; comprehensiveness of documentation; negative case analysis; evidence of researcher-participant negotiation of meaning; emergent theory related to the research question(s); valid and transferable conclusions; and evidence of attention to ethics.

An Overview of the Concepts of EBP and PBE in Educational Psychology

"EBP in psychology is the integration of the best available research with clinical expertise in the context of patient characteristics, culture and preferences" (American Psychological Association, 2006, p. 273). In the United Kingdom (UK), EPs are required to use EBP as this is a professional standard outlined by the Health Care Professions Council (HCPC) (2015). However, despite this directive, within the educational psychology profession, there have been criticisms of the research hierarchy as a measure of what constitutes high-quality research because the choice of research design should be dependent on the purpose of the study (Frederickson, 2002; Petticrew & Roberts, 2003). For example, RCTs and other experimental designs are only appropriate when trying

to understand the general effectiveness of a particular intervention because they have a scientific emphasis on measuring impact via quantitative outcomes. RCTs, however, are based on large, homogenous sample groups, which are difficult to find within an educational setting and, by controlling variables, ignore individual differences (Reason & Woods, 2002) and the context in which the intervention takes place (Boyle, 2012; Burden, 2015). Furthermore, experimental designs do not canvas stakeholders' perspectives, opinions and values, an understanding of which can be crucial to the success or failure of a planned-for intervention (Spencer et al., 2012). Consequently, EPs may see a more significant benefit in qualitative research and case study designs, which provide contextual, in-depth and holistic views of a specific phenomenon (van Daal, 2015).

Integrating service-level parameters and practitioner expertise with the best available evidence drawn from rigorous research studies acknowledges the importance of individual differences, context and stakeholders' views (Barkham & Margison, 2007). This, coupled with the recognition that EPs make an active and distinctive contribution to the knowledge base (Birch et al., 2015), lends itself to PBE. EPs are well positioned to trial innovative techniques with the aim of building a practitioner-led evidence base because it is essential that EPs do not assume that an intervention is ineffective just because there is a lack of evidence to support it (American Psychological Association, 2006). Furthermore, analysing data from single cases situated in complex settings, using rigorous processes, may result in generalisable knowledge of effective interventions (Miller & Frederickson, 2006). In summary, practising EPs are well placed to take a central role in the research and development of school-based interventions from a PBE perspective, which could inform local and national policy (Gulliford, 2015; Hempenstall, 2014).

A focus group of EPs employed in the UK has reported that much of their work lacks scientific rigour because situational and improvised methods direct them as opposed to peer-reviewed research (Burnham, 2013). This may be because EPs feel they do not have the necessary skills to critically analyse research studies, whether they are based on EBP or PBE (Fox, 2003), which, if true, is worrying because rigorous, scientific thinking is required to ensure EPs do not adopt pseudoscientific practices (Lilienfeld et al., 2012).

The training route for educational psychologists in England, Wales and Northern Ireland changed in 2006 from the one-year Master's Degree to the three-year Professional Doctorate. Since then, one could assume that EP training programmes have had more opportunity to develop trainees' knowledge and understanding of research methods. Even so, Reynolds (2011) has urged EPs to develop further the skills necessary to review and critique research papers within their field. He states that "just because a paper is published in a peer-reviewed journal does not mean the science is accurate

or necessarily strong" (p. 5). This point is supported by the authors' first publication, where only 24 per cent of studies scrutinised for the SLR were considered to be of high quality. Furthermore, practitioners often favour well-established, familiar programmes with low or "indicative" evidence over the interventions with a more robust evidence base, suggesting that good marketing campaigns may take precedence over a secure evidence base (Fox, 2003).

In addition to issues relating to the quality of available research and EPs' ability to evaluate it critically, EPs may also feel they do not have the time to keep up to date with newly published studies (Dunsmuir et al., 2009). Although little is known about the extent to which EPs keep abreast of new research findings and developments, in her unpublished doctoral thesis, Inoue (2016) has reported that the EPs in her survey most commonly read non-peer-reviewed articles and letters. This suggests when EPs do make time to read publications, they may not be accessing high-quality research, possibly because they cannot access research databases that charge.

Furthermore, Fox (2011) has cautioned against "myside biases" (p. 329): the idea that unfounded personal beliefs may affect how one cognitively processes information, which may influence decision-making when choosing programmes or judging research quality. The authors' second publication may suggest that such biases impact on EPs' practice, leading to inconsistencies and misconceptions within the profession. This emphasises the need for EPs to base their practice on robust evidence, whether generated from EBP or PBE, and it is, therefore, critical that the available research, whether quantitative or qualitative and regardless of design, is of sufficiently high quality.

In summary, although sparse, the existing literature suggests that EPs are not basing their general practices on well-evidenced techniques. This indicates a lack of consensus between scientific best evidence and what EPs do in their day-to-day practice, and they may prefer to use their professional experience and personal beliefs over research to guide their actions (Dunsmuir et al., 2009; Fox, 2003).

The Effective Dissemination of Research

Given the growing concern that the full potential for research evidence to improve practice and inform decision-making, in various settings, is not yet realised (Wilson et al., 2010) and the emphasis on EBP and PBE within the educational psychology discipline, it is crucial that consideration is given to how the gap between research and practice can be narrowed. Therefore, effective processes for dissemination must be explored. In general terms, dissemination can be thought of as the mechanisms employed for sharing knowledge and ideas that stem from research with target audiences who need and can use them (Freemantle & Watt, 1994). However, disseminators must consider the ob-

jective of their information sharing, and Harmsworth and Turpin (2000/2002) have suggested three main dissemination purposes. Firstly, the dissemination of *awareness* targets audiences that do not need detailed knowledge of the research findings, although some recognition would be beneficial. Secondly, dissemination for *understanding* involves targeting specific audiences that require a deeper comprehension of the research findings. Finally, dissemination for *action* should result in changes in practice as a direct result of the research, and the target audiences would need to have an aligned skill set and knowledge base to access the research and implement sustainable change. Harmsworth and Turpin (2000/2002) have suggested that a research project that undertakes all three levels of dissemination will probably pass through all stages (*awareness*, *understanding* and *action*) in turn.

It is likely that different stakeholders will require different levels of dissemination. For example, regarding the authors' publications, parents and carers will need an awareness of the impact SLCN could have on their child and the support they can access and are entitled to when they have concerns. When making informed choices regarding interventions for children with SLCN, educational professionals, such as teachers and special educational needs and disability co-ordinators (SENDCOs), initially require an awareness but will need to develop further understanding of the range of specific programmes and their evidence base. Through the dissemination of the research findings at all three levels, EPs could reflect on their current practices with a view to enhancing their knowledge and skills to improve the support they currently give to children with SLCN. In other words, it should result in action. In the area of SLCN, Vivash et al. (2018) have called for such action by asking the EP profession to "re-align themselves with the SLCN population" (p. 53).

A decade after Harmsworth and Turpin suggested their dissemination framework, in a systematic scoping review, Wilson et al. (2010) have identified twenty dissemination frameworks based on a range of theoretical foundations. For example, the Persuasion of Communication Matrix (McGuire, 1969, cited by Wilson et al., 2010) has suggested that to persuade people to change, via the dissemination of research findings, consideration must be given to the source of the communication, the *message* the disseminator wishes to communicate, the channels of communication, the characteristics of the receiver or target audience and the destination or setting in which the communication takes place. The Diffusions of Innovations Theory (Rogers, 2003, cited by Wilson et al., 2010) has suggested change occurs over time and relies on the five-phase process of knowledge, persuasion, decision, implementation and confirmation. Finally, The Social Marketing approach (Kotler & Zaltman, 1971, cited by Wilson et al., 2010) has focused on advertising and promoting the social benefits of the research findings. Although the discussed theories contain different dissemination elements, they all understand that, to effect change, target audiences need to be persuaded that the adoption of new practices is a good idea, and this is the first stage of implementation (Blase et al., 2012).

Promoting and Evaluating the Dissemination and Impact of Research

Harmsworth and Turpin (2000/2002) have suggested a ten-step dissemination plan, which is outlined in Figure 1. This is based on the previously discussed sequential framework of dissemination purposes, identified as *awareness*, *understanding* and *action*. The origin of this framework is the earlier Persuasion and Communication Matrix (McGuire, 1969, cited by Wilson et al., 2010), and it was specifically designed to disseminate research within the field of education.

Figure 1

Harmsworth and Turpin's 2000/2002 Ten-Step Dissemination Strategy

- 1. What is dissemination?
- 2. What do we want to disseminate?
- 3. Who are our stakeholders and what are we offering them?
- 4. When do we disseminate?
- 5. What are the most effective ways of disseminating?
- 6. Who might help us disseminate?
- 7. How do we prepare our strategy?
- 8. How do we turn our strategy into an action plan?
- 9. How do we cost our dissemination activities?
- 10. How do we know we have been successful?

Harmsworth and Turpin (2000/2002) recommend that the dissemination plan should be outlined in advance because the dissemination strategy is as important as the research itself, and they advise a multi-stranded communications approach because relying on one specific channel is less likely to be successful. They also describe several dissemination methods, which include: briefings; conferences; journal articles; websites; workshops; and newsletters, and stress that the chosen means of communication must be the most appropriate for the specific target audience. Furthermore, identifying existing channels of communication will increase

the chances of successful dissemination through established routes. For example, the target audience may already engage with specific events, conferences and journals within their field. Evaluation of the effects of the dissemination plan, through regular review of progress towards measurable success criteria, is vital.

Implementation Science

An effective dissemination plan can raise awareness, enhance understanding and even result in action or change in practice at an individual level. The authors, however, are of the opinion that sharing research findings via briefings, journals, conferences and so forth is not enough to affect sustainable change at an organisational level. This requires an implementation plan involving a two-pronged strategy to ensure success. The first, as previously discussed, is a strong evidence base, whether this is founded on EBP or PBE. The second is the use of evidence-based implementation strategies that promote the adoption and continuation of evidencebased practices to ensure sustainable change (Boyle & Kelly, 2017). This notion is supported by Killerby and Dunsmuir (2018). They report that, although researchers rarely measure the fidelity of intervention implementation, when they do, successful execution and co-ordination correlates positively with higher pupil outcomes.

Current educational policy instructs schools to adopt evidence-based interventions to support children with SEND (Department for Education & Department of Health, 2014), and organisations such as the Communications Trust and the Education Endowment Foundation provide information about such programmes. However, national data would suggest this is not having the desired impact on pupil outcomes (Department for Education, 2019), and the authors are of the opinion that this is due, in part, to poor implementation. Therefore, if the research community is serious about ensuring the evidence they generate informs professional practices in schools, educational psychology services (EPSs) and local authorities (LAs), they will need to consider investing in the dissemination and implementation processes as well as the research. This must acknowledge that successful progression from exploration to full implementation of an evidencebased programme takes two to four years and is characterised by progress, setbacks and on-going problem-solving (Blase et al., 2012). For this reason, strategies for implementation, as well as dissemination, should be considered within the strategic plan, and an implementation framework to support organisations to effect sustainable change is outlined in Figures 2 and 3 (Figure 2 is available in A3 on request).

Figure 2

Six-Staged Framework for Implementing Evidence-Based Programmes in Schools (Adapted from Blase et al., 2012)

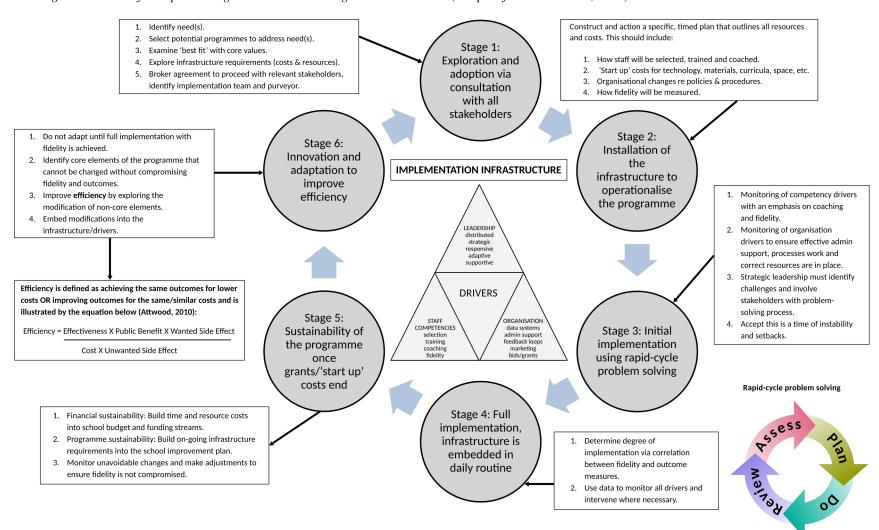
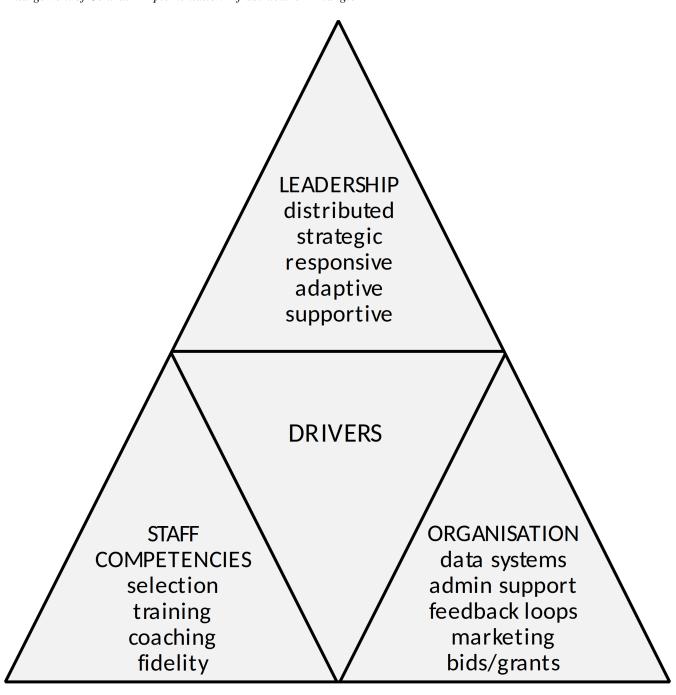


Figure 3

Enlargement of Central "Implementation Infrastructure" Triangle



Finally, the author's dissemination plan, from their own previous research (see Sedgwick & Stothard, 2018, 2019) is outlined in Table 2 and has been included in this paper for illustrative purposes. They are aware that their dissemination framework of choice is sequential and requires awareness and understanding to be in place before action can follow. They are also mindful of their limitations and have, therefore, focused the dissemination plan around organisations that they can access: in this case, the first author's EPS and Manchester University. Once the dissemination plan outlined in Table 2 is operationalised, the authors hope they will be able to disseminate further, to other doctoral programmes, via their affiliation with Manchester University. Furthermore, the first author is optimistic that if her EPS takes decisive action, as a result of the dissemination, best practice should be embedded. This could lead to the marketing of the implementation journey via publications, existing conferences or a pro-active campaign that includes traded work that will reach a wider EP audience.

Dissemination Plan

Table 2

What is Being Disseminated?	Target Audience	Purpose	Method	Disseminator(s)	Costs	Success Criteria
Main study findings from 2nd publication.	Participants.	To raise awareness.	Email manuscripts before submission.	First author.	None.	Participants will describe how findings have impacted their practice.
Findings from 1st publication to inform evidence-based interventions that EPs recommend to schools. Findings from 2nd publication to stimulate reflection on current practice.	EP team.	To raise awareness, develop understanding and encourage action to improve practice.	Presentation followed by discussion at team meeting. Publications distributed as pre-reading.	First author.	Preparation time.	Improved practices within the EP team will result in more children with SLCN being identified and better provision being put in place.
A wider understanding of the main findings from 1st publication.	EPs, TEPs, SENDCos and KS1 teachers, both nationally and internationally.	To raise awareness, develop understanding and encourage action to improve practice.	1st publication in the journal Support for Learning	First author and publishers.	None.	Improved Quality First Teaching to support language development for all KS1 children and targeted support for those with SLCN.
Findings from 1st publication to inform evidence-based interventions considered by schools. Also, marketing of specific training to support intervention design and implementation.	SENDCos, KS1 teachers and teaching assistants within the first author's LA.	To raise awareness, develop understanding and encourage action to improve practice.	Presentation at SENDCo network meeting, course flyers, delivery of course to KS1 teachers and their assistants.	First author.	Preparation time, printed materials, travel costs for first author to get to venue.	As above but at a local level. Also, successful implementation of interventions at a classroom level.

What is Being Disseminated?	Target Audience	Purpose	Method	Disseminator(s)	Costs	Success Criteria
A wider understanding of the main findings of 2nd publication.	EPs and TEPs, both nationally and internationally.	To raise awareness, develop understanding and encourage action to improve practice.	2nd publication in the journal Educational Psychology in Practice.	First author and publisher.	None.	Improved practices within the EP profession will result in more children with SLCN being identified and better provision being put in place.
A general understanding of evidence-based implementation science and the role that the EPS can play in supporting schools and MATs.	CEOs of MATs, Headteachers, and strategic leaders within the first author's LA.	To raise awareness, develop understanding and encourage action to improve practice.	Presentation at the "school leaders" conference.	First author.	Preparation time, printed materials, travel costs for first author to get to venue.	EPS brokers traded work with schools and MATS. Better outcomes for children because programmes are implemented successfully.
Specific targeted dissemination for TEPs via the sharing of main findings from both publications.	TEPs studying at Manchester University.	To raise awareness and develop understanding to inform practice.	Delivery of SLCN seminars at Manchester University, including the sharing of the authors' research findings.	University tutor responsible for SLCN, with the first author's support, if requested.	Preparation time, printed materials, travel costs for first author to get to the University, if required.	TEPs will be able to summarise the main research findings from both publications. They will consider SLCN as part of their hypothesis formulation and recommend suitable interventions when it is identified.
Dissemination of the recommendations from both publications as a basis to commission further research in the field of SLCN.	Course tutors and TEPs at Manchester University.	To stimulate action by promoting further research.	Presentation at Manchester University's research commissioning day.	First author and course tutor responsible for SLCN.	Preparation time, printed materials, travel costs for first author to get to venue(s).	Future doctoral training will be linked to the recommendations made by the research, and the EPS will commission Manchester University to conduct further research.

Conclusion

This reflective practice paper aimed to review the concepts of EBP and PBE within the discipline of educational psychology and to consider how research evidence can be effectively disseminated. Findings indicate that, generally, EPs are not basing their practice on well-evidenced techniques, and there is a debate within the profession regarding the acceptance of the research hierarchy to judge what constitutes "high quality" research. Acknowledging the importance of individual differences, context and stakeholders' views has led to the development of PBE, and EPs are well positioned to build a practice-led evidence base through their work with schools. However, it is widely accepted that the transfer of research knowledge into practice, whether it stems from EBP or PBE, is dependent on effective dissemination. Furthermore, this paper argues that it is critical to consider Implementation Science (Blase et al., 2012) if sustainable changes are to be made at an organisational level.

A dissemination plan for promoting research within the school, EP and research communities has been recommended. This includes an implementation framework to support the successful adoption of interventions in schools. Finally, current educational policy instructs schools to adopt evidence-based interventions to support children with SEND (Department for Education & Department of Health, 2014). However, national data would suggest this is not having the desired impact on pupil outcomes (Department for Education, 2019); the authors are of the opinion that this is due, in part, to poor implementation. Implementation Science, therefore, must become part of the political agenda for education if we are to improve the life chances and wellbeing of future generations. Furthermore, EPs are well positioned to support schools in successfully implementing evidencebased programmes with fidelity through the application of the suggested framework.

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